



Development, implementation and evaluation of an evidence-based practice model in a new hospital in Chile

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Abstract

Aims: To describe an implementation programme for an evidence-based practice (EBP) model in a new Chilean hospital and to analyse the programme evaluation results.

Background: Evidence-based practice is key to professional nursing for improving health care safety and quality.

Methods: First, a literature review was performed to develop an institutional EBP model. Second, internal and external analyses contributed to assessing facilitators for and barriers to implementation. Third, a multi-stage implementation plan was conducted. Fourth, process and outcome indicators were evaluated.

Results: The model considered the basic elements of EBP and outlined different decision-making levels in clinical practice. Several facilitators for implementation were identified. Each implementation stage included activities addressing EBP knowledge, attitude and skills. Outcome indicators showed significant improvement regarding knowledge ($p = .038$). Providers with formal EBP training, compared with providers without training, showed a significant difference of 8.6% (0.6 points) in the average CPBE-19 score in knowledge, attitude and application in the last evaluation ($p < .01$).

Conclusion: Having an EBP programme with ongoing implementation strategies improves knowledge over time, and formal training enhances positive results.

Implications for nursing management: Nurse managers can build an institutional research culture to improve the quality of care using an EBP programme that fits organisational needs.

KEYWORDS

Chile, evidence-based nursing, evidence-based practice, nursing management, programme evaluation

1 | BACKGROUND

Safe, quality patient care is a recurring concern for health care institutions in Chile. A report published by the Lancet Global Health Commission explains that many countries exhibit systematic deficits

in health care quality, with developing countries being the most affected (Kruk et al., 2018). The report adds that providing health care services without guaranteeing minimum quality standards is unethical, inefficient and a waste of scarce resources (Kruk et al., 2018). Other authoritative international bodies have raised the need for

nurses to provide evidence-based care as an important quality-improvement strategy (The Joint Commission, 2007). In Latin American countries, providing evidence-based practice (EBP) continues to be a challenge. In these countries, non-medical health professionals' education ensures the development of clinical, managerial, educational and research competencies, but training in EBP is very weak. The main barriers to implementing EBP are lack of knowledge, lack of experience and language barriers, since most scientific literature is in English (Bertulis, 2008; Hines, Ramsbotham, & Coyer, 2015; Khammarnia, Mohammadi, Amani, Rezaeian, & Setoodehzadeh, 2015).

Several authors agree that EBP improves the quality of care and patient safety, enhances professional competencies and reduces costs associated with care delivery (Abad-Corpa et al., 2012; Cullen & Adams, 2012; Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012; Teresi et al., 2013). Other authors state that EBP is associated with better organisational and patient outcomes for several reasons, as it reduces practice variations (Wells, Free, & Adams, 2007), improves provider satisfaction (Levin, Fineout-Overholt, Melnyk, Barnes, & Vetter, 2011), increases nurses' autonomy (Novak, Dooley, & Clark, 2008) and reduces stress by providing clinical guidelines based on evidence (Van Patter & Schaffer, 2009).

Multiple conditions are required to successfully implement EBP. A key factor is the creation of an organisational research culture (Melnyk et al., 2016; Melnyk, Gallagher-Ford, Zellefrow, Tucker, Van Dromme, et al., 2018). To build and consolidate this culture over time, evidence-based care must be the natural way of working within an entire organisation (Melnyk, 2016). An organisational environment must support the EBP learning process and facilitate the use of evidence-based interventions in daily practice (Nilsen, Neher, Ellström, & Gardner, 2017). Thus, the implementation of EBP requires institutional will, or even more so, institutional policy, strong leadership, and interdisciplinary and individual commitment (Shayan, Kiwanuka, & Nakaye, 2019). Nurse managers have decisive roles in implementing and sustaining EBP. This requires knowledge on their part, awareness of the importance of EBP and decision-making to address implementation barriers (Bianchi et al., 2018).

For nurses and other health care professionals, the implementation of EBP presents two interrelated challenges: acquisition of EBP skills and adoption of evidence-based interventions (Nilsen et al., 2017). Education is the key to acquiring skills; however, by itself, it does not produce the behavioural changes necessary for EBP. To attain these changes, a combination of knowledge, skills and attitude is needed (Melnyk, Gallagher-Ford, Zellefrow, Tucker, Thomas, et al., 2018). According to several authors, training mentors who can support clinical staff in the development and maintenance of EBP contributes to successful implementation (Friesen, Brady, Milligan, & Christensen, 2017; Melnyk, 2016; Spiva et al., 2017). Organisational leaders also play an important role, and must be 'evidence-based practitioners' and EBP facilitators (Warren et al., 2016). Leaders may participate in interprofessional EBP teams that model behaviours to the rest of the organisation (Warren et al., 2016). Other facilitators

are academic environments, existing resources and administrative support. Among factors that can accelerate translating evidence into practice are incentives for successful implementation and formal organisational structures that place EBP at an institution's centre (Fineout-Overholt, Melnyk, & Schultz, 2005). Organisations that foster nursing excellence, such as hospitals with *Magnet* accreditation, are committed to EBP. To receive *Magnet* accreditation, hospitals need to demonstrate a systematic approach to EBP as a quality-improvement strategy (Wise, 2009). One aspect of this approach may be the establishment of an EBP model.

Different EBP models have been developed to guide EBP implementation (Gawlinski & Rutledge, 2008); however, none meet all the needs of different institutions (Schaffer, Sandau, & Diedrick, 2013). Before developing an EBP model, it is important to assess organisational and personal barriers that may interfere with implementation. In low- and middle-income countries, special attention should be paid to organisational-level barriers, such as insufficient time, lack of personnel, heavy staff workloads, lack of adequate resources and lack of access to the Internet or scientific literature (Khammarnia et al., 2015; Kim et al., 2016). At the individual level, barriers such as education, work experience and poor English-language proficiency need to be considered (Khammarnia et al., 2015). Any plan to implement an EBP model should address both types of barriers and emphasize the benefits for patients and providers (Kim et al., 2016).

Implementing strategies to favour EBP adoption requires ongoing evaluation of intervention effectiveness. Positive evaluations are expected to reinforce the use of evidence in clinical practice over time (Mateo & Kirchhoff, 2009; Titler, Everett, & Adams, 2007). Professionals who master EBP competencies make better decisions and attain better patient outcomes (Melnyk et al., 2012; Melnyk, Gallagher-Ford, Zellefrow, Tucker, Thomas, et al., 2018).

In 2005, a 30-year-old Chilean private university incorporated EBP into its nursing curriculum. The university hospital, inaugurated in 2014, is a high-complexity general hospital, with slightly more than 100 beds and an outpatient clinic. The hospital sees all kinds of adult and child patients, and performs both general and more complex surgeries (except organ transplants). The staff totals almost 1,200 people, and approximately one-third belong to the Nursing Division. The Nursing Division is led by the Director of Nursing, who is part of the hospital's Board of Directors and has the same decision-making capacity as any other director in the organisation. She leads the nursing team, aided by the Chief Nurse Officer and nurse managers in each clinical unit. Unlike in many other Chilean hospitals, the Director of Nursing has full authority to make decisions about the nurses, their organisation and their practice.

The hospital was conceived as a teaching hospital and contributes to the education of students in different health care programmes, including nursing students. Aligned with the hospital's mission to provide safe and high-quality care, EBP was envisioned as a hallmark of nursing care, translating into practice what nursing students learn in their nursing programmes. For this purpose, in the early stages of its construction, the hospital started developing an EBP implementation programme, led by a nurse coordinator of

EBP, that includes an EBP model to inform the practice of nurses and other health care providers.

2 | AIMS

This article has two aims. First, it describes the implementation of an EBP model in a new hospital, including the characteristics of the model. Second, it evaluates the programme through process and outcome indicators. This programme can motivate and guide nurse managers from other institutions who are seeking to improve the patient safety and the quality of care through EBP.

3 | METHODS

The implementation programme for the hospital's EBP model used a three-stage approach. First, a literature review was conducted to develop the EBP model. Second, internal and external analyses were conducted to evaluate facilitators for and barriers to programme implementation. Third, implementation strategies were chosen and executed. A longitudinal design was used for programme evaluation, in which process and outcome indicators were established and measured at different timepoints.

3.1 | Theoretical framework

The theoretical framework that guided this project was Donabedian's Quality Model (Donabedian, 1966). Donabedian conceptualized the quality as the product of a linear association between structure, processes and outcomes for health care organisations. The structure of an organisation is thought to affect processes that lead to either desirable or undesirable outcomes (Mitchell, Ferketich, & Jennings, 1998). For Donabedian, an organisation's structure includes aspects such as the setting, providers' qualifications and administrative systems through which care takes place (Ayanian & Markel, 2016). In this project, EBP model implementation was conceived as an intervention at the *structural level*, since the target was the workforce, assuming that improvements in the use of EBP by the hospital staff—in particular the nursing team—would lead to the optimization of processes and ultimately to better patient outcomes.

3.2 | Implementation programme for an EBP model

3.2.1 | Literature review

To develop the EBP model, an extensive review was performed on literature from the year 2000 onwards. The following databases were used: Wiley Online Library, Elsevier, CINAHL, Health Source: Nursing/Academic Edition, PubMed and Cochrane Library. The

search was restricted to articles in English and Spanish. The keywords used were 'evidence-based practice', 'EBP model', 'EBP implementation', 'barriers' and 'facilitators'. Several existing EBP models, as well as other related literature, were analysed. Existing models provided useful guidelines for model development. The most common elements in the existing models were considered relevant in framing the institutional model. The model was developed by the nurse coordinator of EBP in collaboration with the Director of Nursing. A graphical representation of the model was developed and presented to the hospital's Board of Directors for approval.

3.2.2 | Internal and external analyses

Internal and external analyses were conducted by the nurse coordinator of EBP, in collaboration with the Director of Nursing, to assess facilitators and barriers that needed to be addressed when implementing the programme. The external analysis included assessment of the disposition to adopt changes in hospital environments, existence of other hospitals with well-established EBP cultures or formal EBP models, and formal EBP training for students in health care programmes. The internal analysis evaluated the hospital's mission and vision statements to define the congruency between them and the establishment of a research culture, hospital administration support and commitment of nurse managers, alignment with regard to EBP between nurse leaders at the hospital and at the School of Nursing, and the proportion of alumni with formal EBP training within the nursing staff.

3.2.3 | Implementation

Programme implementation was planned in three stages, each with specific needs according to the state of the hospital development. Stage 1 considered the years during the hospital construction up to the opening date. Stage 2 began when the hospital opened to the public, in May 2014, and ended in December 2015; this stage comprised the early months of operation. Stage 3 is in place since 2016. Each stage included activities specifically targeted to develop EBP knowledge, positive attitudes towards EBP among health care workers and skills to translate evidence into practice. In each stage, the previous activities were performed again with new activities added in.

3.3 | Programme evaluation

3.3.1 | Definition of indicators

Process indicators included the number of norms and procedural guidelines performed with evidence, percentage of the total units that included an EBP mentor, percentage of mentor meetings out of those planned and held during the year and annual average

percentage of mentors attending, percentage of case presentations out of those planned during the year, and percentage of health care professionals (excluding physicians) with formal training in EBP. Outcome indicators included the contribution of EBP to the scientific community, measured through the number of research projects presented in national or international conferences and the number of scientific publications, and health care providers' perceptions of their competence to integrate evidence into their practice.

Providers' perceptions about their competence in integrating evidence into practice were measured using the Clinical Effectiveness and Evidence-based Practice Questionnaire (CPBE-19) (De Pedro et al., 2009), which was adapted and validated into Spanish from the Evidence-based Practice Questionnaire (EBPQ) (Upton & Upton, 2006). This questionnaire was chosen since it is the only one validated and adapted to Spanish, and it was specifically validated for nurses. There is a similar instrument, called the Health Sciences Evidence-Based Practice (HS-EBP) Questionnaire, that has also been validated in Spanish; however, this instrument was developed for physical therapists (Guerra, Bagur, & Girabent, 2012; Jette et al., 2003). Confirmatory analysis of the EBPQ-19 offered the following values for goodness-of-fit indices: Normed Fit Index (NFI) of 0.91 and Comparative Fit Index (CFI) of 0.93 (reference value for both >0.90), and the Standardized Root Mean Square Residual (SMSR) Index of 0.064 (reference value <0.08) (De Pedro et al., 2009). The 19-item questionnaire collects self-reported answers from health care providers. Each question is rated from 1 to 7, where 1 is 'never' and 7 is 'frequently'. Three questions measure *attitude* towards EBP (Cronbach's alpha 0.722), 10 questions measure *knowledge* (Cronbach's alpha 0.916), and 6 questions measure *use of evidence* in clinical practice (Cronbach's alpha 0.894) (De Pedro et al., 2009). For each group of questions, the mean was calculated. These averages were dichotomized: those ranging from 5 to 7 were considered 'sufficient', and those lower than 5 were 'insufficient'.

3.4 | Data collection process

To evaluate the results, all activities implemented in each stage were documented. The nurse coordinator of EBP collected all data needed for evaluation. To collect information about evidence-based procedural guidelines, documentation from the hospital's Quality Assurance Department, located on a special server, was reviewed. Attendance at mentor meetings and case presentations were recorded through 'sign-up sheets' signed by participants. The CPBE-19 was printed, and at the beginning of each year, nurse managers distributed the questionnaire to the professionals in their units. The questionnaires remained anonymous, and were collected by the same nurse manager or a secretary and delivered to the nurse coordinator of EBP, who built a database with the responses.

3.4.1 | Data analysis

Descriptive analyses used means for quantitative variables and proportions, expressed as percentages, for qualitative variables. Inferential analyses were performed using a chi-square test and paired *t* test, with a 95% confidence interval and significance level of 0.05. Data analysis was performed using Stata 16.0.

4 | RESULTS

4.1 | Programme implementation

4.1.1 | The EBP model

From the literature review, several EBP models were retrieved and reviewed: Advancing Research and Clinical Practice Through Close Collaboration (ARCC) (Schaffer et al., 2013); ACE Star Model of Knowledge Transformation (Kring, 2008; Stevens, 2004); Iowa Model (Iowa Model Collaborative, 2017; Titler et al., 2001); Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Model (Newhouse, Dearholt, Poe, Pugh, & White, 2008); Promoting Action on Research Implementation in Health Services (PARIHS) Framework (Rycroft-Malone, 2004); and Stetler Model (Schaffer et al., 2013; Stetler, 2001; Titler et al., 2001). Based on the literature review findings, the hospital's EBP model was developed. Figure 1 depicts the core elements of this model. As proposed by the literature, the model addresses the four basic elements of EBP: professional experience, patient preferences, scientific evidence and resources (Rosenberg & Donald, 1995; Sacket, Richardson, Rosenberg, & Haynes, 1997). These elements fit the main organisational values: family- and patient-centred care, a culture of professional excellence, and a spirit of collaboration and service. The model also outlines the different levels of decision-making in clinical practice: decisions directly related to the patient, unit-level decisions and hospital-level decisions. Based on previous literature and existing models, the key competencies that professionals need to have to incorporate EBP were defined. These competencies included critical-thinking skills, skills to search scientific evidence, skills to critically appraise scientific literature, capacity to translate evidence into practice, generation of local evidence and communication of evidence.

4.1.2 | Internal and external analyses

The internal analysis was very valuable in identifying many implementation facilitators within the organisation. Some facilitators included congruency of the hospital mission and vision with the purpose of the model for improving quality; the definition of the hospital as an academic centre; support from the hospital administration and nurse managers; alignment within the university between nurse leaders at the hospital and at the School of Nursing regarding EBP; a significant percentage of providers, including

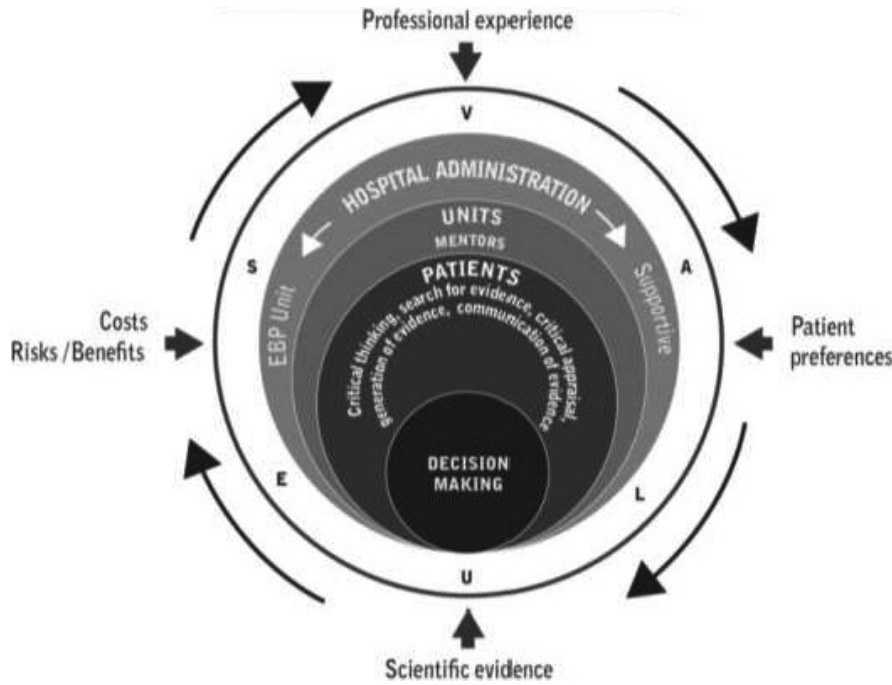


FIGURE 1 Evidence-based practice model diagram

TABLE 1 EBP model implementation activities, by stages

Strategies/Activities	Stage 1 2013–May 2014 (before opening)	Stage 2 May 2014–2015	Stage 3 2016–onwards
To build knowledge			
EBP training for nurse managers	x		
EBP course (45 hr)		x	x
Statistical analysis course			x
Individual tutorials	x	x	x
To improve attitude			
Selection and training of mentors		x	x
Meetings with mentors		x	x
Dissemination of work done in EBP course		x	x
Dissemination of evidence through conferences and publications		x	x
First research conference for staff (in 2018)			x
To develop skills			
Elaboration of hospital norms and procedural guidelines based on evidence	x	x	x
Monthly meetings to discuss clinical cases using evidence.		x	x
Generation of evidence through research projects		x	x

nurses, who were university alumni and received EBP training; access to the university library and databases; and being a new hospital that could adopt a culture focused on research and EBP from the beginning. The internal analysis showed that the presence of a nursing team with a significant percentage of nurses with little-to-no EBP experience was a barrier. The external analysis confirmed the lack of a referential EBP model implemented in another hospital in Chile.

4.1.3 | Implementation

To build the competencies described by the model among clinical staff, a sequence of activities was planned and conducted. These activities had been previously described in the literature as important (Fineout-Overholt & Johnston, 2005, 2006; Odell & Barta, 2011). Table 1 provides a summary of the implemented activities by stages.

Prior to the hospital opening, all nurse managers received formal training in EBP. At the same time, the nurse coordinator of EBP individually mentored managers to use the best available evidence in the process of writing norms and procedural guidelines for the hospital. As part of the orientation process, all hired nurses were required to learn general aspects of EBP and its importance in providing safe and high-quality care. This activity is still in place.

Since the hospital opened in May 2014, formal EBP training has continued. A 45-hr course is offered for nurses during their regular work schedule. At the end of the course, through participation in national and international conferences and through publications, the developed work is disseminated. In 2015, EBP mentors were designated for each unit from among the professionals with greater knowledge and motivation regarding EBP. The nurse coordinator of EBP holds monthly meetings with the mentors to evaluate each unit's progress. Additionally, monthly meetings are held to discuss real clinical cases and analyse possible evidence-based interventions.

4.2 | Programme evaluation

The first evaluation was conducted in 2016 and continued on an annual basis.

4.2.1 | Process indicators

Results are shown in Table 2. The percentages of norms and procedural guidelines developed or updated with the best available evidence have increased over time, although the target is to reach

100%. All hospital units have had an EBP mentor since 2017, and mentor meetings have taken place as planned, with average attendance approaching only 50%. Up to 2016, 26 providers from the Nursing Division had attended a formal EBP course. In 2017, providers from the Medical Division also started receiving training. As of 2019, 113 professionals had been trained. At the end of 2019, on average, 44% of professionals in each clinical unit had received formal training. In seven out of fifteen units (47%), more than 50% of professionals were trained. Figure 2 shows the percentages of providers with EBP training in each professional category. The highest proportions of professionals with EBP training were among physical and occupational therapists. Slightly more than 40% of nurses had been trained; however, it is important to consider that the absolute number of nurses in the organisation is far larger than that of other professionals.

4.2.2 | Outcome indicators

With respect to contributions to the scientific community, providers had participated in 26 conferences with an abstract acceptance rate of 100%, and had published seven articles, with only one manuscript rejected. Table 3 shows the CPBE-19 results. To calculate response rates, we considered the actual number of health care professionals in the organisation per year. Response rates were as follows: 2016, 76% ($N = 126$); 2017, 85% ($N = 125$); 2018, 86% ($N = 173$); and 2019, 84% ($N = 189$). The main reasons for not achieving higher response rates were sick leaves and vacations. Over the years, there was a statistically significant difference in the percentage of providers with sufficient EBP knowledge ($p = .038$).

TABLE 2 Programme evaluation: process indicators

Process indicator	2016	2017	2018	2019
Norms and procedural guidelines made with evidence, N (%)	52 (72.2)	61 (72.6)	69 (74.2)	75 (90.6)
Number of units with EBP mentors, N (%)	9 (81.2)	11 (100.0)	14 (100.0)	14 (100.0)
Mentor meetings made, N (%)	10 (100.0)	10 (100.0)	10 (100.0)	10 (100.0)
Annual average attendance to mentor meetings, %	46.9	55.8	54.0	45.0
Clinical case presentation meetings made, N (%)	10 (100.0)	10 (100.0)	9 (90.0)	10 (100.0)

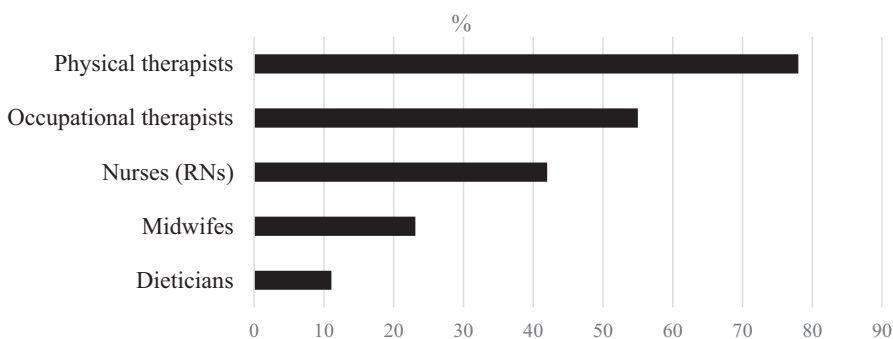


FIGURE 2 Providers with formal EBP training at the end of 2019, by professional categories (%)

This difference was mainly driven by the increase in the percentage of providers with knowledge from 2017 to 2018 (chi-square test: 7.6, $p = .006$). In 2019, however, there was a drop in this percentage. Regarding attitude towards EBP, a high percentage of providers had a positive attitude, which remained fairly stable over time. In all four measures, this percentage was much larger, compared with knowledge and application, which indicated that most providers had a positive disposition towards EBP. For application, as with knowledge, the percentage of providers who applied EBP decreased in the last measure; however, overall, there were no significant differences over the years.

When comparing knowledge, attitude and application among those with and without formal EBP training, results showed that providers with training had better results in terms of knowledge and application. Since 2016, statistically significant differences have been found regarding application. In 2018, a significant difference was found for knowledge, and for attitude in 2019 (see Table 4). Therefore, in 2019, all three indicators, knowledge, attitude and application, were significantly better (8.6% or 0.6 points in the mean CPBE-19 score) among providers who had received formal EBP training. Raw scores were better for attitude than for knowledge or application among providers with and without training.

5 | DISCUSSION

The definition of an EBP programme, with the development of the model, since the beginning of the hospital project, was key to helping build an institutional research culture. The Nursing Division led the programme implementation among nurses and other health care

TABLE 3 Professionals' perceptions on EBP knowledge, attitude and application, by year (% answers ≥ 5 , considered as 'sufficient')

Area of self-report	2016	2017	2018	2019	p-value
	n = 96	n = 106	n = 149	n = 159	
Knowledge	37.5	26.4	41.6	33.8	.038*
Attitude	92.7	92.5	89.9	94.3	.543
Application	42.7	45.3	46.8	24.5	.879

*Significance level $< .05$.

TABLE 4 Comparison of CPBE-19 questionnaire mean scores among providers who received formal EBP training and those who did not, by year

Area of self-report	2016			2017			2018			2019		
	With training	Without training	p-value	With training	Without training	p-value	With training	Without training	p-value	With training	Without training	p-value
	n = 25	n = 71		n = 32	n = 74		n = 24	n = 125		n = 64	n = 94	
Knowledge	4.7	4.1	.053	4.4	4.0	.054	4.9	4.2	.018*	4.6	4.0	.004*
Attitude	6.2	6.2	.440	6.4	6.2	.148	6.1	6.1	.492	6.7	6.1	.003*
Application	5.0	4.6	.049*	5.2	4.5	.002*	5.4	4.6	<.001*	4.7	4.1	<.001*

*Significance level $< .05$.

professionals. The dissemination of the programme to other providers helped to spread this culture more quickly and to the vast majority of units. The programme provided structure and a common language, and guided the path towards building this culture. Supporting this path were the four basic elements of EBP and the hospital's organisational values. In line with previous literature, the support of hospital authorities, leadership and commitment of nurse managers, participation of mentors and an ongoing training process were key to the implementation process (Fleiszer, Semenic, Ritchie, Richer, & Denis, 2016; Friesen et al., 2017; Melnyk, 2016; Wallen et al., 2010; Warren et al., 2016). As evidence shows, engagement of nurse managers and mentors was important to simultaneously implement several strategies and sustain EBP over the long term (Fleiszer et al., 2016). Nurse managers provided a supportive environment, and the ones who placed a higher value on EBP were more successful in engaging their staff. Consistent with international evidence, mentors played an important role in guiding bedside nurses in EBP implementation (Saunders & Vehviläinen-Julkunen, 2017). Challenges for implementation included providers' abilities to critically appraise the literature and identify the best evidence, and a perceived lack of time. Efforts were made to help providers understand that EBP needs to be integrated into their daily work to ensure patients receive the best care possible. Programme implementation demands perseverance and flexibility to redefine activities according to the organisational needs.

The programme results have been positive and encouraging, although there is still room for improvement. Process indicators show the sustainability of the implementation plan over time. As a standard, all norms and procedural guidelines should be updated with the best available evidence, which requires a coordinated effort with the Quality Assurance Department. Low attendance for mentor meetings could be addressed by providing mentors with the time they need, so that they do not need to manage EBP training and clinical duties simultaneously.

Outcome indicators showed a high percentage of providers within the organisation had positive attitudes towards EBP. The decrease in the last measurement of the percentage of providers with sufficient knowledge and application of EBP may have been due to a recent hospital expansion with an increase in employees. It is likely that the new providers were not familiar with the organisation's

research culture, and most of them lacked specific training. Formal training in EBP was shown to be an effective and valuable implementation strategy.

The authors of this study acknowledge three main limitations. First, the CPBE-19 measures self-reported outcomes that can be interpreted as perceptions more than actual knowledge and application of EBP (for attitude, a self-report is likely to be the best possible measure). Other authors have already addressed this limitation and called for more accurate measures of EBP competencies, since studies have shown discrepancies between competency evaluations via self-assessments and more objective performance measures (Saunders & Vehviläinen-Julkunen, 2018). Incorporating more direct measures of EBP knowledge and application is part of the improvements under consideration for programme evaluation. Still, the evaluation of these self-reported outcomes over time had been helpful to visualize trends. Second, programme evaluation has been conducted internally, which may be a source of bias, since the same organisation both implements and evaluates the programme. However, most of the indicators used do not require any interpretation, but instead 'speak for themselves'. Additionally, the hospital plans to possibly seek Magnet accreditation, which would provide external evaluation regarding EBP implementation. This is a motivation to make the internal evaluation as objective as possible. Finally, the third limitation is that the evaluation programme lacks indicators to establish an association between EBP and improved patient outcomes. Future work should identify indicators directly related to patient care that can show the impact of EBP on quality and safety.

6 | CONCLUSION

Creating a research culture and implementing EBP is a long and complex process. Sustainability over time requires perseverance and coherence between the institution's mission and the work being done. Implementation strategies were successful largely because of the presence of many facilitators. The support of the hospital administration, including the Director of Nursing, and the involvement of nurse managers were key to achieving positive outcomes. To our knowledge, this is one of the few articles that describes in detail an implementation plan for EBP with clear definitions of process and outcome indicators. This work can be valuable for other organisations that want to follow the path of improving quality through EBP.

ACKNOWLEDGEMENTS

The authors would like to thank Francisca Muñoz, BSN, RN, nurse supervisor, Clínica Universidad de los Andes, Chile.

CONFLICT OF INTERESTS

The authors have no conflict of interest.

ETHICAL APPROVAL

This study was developed along with the implementation of the hospital's EBP programme as a quality-improvement intervention. No IRB approval was required. Answering the CPBE-19 was voluntary and anonymous, and consent was implicitly provided by providers who agreed to answer the survey.

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How to cite this article: Galiano A, Simonetti M, Quiroga N, Larrain A. Development, implementation and evaluation of an evidence-based practice model in a new hospital in Chile. *J Nurs Manag*. 2020;28:1748–1757. <https://doi.org/10.1111/jonm.13134>