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HOW NURSING LEADERS PROMOTE EVIDENCE-BASED PRACTICE IMPLEMENTATION AT POINT-OF-CARE: A FOUR-COUNTRY EXPLORATORY STUDY.

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Conflict of Interest statement

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How nursing leaders promote evidence-based practice implementation at point-of-care: a four-country exploratory study.

ABSTRACT

Aims: To describe strategies nursing leaders use to promote evidence-based practice implementation at point-of-care using data from health systems in Australia, Canada, England, and Sweden.

Design: A descriptive, exploratory case-study design based on individual interviews using deductive and inductive thematic analysis and interpretation.

Methods: Fifty-five nursing leaders from Australia, Canada, England and Sweden were recruited to participate in the study. Data were collected between September 2015 and April 2016.

Results: Nursing leaders, both in formal managerial roles and enabling roles across four country jurisdictions used similar strategies to promote evidence-based practice implementation. Nursing leaders actively: promote evidence-based practice implementation; work to influence evidence-based practice implementation processes; and integrate evidence-based practice implementation into everyday policy and practices.

Conclusion: The deliberative, conscious strategies nursing leaders used were consistent across country setting, context and clinical area. These strategies were based on a series of activities and interventions around promoting, influencing and integrating evidence-based practice implementation. We conjecture that these three key strategies may be linked to two overarching ways of demonstrating effective evidence-based practice implementation leadership. The two overarching modes are described as mediating and adapting modes which reflect complex, dynamic, relationship-focused approaches nursing leaders take towards promoting evidence-based practice implementation.

Impact: This study explored how nursing leaders promote evidence-based practice implementation. Acknowledging and respecting the complex work of nursing leaders in promoting evidence-based practice implementation through mediating and adapting modes of activity is necessary to improve patient outcomes and system effectiveness.

Key words: nursing leaders; evidence-based practice; implementation; qualitative study; international comparison

INTRODUCTION

Interest in healthcare leadership roles has increased with a focus to how to support, guide and encourage evidence-based practice implementation (EBPI). Initial research focused on executive leaders' roles and physician behaviour (Weiner et al. 1997; Helfrich et al. 2007). However, work is now emerging around the role of leaders at middle management and unit levels and how they enable adoption of innovations (which includes EBPI) into practice. Middle managers are defined as employees who are supervised by top or executive leaders responsible for supervising frontline employees (Birken et al., 2018). In this paper, we also consider leaders in more enabling roles, including those responsible for providing frontline employees with clinical support, education and practice development activities. Therefore, we consider nursing leaders to be in both formal and enabling leadership roles.

Background

Several studies have reported on impact of leadership roles in implementing specific clinical improvement programs across multiple settings. Aarons et al (2014) generated and tested a measure linked to leadership within mental health EBPI projects across multiple primary care settings. The implementation leadership scale (ILS) describes 12 elements organized under four domains (*proactive; knowledgeable; supportive and perseverant leadership*) important for successful implementation (Aarons et al. 2014).

Similarly, Birken et al. (2012) utilized a large community-based quality improvement program to investigate middle manager roles in EPBI. They have continued to refine the Middle Management Theory through further testing with nurse managers (Birken et al. 2016) and systematic review (Birken et al. 2018). They claim middle managers enable innovations to be implemented by: *diffusing* and *synthesizing* information, *mediating* between strategy and every-day tasks, and *selling* the implementation.

Other researchers have explored how middle managers embrace EBPI. Gifford et al. (2006; 2008) explored nursing leadership strategies that influence uptake of clinical practice guidelines. They generated and tested a model describing effective EBPI leadership behaviours, which has undergone refinements (Gifford et al 2013) and evaluations (Tistad et al 2016; Gifford et al., 2019). Based upon Yukl et al.'s (2002) seminal work, the Ottawa Model of Implementation Leadership or O-MiLe has been conceptually mapped onto ILS (Gifford et al 2017) and promotes three core leadership dimensions (*task-oriented; relations-oriented; and change-oriented*).

The above programs have refined leadership interventions to provide additional evidence of effect. Aarons et al. (2015) reported on a feasibility study which aimed to improve staff-related leadership for EPBI. Similarly, Gifford's model was tested in a Swedish (Tistad et al. 2016) and Canadian study (Gifford et al., 2019) for feasibility and ease-of-use.

Other researchers looking at nursing leaders have identified several factors influencing leaders' ability to undertake EBPI. These include level of autonomy and power within health systems (Wilkinson et al. 2011); a number of contextual factors (e.g. culture and leadership; Gunningberg et al. 2010) and nursing leaders' own level of knowledge and skill around EPBI competencies (Shuman et al. 2018).

Weiner's (2009) seminal paper on determinants of implementation effectiveness generated a conceptual model to map key leadership ingredients for EBPI. These include at the macro level - organizational climate; leadership climate and culture related to innovation implementation; and at middle and point-of-care levels - assessments of organizational readiness to adopt innovation; generation of policies and practices that enhance implementation efforts; actively managing implementation climate and making a judgement about effectiveness of the innovation and implementation efforts on outcomes.

Implementation leadership has embraced extant leadership theories and transformational leadership principles. These emphasize role modelling, relationship building, providing encouragement and supporting change plus the ability to get things done through tasks and routines (Bass 1999). Strong evidence shows importance of these leadership styles in nursing (Cummings et al. 2018a, Cummings et al. 2018b).

Out of this emerging, rich and complicated picture it is important to locate the specific strategies, activities and interventions that promote EBPI. Whilst existing evidence has identified effective interventions related to large implementation programs (Aarons et al. 2015; Birken et al. 2012) gaps remain around nursing leaders' roles in every-day EBPI at the point-of-care. To shed further empirical light on strategies, activities and interventions that nursing leaders draw on to promote EBPI, an international team of implementation and leadership researchers explored an overarching research question: How do nursing leaders promote EPBI at point-of-care?

THE STUDY

This study was part of a larger international project called [to be added after review]

Aims

The focus for this study is on *how* nursing leaders in formal management and more enabling positions promote EBPI at the point-of-care.

Design

The broader [to be added after review] project was exploratory, descriptive and qualitative in nature (Colorafi & Evans 2016). Semi-structured interview guides, informed by a literature review and input from local stakeholders, were designed for three nursing respondent groups:

executive nurses; managers of nurses at clinical level; facilitators/nurses in leadership enabling roles responsible for supporting EBPI. A subset of these data was used to specifically answer the research question: How do nursing leaders promote EBPI at point-of-care?

Sample/Participants

Data collection took place in acute (hospital) and primary (community) care settings in Australia, Canada, England and Sweden. Sites were selected purposively and recruited via personal contact by research team members who checked the organization's interest in and level of commitment to EBP and their willingness to grant the research team access to interview staff. One site was recruited in Australia and England, and two sites each in Canada and Sweden (see Table 1)

[Table 1]

A total of 55 individuals were purposively recruited across the four countries. The sample reflected different nursing leadership roles (broadly categorized into formal and enabling roles: see Table 2), from acute and primary care settings. Most interviewees were qualified nurses. Inclusion criteria were: individuals in formal managerial roles responsible for managing nurses and patient care; individuals in enabling roles responsible for clinical support, education or other practice development activities. Recruitment was initiated by country research team leads contacting nursing executive leaders and then through them, identifying other key nursing leaders throughout their respective organisations. (see Table 2)

[Table 2]

Up to fifteen nurses per site that included a selection of nurse executives, managers, and those in enabling roles in acute and community care settings were recruited in each country.

Data collection

Data were collected between September 2015 and April 2016 by members of the research team (or a research assistant (RA) under direction) based in countries [to be added after review]. Semi-structured interviews were conducted face-to-face or telephone and were 30-60 minutes in duration. Interviews took place at a time and location that best suited each participant. Interviews were conducted either in English or Swedish. Back translation between the English and Swedish versions of the interview guide ensured congruence. All interviews were digitally audio-recorded and transcribed verbatim.

Ethical considerations

Ethics approval was obtained from each country jurisdiction:

- Australia: Human Research Ethics Committee (HREC/15/TQEH/114)

- Canada: University of Ottawa Ethics Committee (No.HO5-15-04)

- Canada: University of Alberta Health Research Ethics Board (Pro00058227)

- England: University of Manchester Ethics Committee 5 (Ref. 15429)

- Sweden: Uppsala Regional Ethical Review Board (No. 2015/273)

Ethical principles of informed consent, confidentiality and right to withdraw were maintained throughout the study.

Data analysis

Research teams per country undertook qualitative content analysis (Sandelowski 2000) using QSR NVivo 10/11 software. Data from all participant interviews were initially organized deductively under broad categories onhow nursing leaders promote EBPI at point-of-care. These categories informed the semi-strucuterd interview guide and covered:

- main evidence sources used;

- sense of reliability of evidence sources;

- assessment of appropriateness of clinical decisions based on new evidence;

- judgement of how well EPBI happened on their unit;

- approaches to supporting staff to apply EPBI.

In-depth analysis was then conducted inductively.

Rigor

Several sub-categories and themes were generated inductively to describe various perspectives emerging from the data. These were compared, initially at a country level and then at an overall study level. The team used regular SKYPE calls and annual face-to-face meetings held in England, Australia and Sweden to interrogate and refine the data, with overarching themes generated from constant discussion and comparison, challenge and 'sense-making' of the data. This continuous reflection, refinement and interrogation of the data continued to ensure the emerging categories were rooted in the interview data, thus affirming rigor of the data analytic process.

Emerging overarching themes were collated in an Excel spread sheet and workshopped during one of the international face-to-face meetings to clarify meaning, similarities and differences (Sweden, 2017). Following face-to-face meetings, [to be added after review] led data refinement and production of findings working closely with [to be added after review].

FINDINGS

All respondents across all sites demonstrated a commitment to EBP and were supportive of the requirement in their various roles to promote EBPI. A range of routine processes were described such as clinical rounds, huddles, spot checks and education sessions, accessing clinical experts and visits to organizations. Use of formal policies and procedures was identified as an important strategy that incorporated updating, verification and adoption of evidence. Policies and procedures were seen as the formal manifestation of EBP, but it was the engagement, conversations, teamwork and trust between colleagues that made the process come alive. Country responses to reliance on policies and procedures to drive EBPI varied: English, and Australian sites were more regulated by national accreditation bodies and hence had more awareness around national standards and policies. Whereas Canadian sites relied more on advanced practice and clinical experts, and dedicated information systems, such as national registers, to provide current evidence. Swedish sites relied both on national standards/guidelines and dedicated informations systems, such as national registers.

Specifically, in terms of how nursing leaders promote EBPI at point-of-care, three main overarching themes were identified:

Nursing leaders actively:

- *promoted* EBPI through a variety of strategies

- *influenced* the EPBI process for their point-of-care staff

- *integrated* EBPI using a range of organizational structures

Findings are presented using representative direct quotes from interviewees. These are denoted according to country, role and setting. Country codes: A-Australia; CW/CE-Canada West/East; E-England; S-Sweden. Role codes: M- manager; F- facilitator (numbers denote different interviewees in same role). And setting codes: A-Acute; C-Community; A/C-Acute and Community.

Nursing leaders actively promote EBPI through a variety of strategies

Strategies relate to the deliberate, conscious efforts nursing leaders make through their behaviours and interactions to promote, sell, explain, teach and role model EPBI. These actions did not rely totally on systems or structures but more upon **informal relationships; role modelling; generating ways to check the evidence**; and **developing and sustaining positive working relationships**. (see Table 3).

[Table 3]

Nursing leaders saw themselves as responsible for raising awareness and establishing an evidence-based culture at point-of-care and across the organization. Respondents described how they set cultural expectations which enabled staff to learn about and use evidence: *I don't like to spoon feed, I like to just give a little bit and say "well, okay, now where are you going to go? …I've given you this but where could you go to from here?"* [A-F2-A/C]

Nursing leaders acknowledged the importance of drawing evidence for new practice innovations from colleagues and team members: *No one person is the font of all knowledge and experience, so I very much encourage that expression and then the sharing of that*. [A-M5-A/C]. Recognizing the need to identify clinical experts and encourage information between colleagues was promoted.

Leading by example or role modelling was really important. Whether in a formal manager or enabling role, nursing leaders interpreted their roles as 'trouble shooters' and individuals able to support clinical staff to perform effectively: *And the reason…is to actually be able to be right there providing the coaching, the teaching, you know,accessing the resources virtually, reminding staff how they can do that, and sometimes we have them say..this month is wound month, let's make sure everyone out there is measuring their wounds..*[CE-M-C]

A strong factor was the importance of nursing leaders being able to check the evidence. They did this by relying on professional competence and judgement of their colleagues, both from multidisciplinary perspectives and within certain clinical specialist roles as well as knowing about evidence: *My observation is that some of those guidelines, which are meant to be based on evidence.., are several years old and in actual fact the most recent evidence has actually surpassed the content of those guidelines. Now, whether the clinician would know that…just depends how astute they are and how conversant they are with appraising evidence based practice [A-F14-A/C]*

Nursing leaders from all countries acknowledged the importance of effective communication. They talked about challenges of information overload: *We are bombarded with lots of information and changes and fluxes everywhere across the Multi-D team. You're only as good as the sharing of that information, keeping people up to date* [A-M5-A/C]. They talked about being flexible and pragmatic in their communication style: *You have a different type of engagement that can happen anywhere with meetings in corridors or at notice boards or whatever you are using. Things don't have to be so big and extraordinary* [S-M6-C]

These approaches were utilized to actively promote EBPI. Building positive relationships was the bedrock to nursing leaders' descriptions of how they ensured staff applied evidence in their practice. Leaders talked about 'selling' EBPI, communicating and using multiple types of engagement, from formal approaches as described earlier to informal chats and conversations. Nursing leaders also talked about trusting colleagues' professional judgement and competence.

They saw their roles as ensuring units had the right teams with the right expertise and they described many ways they embedded expertise in clinical teams.

Nursing leaders actively work to influence the EPBI process for point-of-care staff

Nursing leaders discussed: **involving patients/clients in the EBP process**; **feedback on individual (nurses') performance**; **more explicit support for EBPI projects**; and **greater support for nursing leadership roles in promoting EBP**. (see Table 4)

[Table 4]

When respondents were asked about the types of evidence they used to influence EBPI, they held quite a traditional view of evidence. Respondents identified guidelines, policies and procedures (both national and local) as credible sources of evidence, as well as colleagues. However, when asked about other sources of evidence, such as the role of patients and relatives, they were less clear on their role in the process: *Oh, that's a heated question (about using evidence from patients). Um, well I mean, I think we look at a variety of things… You can look at um, general relationship with patients, so that would, you know, be your patient relations as well as um, you know different priorities that are set in different clinics* [CW-M-A/C]

Nursing leaders discussed how they identified opportunities for local improvement by linking these to wider organisational structures. For example: *we have an incident reporting system..and we would use that as a learning tool. So if there was a theme, so say you had reoccurring falls you would put together an action plan which you would share with your team to look at how we can improve standards on the ward* [E-M-A/C]

Despite the consistency with which nursing leaders talked about the importance of audit and feedback, there was less alignment around how they used feedback on individual performance to improve use of evidence at point-of-care. Appreciating the need for constructive, regular and timely feedback to staff on their performance did not emerge as a consistent factor, although there were some examples of how individual leaders tried to manage such situations.

The important thing is to allow people to reflect and follow up to be able to see what happens to give them support and tuition when introducing a new work method, or whatever it is. It does not really happen. From the perspective of my role I usually hold discussions with the operational managers [S-M-A/C]

Areas for further exploration involved approaches nursing leaders used for EBPI. There was a view that new evidence was implemented as part of a QI or audit process; or, when a decision was made to implement something, it just 'happened': *'the same with the audits, so the monthly audits, we would look at our monthly audits, look at the outcomes. [E-M74-A/C]*

Few comments described deliberate use of implementation models, frameworks or other approaches. In one facility explicit reference was made to the use of a guideline storage system which also housed resource material: *'I've created an intranet site for the [xx] program and I've put some articles on there for clinical handover, ...and a whole bunch of things they can access...[A-F2-A/C]*

Respondents were not familiar with implementation models such as the i-PARIHS framework or other approaches, and the prevailing approach was to rely on audit and feedback as a quasi-implementation approach. Indeed, some respondents openly described the challenges of implementation:

But in the field they don't see the use of these checklists/instruments and say 'we work the way we always have done' and don't see any change or improvement with them [S-F93-A/C]

Responses around how nursing leaders themselves were supported to be role models were less aligned. Being aware of the importance of the role and realizing risks of just 'carrying on as we have always done,' nursing leaders underlined need for supportive infrastructure and continuing education opportunities for both themselves and frontline staff: *'from when I first started practice to now, you're just trying to survive and keep your head above water to now when you can look at a situation and make those decisions without (worrying) -or be confident in your own decision making..'[A-M8-A/C]*

Nursing leaders identified the need to do more around patient involvement, feedback on performance, use of explicit implementation models, and having access to networks that could help with EBPI.

Nursing leaders actively integrate EBPI using a range of organizational structures

Several strategies around active integration of EBPI into embedded systems and processes such as **policies and procedures; QI initiatives; audit and feedback; accreditation and other regulatory requirements** were described (see Table 5) .

[Table 5]

Organizational policies and procedures were central mechanisms through which evidence could be embedded: *I can't be everywhere to make sure that that (keeping policies and procedures up-to-date) happens so there has to be a process in place with that, and that goes back to some of the things that are in the policy documents* [E-M2-A/C]

Nursing leaders felt that being able to influence existing QI, safety or accreditation systems within their organizations to use evidence in their statements, policies or procedures, would lead to a more sustainable culture of EBPI in practice.

...so, on our policies and procedures, they have a review date so we review them on a regular basis, whether it's yearly, two yearly or three yearly, depending on what they are. ...[A-M11-A/C]

We audit across the organization, ...every month we've got a particular theme ...and it's aligned to the national safety and quality health care standards so we might, one month we might audit say pressure injuries and falls and we'll look at the compliancearound that..[A-F2-A/C]

Central to embedding a culture of EBPI was nursing leaders' ability to connect use of evidence to organizational QI, safety, and internal/external accreditation systems. Although schemes and approaches differed across countries, how nursing leaders used these systems and structures on the ground was similar. Multiple comments were received around use of audit and feedback to embed EBP: *Oh yeah, audit, feedback, action planning, so at a local level, we have monthly audits which are based on the standards within X. You feedback if there's any problems* [E-M1-A/C]

Having a range of educational, teaching, and evidence accessing skills were identified as important for nursing leaders to support and enable clinical teams at point-of-care to want to learn about and use evidence. In addition to interpersonal soft skills, respondents also mentioned the importance of having formal educational and professional development structures that helped shape EBPI into the organizational fabric at the frontline. *...I try and facilitate as much education as I possibly can and it's not always the easiest thing to get people out (of the ward) or get people engaged.* [A-M11-A/C]

Respondents gave a consistent narrative around the importance of integrating EBPI into existing systems and processes. This required teamwork and collaboration with clinicians and nursing leaders working together to check, challenge and update information they were using at clinical levels.

DISCUSSION

This paper has explored how nursing leaders promote EBPI at point-of-care in four high income countries. Through analysing interviews with nursing leaders, both in formal (senior/middle managerial) and enabling roles, we identified three main strategies around: actively promoting EBPI at point-of-care; actively working to influence EPBI processes; and actively integrating EBPI into everyday organisational and clinical practices.

Across country health systems, nursing leaders drew on a range of similar activities to inform their promotion of EBPI at point-of-care. These included formal QI, safety, and accreditation processes of their respective health systems. Nursing leaders, to varying degrees of success were able to describe how they used these systems to embed a strong culture of EBPI into the

organization. Nursing leaders also described role modelling and mentoring work in their roles to encourage frontline staff to embrace a more evidence-based culture. Their descriptions covered undertaking instrumental tasks effectively as well as establishing productive relationships and enabling nurses at point-of-care to become actively involved in improvement projects, enabled by their change management/QI skills and capability. These descriptions align with previous research looking at nursing leadership styles Cummings et al 2018b). The nursing leaders in our study also identified areas for strengthening evidence uptake and use, particularly around feedback on individual performance; more involvement of patients in generating evidence and better training and mentoring systems for both themselves and frontline staff.

Findings indicate that nursing leaders' behaviours were conscious and deliberate around the strategies used to promote, influence and integrate EBPI approaches. Their strategies were multifaceted and complex, relying on multiple networks and relationships to process information to promote optimal clinical decision making.

However, these promoting, influencing and integrating strategies themselves can be further refined into two dominant modes of thinking and behaving. This further refinement reflects what we sensed from the data: namely nursing leaders were dealing with multiple situations in dynamic ways that did not reduce into categories or lists of actions. Rather it seemed that nursing leaders held 'mental models' or archetypes of behaving and reacting to fast changing clinical contexts in their everyday work.

We therefore argue that nursing leaders move between different modes of EBPI leadership behaviour when they draw on these promoting, influencing and integrating strategies. The two leadership modes include: a *mediating mode* and an *adapting mode*. Together these mediating and adapting modes are dominant ways of thinking and behaving that inform overall strategies used by nursing leaders to implement EBP at point- of-care.

Mediating mode

Nursing leaders constantly moved between national and organizational strategies and day-to-day job demands. They were able to interpret strategic priorities into operational activities that made sense to frontline workers. They role modelled problem solving and improvement approaches. They made links between local improvement opportunities and wider organizational structures such as clinical governance, accreditation or safety systems. They had knowledge, autonomy and confidence to act within the system around areas of patient safety, and skills to network across systems and professional groups. We define this capacity to move between organisational strategies and day-to-day activities as a mediating mode. This construct aligns with Birkin et al.'s (2012) mediating activities, Aarons et al.'s (2014) proactive and perseverant domains, several O-Mile change attributes (Gifford et al. 2017) and confirms aspects of Weiner's model, in particular generating policies and practices that enhance implementation effort and active management of implementation climate (Weiner 2009).

Some nursing leaders' descriptions of quality and safety systems in their organizations reflected complex interdependencies in their roles and need for flexibility and autonomy. Characteristics of these systems reflected nursing leaders having more autonomy and authority over clinical processes and ability to lead local improvement efforts involving the whole clinical team. This sense of empowerment is an important factor, also raised by other research teams (Gunningberg et al. 2010; Wilkinson et al. 2011) as one significant element to successful EBPI.

This mediating mode is an essential part of nursing leaders' skillset. Research by Aarons et al.'s (2014) ILS and Shuman et al.'s (2018) EPB competencies have uncovered many essential mediating aspects. Gifford et al.'s (2017; 2018) work outlining EBP capabilities around three tenets of leadership namely; task-, relation-, and change-oriented strategies and capabilities, has also explored the central importance of mediating between levels and systems. Shuman et al.'s (2018) work on frontline nursing managers' behaviours from RN perspectives confirmed that RNs expected their nursing leaders to have oversight of EBPI, motivate them, and provide them with the right support to get evidence implemented. They also expected their nursing leaders to effectively communicate what they were doing for the rest of the system. This is supported by and consistent with Gifford et al.'s work (2017; 2018) which again supports our findings that nursing leaders have important mediating and networking roles both at local and organizational levels.

Adapting Mode

In the adapting mode, nursing leaders were seen to judge whether evidence being used at point-of-care was appropriate by actively enabling local problem solving; encouraging critiquing and reflection; facilitating team discussion; and learning and ensuring that local systems were fit for purpose e.g. able to deal with national accreditation and audit requirements; and having effective feedback systems.

Nursing leaders did not tend to check on provenance of evidence in ways described by teams such as Shuman et al. (2018). The nursing leaders in our study tended to hold a traditional notion of evidence – that derived from research – and rarely mentioned other forms of evidence, particularly from patients, carers or from local audits. They made judgement on the evidence by trusting the source, whether that was a respected colleague or clinical expert, or from a recognized source such as a national guideline or protocol. Nursing leaders did not explicitly refer to diffusing and synthesizing evidence, as identified in Birken at al.'s (2012) work.

Nursing leaders' ability to network across the organization, between different clinical teams, and with content experts were all strategies used to generate a sense of 'trust in the evidence'. This behaviour went beyond what other commentators have described as 'selling' the innovation (Birken et al. 2012). The behaviours drew on nursing leaders' clinical background and experience as much as their managerial prowess. All these strategies were used to promote and improve EBPI at point-of-care. We define this capacity to draw on various strategies to evaluate

current evidence use and trustworthiness of the evidence to be implemented as an adapting mode of nursing leaders.

The data also presented nursing leaders as knowledgeable, autonomous and clear about their networking approaches and ability to make good decisions about quality of the evidence. However, in some jurisdictions there was anxiety around the unquestioning following of policies and procedures by clinical staff without concomitant exercise of clinical judgement or explicit ability to validate evidence sources. This was seen to be 'dumbing down' of nursing leaders' contribution to effective clinical care (Harvey et al. 2019a), a view possibly supported by Birken et al.'s 2016 interpretation of why nursing leaders did not see themselves as 'selling' EPB implementation. They argued it was the difference between middle managers and champions. Our data demonstrate that nursing leaders both motivate and provide practical guidance and support but perhaps more importantly seek to adapt evidence, using their trust in the provenance of evidence as validation.

However, one weakness identified above may be that nursing leaders tend to put too much trust in policy and procedures rather than have effective ways of regularly checking quality of the evidence base. This has been described by Kislov et al. 2019 as 'evidence by proxy' where the composition, circulation and role of codified knowledge in the form of clinical guidelines, best practice standards and embedded in policies and procedures takes priority in institutionalization of EBP. Our research demonstrates that nursing leaders exercise an awareness of the need to engage local clinical experts to help in the 'validation' of such information but may be more pragmatic when it comes to getting on with the job and using their adapting and tailoring skills to implement evidence.

Nursing leaders were seen to shift between mediating and adapting modes. Rather than thinking of EBPI promotion as a sequential or series of discrete activities, nursing leaders described dynamic, iterative, reflexive processes that were context and team specific. This idea is confirmed by previous research in nursing (Van Bogaert, et al., 2015; Mestdagh, et al., 2019). The ability to combine a range of instrumental skills such as getting tasks performed, managing change, problem solving together with role modelling, mentoring, supporting and facilitative roles are necessary EBPI leadership attributes.

Understanding nursing leadership through a lens of mediating and adapting modes is an appreciation of the daily complexity that nursing leaders deal with, and their confidence when describing information and social networks through which they interacted, interpreted, and made sense of the world. They also demonstrated how EBPI principles and practices are beginning to be embedded in (at least) high performing organizations studied in this project. This begs the question as to what we would find in terms of leadership strategies if we went to organizations with less positive organizational climates to support EBPI. This observation reinforces Weiner's (2009) view that the organization's readiness for change is an important starting point.

Further research

The importance of generating and sustaining relationships was very important as was nursing leaders' ability to network – rather than taking a linear or sequential approach to EBPI, nursing leaders engaged dynamically using their relationship with staff as ways of influencing and integrating a broader range of practical strategies. Future research should begin to model multiple factors, using a complex adaptive theoretical lens (Kitson et al. 2018), at play in any setting that is going to implement an innovation. Thus, our conclusions lead us more to studying relationships, complexity and finally how individuals and teams reflect upon, learn from, and embed EPBI experience they have gone through. This speaks to further explorations into how learning cultures are embedded and how different types of learning (moving from single-loop to double and triple loop learning Berta et al. 2015) can shed light on how nursing leaders manage such dynamic situations. Our description of mediating and adapting modes is an attempt to reflect this complex, dynamic process.

This study has also confirmed the universal nature of elements of the nursing leader's role, such as networker, enabler, doer, fixer and we argue, critical thinker, reflector and promoter of more effective learning processes. Again, more work should be done to generate international studies exploring discrete elements to understand how to accelerate evidence use at point-of-care but also do so with new theoretical frameworks that reflect complexity, adaptivity, relationships and continuous learning.

Limitations

The research team used a purposive sample of organizations (those known to us and willing to be involved) and a purposive sample of nursing respondents selected by executive nurse leaders from each jurisdiction. This may be a limitation but from a qualitative design perspective a purposive sample of informants could be highly desirable. If we see the sample selection as problematic, then we could have introduced bias into the sample: selecting early adopter and successful organizations that had already developed an approach to EPBI and a cohort of respondents who also would be more informed and expert in their understanding of their EBP role. However, we would suggest this is not the case.

One significant limitation is that we have not collected data from RNs or clinical staff who deliver the care, and this is something that needs to be addressed in future research.

Further, the four countries that were included in this study (Australia, Canada, England and Sweden) are high income, Western countries, which is not generalisable. Future research should examine how nursing leaders promote evidence-based practice implementation in diverse countries.

CONCLUSION

Nursing leaders, across four countries and six health systems, used a variety of strategies to actively promote EBPI, influence EBPI processes and integrate EBPI into organisational structures. Despite differences in health service configuration and governance arrangements, nursing leaders demonstrated consistent activity around building positive relationships with their teams, use of accreditation, QI and safety systems to embed EBP and in their coaching and mentoring approaches. They rarely used implementation frameworks, depending instead upon existing QI and safety systems to implement EPB. Nursing leaders' strategies for promoting EBPI reflected their ability to enact a mediating mode which entailed navigating between organizational and day-to-day priorities, and their adapting mode which entailed working with clinical staff to help tailor evidence for the clinical context.

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Table 1 Characteristics of the study sites by country.

	Australia	Canada	England	Sweden
Organisations involved in the study	1 organisation providing acute care (2 hospitals; 498 beds) and primary and community care	2 organisations: - Province-wide provider of acute care (total of 106 hospitals with 8471 beds) and community care - A publicly funded home care service provider	1 integrated organisation providing acute care (1 hospital; 839 beds) and primary and community care	2 organisations: - Region-wide provider of acute care (4 hospitals; 720 beds) and primary care - Municipality-wide provider of community care

Table 2 Research Sample by Level, Role and Country

Leadership Level & Role	Australia	Canada	England	Sweden	Total
Senior/middle level managers (formal)	1	6	2	2	11
Senior/middle level facilitators (enabling)	2	1	3	4	10
Combined manager-facilitator (mix of formal and enabling)	2	0	3	0	5
Frontline manager (formal)	3	2	3	7	15
Frontline facilitators (enabling)	6	5	1	2	14
Grand Total	***14***	***14***	***12***	***15***	***55***

Table 3. Strategies that nursing leaders use to actively promote EBPI to frontline staff at point-of-care

Strategy	Synthesised Participant Description	Quote
Awareness of the need to establish	EBP is not an optional extra – role of leaders is to set the	*We provide a service that supports them (clinical nurses) in their decision*

an evidence-based culture	culture and enable staff to learn about and use evidence	*making. And we know they use a number of the … knowledge and evidence tools … and our staff go out and teach them how to use those* (CW-F- A/C)
Interaction with team/colleagues	Actively engaging with staff to understand their need for evidence and how to use it	*… we talk a lot as colleagues 'this is not the way to do this: this is what you should be doing'' almost like there's almost a lot of evaluation by talking through with peers, not formally in the sense of research …* [A-F3-A/C]
Role modelling	Leading by example	*So, it's important as the manager/leader of a ward that your practice is underpinned by evidence and that the shift have a really good knowledge and understanding of what's expected of them and they've had a really good background …. myself as a leader, I need to make sure that my team had the opportunity* (E-M-A/C)
Generating ways of checking evidence	Trusting professional competence/judgement	*We also pick people with the most current information and knowledge to be part of (the) working groups. This will ensure that if something is heading in the wrong direction, they will raise their voices and protest loudl*y (S-F5-C)
Effective communication about EBPI	Being able to 'sell' EBP implementation	*You have to be like a car salesman, you know, a lot of promo, a lot of sort of going around and talking to people, talking the whole thing up. You have to say the same thing again and again and again, like you're one big advertising sort of, you know, this is what we want to do … [A-F1-A/C]*

Table 4: Nursing leaders' influencing strategies to improve EPBI

Strategy	Synthesised Participant Description	Quote
Involving patients/clients in the process	Being aware of the need to see patients and relatives as valid sources of evidence	*And then, on a side-note, we also link with patients and families* (CW-F-A/C)
Feedback on individual performance	Appreciating the need for constructive, regular and timely feedback to staff on their performance	*So if I find that there's documentation that's an issue or anybody has documented interventions that are not within best practice..i can follow up with them … and then it's a learning opportunity for the staff member (CE-F6-C)*
Support and training for roles around effective implementation	Understanding how to implement evidence into practice	*We are bad at using ∗PARIHS or other models, but I can see that we are using the ingredients: you carefully choose the project leader, make sure higher management knows and support the project … (S-F3-A)*
Support for leaders and establishing networks for promoting evidence-based practice	Feelings of insufficient capacity and lack of support in the leadership role	*I see a need of support for first-line managers …. We are talking about this in our network, how can we get the knowledge and support we need … We need to talk about leadership from a perspective of evidence-based practice … (S-M3-A)*

∗PARIHS is an Implementation Framework (see Harvey & Kitson 2016)

Table 5. Nursing leaders' integration strategies to support EBPI.

Strategy	Synthesised Participant Description	Quote
Using organizational policies and procedures	The organization initiates processes which promote use of evidence in policies and procedures	*All our policies and procedures are evidence-based, so we … probably 8 years ago, we revised all our clinical policies to ensure they had a good underpinning from an evidence based perspective, and they're renewed and revised on an annual basi*s (CE-M7-C)
Using national accreditation/regulatory requirements/national quality registers to embed EPBI	The organization initiates processes which support use of evidence-based accreditation standards	*We have our health care Quality Registers. We can follow the results from those registries and we should be able to see that we follow or have the ability to follow* (S-M8-A)
Embedding evidence into clear quality improvement (QI) systems	The organization demonstrates its support for EBP by enabling evidence to be interpreted into QI systems and processes	*Within the clinical governance framework we've established a clinical audit process so we audit things like medication management and aseptic techniques and wounds and falls … it's been really good to actually show where we need to look at and where we need to improve upon* (A-M9-A/C)
Enabling and facilitating EBPI in role	Having a range of educational, teaching and information accessing skills to promote EBP	*The reason is to actually be able to be right there providing the coaching, the teaching, you know, accessing the resources virtually, reminding staff how they can do that …* (CE-M7-C)
Work methods that enable EBPI	Systems and processes work in an integrated way to combine evidence, education and accreditation frameworks	*We've got an education, a research and a governance framework for nursing and midwifery education and from within that … we look at scoping up every piece of work we do and then evaluating it* (A-M13-A/C)