ACCEPTED VERSION

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Mobilising evidence to improve nursing practice: A qualitative study of leadership roles and processes in four countries
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Mobilising evidence to improve nursing practice: a qualitative study of leadership roles and processes in four countries

Abstract

Background: The approach and style of leaders is known to be an important factor influencing the translation of research evidence into nursing practice. However, questions remain as to what types of roles are most effective and the specific mechanisms through which influence is achieved.

Objectives: The aim of the study was to enhance understanding of the mechanisms by which key nursing roles lead the implementation of evidence-based practice across different care settings and countries and the contextual factors that influence them.

Design: The study employed a qualitative descriptive approach.

Settings: Data collection was undertaken in acute care and primary/community health care settings in Australia, Canada, England and Sweden.

Participants: 55 individuals representing different levels of the nursing leadership structure (executive to frontline), roles (managers and facilitators), sectors (acute and primary/community) and countries.

Methods: Individual semi-structured interviews were conducted with all participants exploring their roles and experiences of leading evidence-based practice. Data were analysed through a process of qualitative content analysis.

Results: Different countries had varying structural arrangements and roles to support evidence-based nursing practice. At a cross-country level, three main themes were identified relating to different mechanisms for enacting evidence-based practice, contextual influences at a policy, organisational and service delivery level and challenges of leading evidence-based practice.

Conclusions: National policies around quality and performance shape priorities for evidence-based practice, which in turn influences the roles and mechanisms for implementation that are given prominence. There is a need to maintain a balance between the mechanisms of managing and monitoring performance and facilitating critical questioning and reflection in and on practice. This requires a careful blending of managerial and facilitative leadership. The findings have implications for theory, practice, education and research relating to implementation and evidence-based practice.

Keywords: Evidence-based practice; Facilitation; Knowledge translation; Implementation; Leadership; Managers; Facilitators

What is already known about this topic?

- Nursing leadership is an important factor influencing the implementation of evidence-based practice (EBP).
- Previous research has demonstrated that both formal and informal leaders – those with and without managerial responsibility- have a role to play in leading and enabling the delivery of EBP.
- Less is known about the specific types or combination of roles that are most effective or the mechanisms though which influence is achieved.

What this paper adds

- The national policy and regulatory environment influences the interpretation and operationalisation of EBP.
- Leadership for EBP is not role-specific; it requires a dynamic network which encompasses the range of skills required to optimise EBP.
- Insight into the mechanisms needed to enact EBP, ranging from managing and monitoring to facilitative, relationship-focused approaches, and the importance of achieving the right balance.

Mobilising evidence to improve nursing practice: a qualitative study of leadership roles and processes in four countries

1. Introduction

Despite significant investments in health research within high-income countries, international evidence demonstrates that the implementation of research findings into improved practice, patient care and population health is often slow, incomplete and inconsistent (1-3). Reasons for this are multi-faceted and there is growing recognition that the traditional 'pipeline' model from knowledge production to implementation over-simplifies the complexities involved (4, 5). As such, there is increased attention focused on *how* best to achieve implementation of research evidence in the most effective, efficient and timely ways possible. This links to broader debates about the concept of evidence-based practice (EBP) and how it has been interpreted since its initial iteration in the mid-1990s (6,). Critics have argued a need for a paradigm shift to prevent over-simplistic and overtly rational approaches to generating and applying evidence to inform clinical practice and patient care (7). In the context of this paper, we are particularly focusing on the implementation of EBP, which we define as the structures, roles and processes used to support the translation of evidence derived from multiple sources (research; clinical and patient experience; national, regional and local information) into nursing practice.

The challenges of implementing evidence into practice are of particular significance in nursing, given that it represents the largest professional workforce in healthcare. However, nursing and healthcare systems more generally are experiencing a time of significant change due to a combination of economic pressures, demographic shifts, technological advancement, problems with recruitment and retention, and changing public and political expectations. This is apparent across national and international health systems and presents an additional challenge in terms of delivering high quality, evidence-based care (8-11). Furthermore, considerable variations exist within and across different countries in terms of how nursing is led, organised and managed at a strategic, organisational and operational level (12).

Research into implementation highlights different factors that can influence whether and how research evidence is used in practice. These include factors relating to the evidence itself (for example, the extent to which research results are accepted or contested), the intended users of the evidence (for example, how motivated and capable nurses are to take on a practice change) and the context in which implementation is taking place (13, 14). The approach and style of leaders, both individually and collectively, can influence, and potentially modify these factors. Leadership is known to be an important determinant of culture, which itself is a key characteristic of the context that shapes implementation and translation (15, 16).

Several studies have examined the relationship between leadership and evidence implementation (17). Aarons and colleagues developed a measure of unit level leadership for implementation that identifies four types of required leadership activity, termed proactive, knowledgeable, supportive and perseverant leadership (18). The Ottawa Model of Implementation Leadership (O-MILe) presents a theoretical model for developing implementation leadership, focused around three categories of leadership behaviours, defined as relations, change and task oriented (19). However, questions remain as to who is best placed to provide the type of leadership required to enhance implementation of evidence-based practice (EBP). For example, should leadership for EBP be provided by individuals with formal management authority or by people in roles with a specific remit for supporting implementation, education or practice development? Or is it a shared, collective responsibility within organisations? And how does the practice environment directly or indirectly impact what the assumed leaders do?

Some literature suggests that middle managers – those who supervise front-line employees, but are themselves supervised by senior managers – have an important, but as yet overlooked, role in implementing EBP (20). However, empirical studies testing interventions to build management capacity for implementing EBP have produced mixed results (21, 22), linked to a view that the nurse manager's role in EBP is under-articulated, largely passive and limited by competing demands (23) or that nurse managers lack the knowledge and skills needed to effectively support EBP (24, 25).

Other studies have focused on individuals in designated roles for implementation-related activity (26). A variety of different terms are used to describe these roles, which typically do not encompass formal management responsibility and can be broadly grouped together as 'facilitation'. Cranley and colleagues recently undertook a scoping review of facilitation roles and characteristics and identified nine types of roles, including opinion leaders, coaches, champions, knowledge brokers and clinical/practice facilitators. The different roles were seen to vary in terms of level of formality, position (internal or external to the organisation), main activities undertaken and key attributes and skills required (27). Berta and colleagues (28) suggest that the mechanism through which facilitation influences implementation is one of building learning capacity, through stimulating higher-order (double and triple-loop) adaptive learning about how to apply research evidence to improve care processes. This is achieved through establishing internal and external meta-routines (selective processes) that empower front-line staff to change practice by identifying problems and seeking and applying appropriate solutions; by contrast, single-loop learning is more standardised and focuses on technical approaches to fix problems (29).

Evidence on the effectiveness of facilitation as an implementation strategy is mixed. Studies in primary care and community settings that were not specifically focused on nursing practice, suggest evidence of impact, for example, in terms of improving the uptake of

clinical guidelines in general practice (30) and significantly reducing neonatal mortality (31). By contrast, a cross-European study employing facilitation as an intervention to improve uptake of continence guideline recommendations in nursing home care showed no significant differences between intervention and control wards (32). This same study highlighted the importance of the relationship between facilitators and managers, the latter acting as key gatekeepers in terms of influencing whether and how effectively the facilitator could perform their intended role (33).

In summary, existing evidence provides a compelling case for the contribution of human agency – in the form of various leadership roles and processes – to enhance the implementation of evidence into practice. Managers and facilitators clearly have a potentially important contribution in terms of providing leadership for EBP. However, evidence of effectiveness is mixed and inconclusive. Questions remain as to what types of roles or combinations of roles are the most effective and through which mechanisms influence on practice is achieved. Context is recognized to be an important mediating factor in implementing EBP (34), a fact that needs to be taken account of when considering roles, strategies and processes to enhance EBP. To date, studies of context have focused on the micro and meso levels of care whereas contextual factors at a macro level remain largely under-researched (35). Exploring these issues is key to developing capacity for delivering and supporting EBP. Moreover, knowledge about how to effectively leverage new and existing roles to implement EBP is transferable to support innovation and change more generally, an important requirement in the fast-changing environment of modern day healthcare. These questions form the backdrop of the study reported here.

1.1. Objectives

The primary objective of the study was to enhance understanding of the mechanisms by which key nursing roles lead the implementation of EBP across different care settings and countries and the contextual factors that influence them. In order to achieve this objective, the following research questions guided this study:

i. What roles do executive and clinical/frontline level leaders (managers and facilitators) play in supporting the implementation of EBP?
ii. How are different roles enacted to promote and support implementation?
iii. What contextual factors influence implementation roles and processes?

[Note: throughout the paper, we use the term 'leadership' to encompass managerial and facilitative roles]

2. Methods

The study used a qualitative descriptive approach (36) based on individual interviews with identified nursing leaders, in managerial and facilitative roles, across healthcare settings in four countries. We opted for this as the most appropriate methodology as the aim was to

develop a rich description of the phenomenon under study, namely leadership of EBP across four different countries.

2.1. Setting

Data collection was undertaken in acute care and primary/community health care settings in Australia, Canada, England and Sweden. These countries are comparable in broad terms of level of development (high-income countries), tax-based universal health care systems and national structures or systems for monitoring and/or regulating performance. Within each country, one or two organisations were selected using a combination of convenience and purposive sampling. From a convenience perspective, organisations were selected that were geographically close to the research team members responsible for data collection. Subsequently, the main criterion then used to select organisations was a self-declared commitment of the organisation's nursing leadership to EBP, including granting access to the research team to interview a range of staff involved in implementation (Table 1). Research team members in each country approached identified organisations directly with an invitation to participate in the research.

2.2. Sample selection

The total study sample comprised 55 individuals who were purposefully recruited to represent different levels of the nursing structure (from executive to frontline), roles (managers and facilitators), sectors (acute and primary/community care) and countries. Most, but not all of the interviewees had a nursing qualification. Inclusion was based on the following criteria: those in managerial roles had a clearly defined responsibility for managing nurses and nursing care; facilitators were involved in providing and supporting education and practice development for nursing staff. Initial contact was made with nursing executive leaders in each of the participating sites and these individuals were asked to make suggestions of other key people to contact within their organisation. These individuals were subsequently sent an email invitation with supporting information about the study. The majority of individuals approached agreed to participate; one person only (English sample) declined.

The breakdown of the sample by level, role and sector is detailed in Table 2. Participants were evenly spread across acute and primary/community care settings, in order to cover various healthcare contexts.

	Australia	Canada	England	Sweden
Organisations involved in the study	1 organisation providing acute care (2 hospitals) and primary and community care	2 organisations: - Western Canada; Province-wide provider of acute care	1 integrated organisation providing acute care (1 hospital) and primary	2 organisations: - County-wide provider of acute care (4 hospitals) and primary care

		(total of 106* hospitals) and community care - Eastern Canada; A publicly funded home care service provider * 2 of the 106 hospitals were included in the study sample	and community care	- Municipality-wide provider of community care
National standards and/or accreditation of evidence-based practice	Australian Commission on Safety and Quality in Health Care	Accreditation Canada	The Care Quality Commission and National Institute for Care Excellence (NICE)	National Board of Health and Welfare

Table 1. Characteristics of the study sites by country

2.3. Procedure and data collection

Data collection took place between September 2015 and April 2016. After informed consent from the participants, semi-structured interviews were conducted. Interviews were carried out by a member of the research team (or a research assistant working with the research team member) in their own country (Australia: GH and JK; Canada: WG and a research assistant working with GC; England: RK and PW; Sweden: LP). All interviewers were working in academic positions (for example, Professors or senior researchers), were experienced in qualitative interviewing methods and employed a standard interview guide specific to the role of the participant, i.e. executive/senior manager, clinical/front-line manager or facilitator. Three separate study specific interview guides were developed for data collection, informed by a literature review and input from local stakeholder groups. The questions were related to these overall areas: Clarification of role and position in the organisation; Knowledge and decision-making; Experiences of EBP; Own role in EBP. Back translation was undertaken to verify congruence between the English and Swedish versions of the interview guide (37).

Interviews were conducted on an individual basis, and mostly face-to-face at the workplace, although some took place by telephone (at the request of the interviewee). The interviews were conducted in English or Swedish and were typically 30-60 minutes duration. All

interviews were digitally audio-recorded and transcribed verbatim; additional field notes were not routinely collected. Interviewees were offered the opportunity to have their transcription returned for verification purposes, although the majority did not accept this offer.

	Australia	Canada	England	Sweden	Total
Executive/senior manager	1	6	2	2	11
Clinical/frontline manager	3	2	3	7	15
Executive/senior facilitator	2	1	3	4	10
Clinical/frontline facilitator	8	5	1	2	16
Hybrid (e.g. manager-facilitator)	-	-	3	-	3
Total	14	14	12	15	55

Table 2. The research sample by country, level and role

2.4. Data analysis

Interview data were analysed by qualitative content analysis (38) using QSR NVivo 10/11© software. This was initially undertaken at an individual country level by relevant members of the research team (3 each in Australia and Sweden; 2 in Canada and England). The analysis was guided by the research questions and participant responses to each question were grouped to form the unit of analysis. An iterative process was used to descriptively summarise the data involving: deductive coding of relevant passages using the words of participants; organising and grouping recurring ideas into response categories; inductively re-coding and condensing response categories to identify patterns, regularities and descriptive themes (38). Throughout the analysis, preliminary codes and themes were discussed within the research team and reviewed for internal homogeneity (i.e. themes were consistent and fit together) and external heterogeneity (i.e. clear distinctions between each theme) and revised based on group discussion and further analysis. Cross-checking of transcripts occurred to enhance the trustworthiness of analysis, for example, by members of one country team analysing interview data from another country.

The majority of the research team were academics working in the field of knowledge translation and implementation science, with both theoretical and practical knowledge of the research topic. Regular project team meetings were organised to share insights and reflections on the data, in an open and critically constructive way. Analytical discussions took place via monthly Skype meetings. Additionally, three face-to-face meetings, each held over two days, took place at key points during study design, data analysis and interpretation of

findings. Categories and themes were compared, initially at a country level and then at a cross-country level in order to find similarities and differences across different groups (i.e. managers and facilitators) and different settings (i.e. acute and primary/community care). In two countries (Australia and Sweden), feedback to local stakeholder groups was undertaken to sense-check and verify the emerging findings.

3. Findings

At an organisational level, the different sites where data collection took place had varying structural arrangements and roles to support EBP, as evidenced by feedback from the senior managers interviewed and publicly available policy documents. These are summarised in Table 3.

Comparing findings at a cross-country level, three main themes emerged:
- Different mechanisms for EBP: Managing and monitoring versus connecting and enabling;
- Roles shaped by context: policy, organisational and service delivery level;
- Challenges of leading EBP.

In the presentation of the findings, direct quotes from interviewees are denoted according to country, role and setting: Country codes: A-Australia; CE-Canada East; CW-Canada West; E-England; S-Sweden; Roles: E-Executive/senior level manager; EF-Executive/senior level facilitator; M-Frontline manager; F-Frontline facilitator (numbers are used to differentiate interviewees in the same role); Setting: A-Acute; C-Community; A/C-Acute and Community

3.1. Different mechanisms for EBP: Managing and monitoring versus connecting and enabling

The data demonstrate two contrasting mechanisms by which nursing leaders sought to embed EBP, one more formalised and concerned with meeting expected performance standards, the other more enabling and relationship focused. Managers tended to emphasise the performance and monitoring aspects of their role, whilst facilitators highlighted a relationship-based approach, although overlaps between the two were apparent. Managers typically described their role in terms of providing direction, acting as role models, monitoring compliance against standards or guidelines, and maintaining overall oversight of evidence-based practice. At an executive level, this encompassed the provision of strategic leadership and high-level visionary direction, establishing an infrastructure and processes to enable and support EBP and collaborating with other relevant organisations and institutions at a local, regional and national level.

> *I think from a nursing and midwifery point of view …. the concept of research and evidence based practice, ….is vitally important, one for the patients but also for the promotion and the organisation or stature within the broader health community. For me, I would think it was quite strategic ….. I knew I wanted an increased research profile …. So I think that in trying to raise the profile of research what you then do is you get people thinking about evidence based practice.* [A-E-A/C]

	Australia	Canada	England	Sweden
Main structure/s leading and supporting evidence-based nursing practice	Centralized education function, underpinned by a commitment to Practice Development Participation in the Best Practice Spotlight Organisation (BPSO) Program (a Canadian initiative led by the Registered Nurses' Association of Ontario and involving partnership with international sites)	<u>Acute care organisation</u> Provincial level Knowledge Management Department, responsible for making evidence accessible and providing education to staff <u>Community care organisation</u> Virtual Resource Centre for online resources & advice Participation in BPSO Program	Centralized Quality Improvement Department coordinating multiple Quality Improvement Collaboratives Locally developed Nursing Assessment and Accreditation system, aiming to create sustainability of QI initiatives	<u>Acute care organisation</u> Central service units for EBP, providing QI support to department and unit managers <u>Community care organisation</u> Central resources for EBP
Roles	2 types of ward/unit (frontline) roles: - Nurse unit manager, operational focus; 'gatekeeper' role - Clinical practice consultant, clinical/educational focus Some evidence of role hybridity Nurse educators working from a central department with a (clinical) specialist focus	<u>Acute care organisation</u> Service level roles; Nurse Practitioners, Clinical Nurse Specialists, Clinical Nurse Educators, Clinical Implementation Managers, working with front-line staff to facilitate EBP <u>Community care organisation</u> Direct and indirect roles to support implementation; Advanced Practice Consultants, Clinical Improvement Coaches and Clinical Practice Resources Nurses	Acute and community focused roles with responsibility for coordinating the nursing accreditation system Front-line nurse managers with a strong patient safety and quality focus Hybrid roles – clinical specialist with some operational management responsibility – acting as a clinical expert for front-line staff	<u>Acute care organisation</u> Managers responsible for providing data to national quality registers Local facilitators working with front-line staff to implement EBP <u>Community care organisation</u> Relatively few facilitator roles to support local staff

Table 3: Structures and roles to support EBP at an organisational level, by country

At a clinical/unit level, the manager's role had a more operational focus and involved collecting and collating evidence to create policies, procedures and protocols, disseminating

information to staff, undertaking audit and feedback to make sure that standards were followed and maintaining and supporting the professional development of staff. A manager working in the community described their role in governing quality and standards:

> *We would go out with certain members of staff, we would go visiting patients, we do our documentation audit, we can check our home care assessment tools, our risk assessment tools …. And so there's a really robust structure in place regarding us monitoring who's working within the policies and procedures.* [E-M5-C]

The nurse manager role was seen as a pivotal 'gatekeeper' in EBP that could act as either an enabler or an obstructer, as illustrated by the reflections of an executive nursing leader:

> *I think a lot of it has to do with the …. person who runs the ward, unit or service. To me, I think they're actually the most important people in the organisation, so to me they're the gatekeepers of the clinical care, the culture and how people conduct themselves …. Often I think the block's with the [nurse unit manager], not necessarily with the staff underneath* [A-EF1-A/C]

In contrast to the more direct strategic and operational influence of managers, facilitators tended to describe their role as supporting implementation through providing education and coaching, increasing staff awareness of evidence and EBP, enabling skills and capacity development amongst the nursing staff, addressing barriers to implementation and acting as a coordinator. This relied on 'softer' mechanisms, such as working alongside staff, having conversations and building communication networks.

> *….. Lots of conversation. I think that's the basis of [my] role …. And so, a lot of it is knowledge translation in my mind … having a discussion about whether that's best practice or not.* [CW-F2-C]

> *It is about getting staff into this way of thinking. It should not go too fast. You need to be out there. I work a lot from here, in my office. What feels meaningful and valuable is to get out in practice and be there. And really translate evidence directly into everyday practice, so it becomes natural, and they understand what you are talking about.* [S-F2-C]

The need for complementarity between roles was noted, particularly in the Canadian sites, which had a long history of creating structures and systems to support EBP. Here, managers recognised the importance of their role in terms of setting the tone, identifying priorities and advocating for resources, yet at the same time trusting and supporting others in terms of how to achieve the desired outcomes:

I think all of us have our own, our roles … they should be complementary at the very least. …Dedicated facilitators, I just step aside and let them carry on 'cause that's what we hired them to do. And I appreciate the support. [CW-E1-C]

In a few instances, individuals exhibited roles that could be described as hybrid as they combined elements of both managerial and facilitative responsibility. This was particularly the case in the English sample where some nurse consultants also had formal management responsibility for more junior staff, which is not typically the case for nurse consultant roles. There were also examples where participants described enacting their role in a way that melded aspects of facilitative and managerial leadership, as illustrated in this quote from a community-based nurse consultant in Australia:

… the [middle] level role is that perfect balance between the management side and still really being on a practical level and being able to be engaged with my staff and encouraging them to do it as well. [A-F2-C]

3.2. Roles shaped by context: policy, organisational and service delivery levels

Contextual influences on roles and processes supporting EBP were apparent at a policy, organisational and service level. Depending on the country, policy influences functioned mostly at a country (Australia and England) or a regional/provincial level (Sweden and Canada). In Australia and England, where there was a strong regulatory environment, an emphasis on national standards was apparent, accompanied by mandatory monitoring and accreditation systems. The influence of such formal regulatory arrangements on the interpretation and implementation of EBP was evident in the accounts of interviewees:

…. I think there is a strong adherence to procedures and policies and following the national standards …. that sort of evidence is embedded into practice but the nurse or the midwife may not necessarily recognize that that's what they're doing … [A-EF2-A/C]

By contrast, in the less regulated systems in Sweden and Canada, external performance management appeared to be less of a concern or have a direct influence on EBP. For example, in Sweden, respondents talked about providing data to national quality registers but this was not the dominant narrative in their accounts of leading or supporting EBP in nursing.

…we do quality assessments and audits according to the quality criteria the Board has set up. We also work on behalf of the MAS [medically responsible nurse] to follow up, for example, deviations and investigate more serious deviations. Through such work we can get feedback through data in the quality registers to be able to ensure that we are actually doing what we have decided to do. [S-F2-C]

At an organisational level, the strategic orientation of executive leaders appeared particularly important. In several of the organisations studied, there was an explicit philosophy and culture of continuous quality improvement, which clearly influenced the approach taken to implementing EBP. This was especially noticeable in the English site, which had a central Quality Improvement Department, responsible for coordinating initiatives such as quality improvement collaboratives, based on the Institute for Healthcare Improvement model (39). In terms of connecting with EBP, the approach used within nursing was to synthesise data generated by the improvement collaboratives into a set of nursing standards that were routinely monitored through an organisation-wide nursing accreditation system. In this way, local improvement data formed a key component of the evidence base that underpinned nursing practice and ongoing accreditation was seen to fulfil the purpose of sustaining improvement. Two mid-level nursing roles existed within acute and community services to lead and coordinate the accreditation process.

> *And then once we've got all the tests of change that do make a difference … then we formulate that into a change package with all the bundles in it and we publicize that [organisation] wide so that every ward should be doing that. And that's where I come in with the sustainability arm … because it's end up in the* [nursing accreditation] *document. So I will go onto the ward and I will ask staff, 'So, how do you detect a deteriorating patient? What are the seven elements of the bundle of care that we use in the acutely unwell change package?'* [E-F1-A]

The two Canadian sites had a similar emphasis on quality improvement. However, there was not the same formalization of locally generated improvement data into an overarching accreditation or monitoring system. Both Canadian sites had a long history of implementing EBP. As a result, a substantial infrastructure for supporting EBP was evident at the provincial level:

> *I think you have to have leadership at the top, and buy-in right at the top, and then you have to have an infrastructure …. to support staff access to the information, to, you know, have access to staff who may have the knowledge if we don't have it in writing somewhere, to, you know, the documentation tools, the education, the orientation, all those things. You have to have champions. You've got to have people that are lined up with this that are carrying it on. You've got to have lots of cheerleaders … And then you have to have a system to measure it.* [CE-E-C]

In Sweden, there was a unique feature that was not driven or organised around an external accreditation system, but involved combining local quality improvement work and benchmarking based on the national quality registers:

> *…we have a business plan in which we have set up our own indicators to be able to follow our local results. From those indicators we set up targets that are*

different to those of the normal quality registers. They tell us how to measure, when, where and by whom. This gives us data from several sources. [S-F4-C]

Table 4 summarises the key findings in relation to policy/organisational influences on EBP.

	Australia	**Canada**	**England**	**Sweden**
Policy context	National healthcare accreditation scheme, based around 10 National Safety and Quality Health standards, developed by the Australian Commission on Safety and Quality in Healthcare	Primary responsibility for health system governance decentralized to provinces and territories Accreditation Canada – voluntary participation, but majority of organisations opt in	National performance management framework and systems (e.g. NICE standards and Care Quality Commission) Public healthcare system highly regulated	National practice guidelines and quality registers (> 100). Clinical settings report data to registers; these provide online feedback to local authorities and the public. Voluntary participation, not an accreditation system
Organisational context	Strong commitment to EBP at a strategic level Influence of external regulatory framework on policy and procedures guidance (PPG) and related auditing Complementary frontline roles, encompassing managerial and facilitative leadership Some evidence of hybrid manager/facilitator roles Difficult balance between embedding formalised PPG and encouraging and supporting critical thinking amongst clinical staff	Long history of supporting EBP Well-developed provincial and organisational infrastructure, including access to evidence-based resources and specialist roles to facilitate implementation Strong leadership support and strategic oversight from senior and middle-level managers Delegated responsibility and authority for implementation to facilitators Use of quality improvement (QI) methods and processes to guide implementation	Strong organisational emphasis on quality improvement; well-developed supporting infrastructure and culture QI the main vehicle for implementing EBP Improvement data feeding into a locally developed Nursing Assessment and Accreditation System to embed best practice Central QI Department, but few roles with a designated responsibility for facilitating implementation All leaders/managers involved in QI Hybrid clinical specialist/manager roles	Commitment to EBP at a national level with monitoring, reporting and benchmarking based on national quality registers, with a strong focus on medical data. Local quality improvement work based on quality improvement (QI) methods. Nurse managers have responsibility to support EBP, but limited capacity. Facilitator roles both at central and local level with responsibility to support QI and EBP.

Table 4: Summary of key findings by country

At a service level, differences were noted between acute and community/primary care services. This particularly related to contextual limitations experienced when delivering care in a person's home rather than in a clinical facility, both in terms of delivering EBP and undertaking audits. One example given related to difficulties of undertaking evidence-based wound care:

> *… we're dealing with patients' own environments, which is challenging. For example, doing a simple dressing change, there might be a cat, there might be a dog, there might be a parrot. I'm trying to do a sterile procedure …. and we've got to try and be evidence-based practitioners, but also we need to be respectful of our patients and their wishes and how they live.* [E-M4-C]

The community setting also presented challenges in terms of monitoring and evaluating the implementation of EBP as practitioners were typically working alone:

> *… well I think that barriers [are] oversight and being able to monitor in the community - we don't have an electronic health record for nursing yet, and that's a draw back because there's so much that's happening that we're not able to capture yet. We would do chart audits and that kind of thing but it's paper based and because the charts go into the home - you know we're not always getting those charts back in fairly large numbers* [CE-M4-A]

Strategies to address the potential isolation of lone practitioners included managers undertaking 'walkabouts' and accompanying staff on visits to patients, providing clinical staff with electronic tablets with standardized protocols and software for data capture and feedback, and holding regular safety huddles.

3.3. Challenges of leading EBP

This third theme encompasses the challenges interviewees described in leading EBP, relating to the preparation they had received for this role and the perceived barriers they encountered. Whilst interviewees could clearly articulate their role in EBP, very few had received any educational preparation specifically targeted to implementing EBP. Some had undertaken modules in EBP as part of post-graduate study or a leadership development program, but for many the development of knowledge and skills in EBP had been an experiential process.

> *I suppose I've learnt as I've gone along. I mean I've done some further education but that's not learning and research, ….. No-one's shown me how to do it.* [A-M1-A]

Also, in the Swedish interviews a need for more knowledge was expressed:

> *....the main challenge is knowledge and how to adopt that which actually works. I believe there is knowledge available that science has found/produced that could work well when tried in practice and be followed up. However, it feels like care and welfare should be able to find much evidence that could be introduced/adopted but time, knowledge and education is needed to be able to adopt new working practices*. [S-M7-A]

Similarly, interviewees reported minimal use of implementation theories and frameworks, even in Canada where the Canadian Institutes for Health Research (CIHR) actively promoted the Knowledge-To-Action framework (40) as a planned change approach to implementing EBP. Where reference was made to frameworks, these tended to be more generic practice development, change management or quality improvement methodologies.

> *I guess the main thing is [you] need a method for doing it. … You need to commit to a method, so we've committed to the model for improvement and testing change via PDSA. You need to commit to a method and try and teach that method as deeply and as widely as you possibly can within your organisation otherwise people, in my experience, can flounder.* [E-F4-A]

Connecting EBP to audit and quality improvement processes such as PDSA was one of the main enabling factors identified, alongside a supportive infrastructure (including evidence resources, technology and facilitator roles) and communication mechanisms such as safety huddles.

Barriers to EBP appeared less of a concern in the Canadian sites, which had the longest history and arguably the most extensive infrastructure (with human and non-human elements) to support EBP. In other countries, the key barriers identified from the perspective of middle level leaders related to time and workload pressures. A particular issue highlighted in the Swedish data was the dominant role of the medical profession in leading EBP, which resulted in the marginalization of nursing.

> *I think if staff were given more time people would gain more knowledge and gain more evidence and be more innovative with that evidence, in putting it into practice …. At the moment everyone's just too busy and you try and talk to people about putting stuff in place and they're like 'we're just too busy. Please don't give us anything else to do'* [A-F2-C]

> *It is very difficult to break through all this physician-centredness… but I believe that we are getting better and better at that too, but we have a long way to go, we need a paradigm shift to do that; and I almost feel that we are managing to move towards it, but it will probably take another 10-15 years.* [S-F4-C]

In countries such as Australia where there was a strong emphasis on following policies and procedures guidance, concerns were raised that this could lead to a lack of critical thinking and reflection amongst front-line staff. This was most apparent in the acute care setting, compared to the community where the existence and influence of policies and procedures was less prominent.

> *I think they know that there's an expectation that they use evidence based practice but I think a lot of the time if you practically look at people it tends to be based on rote learning or based on procedures that dictate the way things are done. I don't know whether they necessarily understand the evidence process that's gone into informing those procedures* [A-EF2-A/C]

4. Discussion

The findings demonstrate that a number and combination of different roles, strategies and processes are used to enact EBP. Moreover, there is an apparent relationship between different leadership roles, the context in which implementation is taking place and approaches used to embed EBP.

As previous studies have highlighted, context proved to be an important mediating factor between roles, mechanisms and the use of evidence in practice. At the macro level, differences were observed across countries, which appear to be linked to a mix of historical, policy and regulatory influences. For example, in countries such as Canada with a long history in EBP, a well-developed supporting infrastructure was apparent at both a strategic and clinical level, including individuals in dedicated facilitator roles with delegated authority to support implementation. In Australia and England, where the policy focus was on regulation and accreditation, there was a greater tendency to emphasise 'hard' systems and structures such as standards, policies and procedures to embed and monitor the implementation of evidence into clinical practice. In Sweden, national quality registers provide a substantial basis for EBP, but did not seem to have a strong impact on local quality improvement work within nursing. This highlights the need to take account of wider policy influences, beyond the immediate clinical and organisational setting, when considering barriers and enablers of EBP (15,41). Equally, it is apparent that regardless of the policy environment, in most countries similar barriers relating to workload and time were observed, reflecting international pressures on nursing and health systems more generally.

At the front-line level of nursing leadership – for example, nurse unit managers or practice development facilitators – our findings show that contrasting mechanisms were used, which reflected contrasting leadership behaviours. Managerial leaders emphasised the management and monitoring aspects of their role, aligned to meeting the strategic objectives of the organisation, particularly around expected performance standards. In turn, this linked to an approach of 'hard-wiring' evidence into practice through policies and

procedures, standards, audit and routine monitoring. By contrast, facilitative leaders emphasised processes concerned with relationships, communication and making connections, for example, by working alongside, engaging and talking with nursing staff.

Looking at the findings through a lens of organisational learning, aspects of both single and double loop learning are apparent (29). The more formal, managerial mechanisms, with a focus on meeting external standards and using audit as a monitoring tool, tended to reinforce single loop learning. By comparison, facilitative approaches were more concerned with enabling and supporting others to implement, typically through local quality improvement approaches whereby front-line staff were engaged in identifying and seeking solutions to clinical problems. This aligns closely with the concept of meta-routines proposed by Berta and colleagues (28), creating a link between facilitation and higher-order (double and triple-loop) learning and *"overcoming normal human tendencies to take reductionist approaches to problem-solving that afford only lower-order learning"* (p.11).

Both types of activity played a part in achieving EBP. The key appeared to be achieving a balance; for example, too great a focus on managing performance against standards could promote unquestioning practice. Or, from an organisational learning perspective, too much single loop learning could be at the expense of double and triple-loop learning. This is where executive and senior nursing leaders needed to take an important strategic role, balancing external regulatory requirements with internal processes and infrastructure for creating an evidence-based culture and encouraging and supporting critical thinking at the clinical level. This reinforces findings from previous research, which highlight the need for different approaches, encompassing transactional and transformational strategies that focus on task, relational and change-oriented goals (10, 19, 21, 42). However, our study highlights that it is not about identifying particular individuals or nursing roles that have prime responsibility for leading and developing EBP. Rather, the focus should be on how best to achieve complementarity between the mechanisms required to optimise EBP and the network of roles needed to enact these mechanisms.

The study findings also highlight the potential for hybrid roles to blend managerial and facilitation mechanisms. The concept of hybridity is a subject that has previously attracted some interest in relation to implementing evidence into nursing practice. For example, an English study examined nurse consultants as a form of hybrid role, proposing that it could combine a strategic translational focus with the ability to influence both professional and managerial hierarchies (43). It may also be useful to consider hybridity at the organisational level. Rather than focusing on the formal merging of clinical/professional and managerial roles in one person, there could be benefit in looking strategically at the blending of skills required for implementing EBP and how this needs to be configured in relation to the prevailing context in which implementation is occurring. For example a strong external emphasis on national standards and accreditation, may create a tendency towards more

formal, managerial approaches to EBP. To counter-balance this, more attention to facilitator-led, relationship-focused strategies at a local and organisational level may be warranted.

Overall, the study highlights that effective leadership for EBP is not role-specific. Rather certain mechanisms need to be enacted, mechanisms that are influenced by and need to be responsive to contextual influences at the micro, meso and macro level. This requires a strategic, yet dynamic network of roles, activities and relationships. In turn, this has implications for building capacity and capability for EBP within nursing. Previous work has highlighted the need to develop skills at different levels of complexity (for example, from learning basic skills such as audit and feedback through to more adaptive capabilities), through a combination of acquisitive and experience-based learning (44). Yet in the sample of nursing leaders we studied, most interviewees reported that they drew on generalist knowledge relating to leadership and change management to inform their role in EBP. The majority had not received any specific education or training on EBP; nor was the use of frameworks or theories to guide the process of implementation commonplace. As EBP has been listed as one of the key core competencies for all health professionals for the provision of safe, quality care it is notable that the nursing leaders had limited preparation in this field (45). This indicates an important area for future educational development.

4.1. Study strengths and limitations

Our study was designed to provide more detailed insights into the nursing leadership roles and processes required to optimise the implementation of EBP. The international and cross-sectoral nature of the research enabled us to look across a breadth of different settings and roles and specifically examine the influence of macro-level contextual factors. It is important to acknowledge the limitation of having only one or two sites per country and we cannot claim that data saturation was achieved, nor that the study sites fully represented the national picture within the respective host countries. The purposive nature of sampling added a level of variability, as the study sites were not directly comparable at a cross-country level. However, the emergent pattern of a relationship between the policy context, organisational drivers for EBP, and related roles and implementation processes suggests trustworthiness of the study findings. The logistics of conducting a qualitative study across five different settings with multiple interviewers also posed challenges in terms of data collection, analysis and interpretation, issues that we addressed through our project management structure and face to face meetings at key points in the research process. Furthermore, we took steps to enhance the trustworthiness, confirmability and dependability of our findings by encouraging reflexivity during research team meetings. For example, organising two-day, face-to-face meetings at key stages of data analysis and interpretation meetings, enabled research team members to engage in critically constructive discussion about their own and each other's data. Additionally, the study findings were

presented to local stakeholder group meetings in two of the four countries (Sweden and Australia) to sense-check interpretation of the data at a local level.

4.2. Conclusion

National policies around quality and performance shape priorities relating to EBP at an organisational level. This, in turn, influences the roles and mechanisms for implementation that are given prominence. There is a need to maintain a balance between the mechanisms of managing and monitoring performance versus facilitating critical questioning and reflection in and on practice. This requires a careful blending of managerial and facilitative leadership. The findings have implications for theory, practice, education and research relating to the implementation of EBP, both within nursing and at a wider inter-professional level. From a theoretical perspective, commonly applied EBP implementation frameworks such as the Consolidated Framework for Implementation Research (CFIR) [14], the Promoting Action on Research Implementation in Health Services framework (PARIHS) [13, 41] and the Knowledge to Action framework (K2A) [40] emphasise the mediating effect of context and the need for attention to the processes of implementation. Findings from this research provide a more detailed insight into the specific mechanisms that leaders need to enact and could add further detail to these type of implementation frameworks, particularly in terms of providing a more detailed explication of macro and meso-level context-mechanism relationships. In relation to practice, executive leaders need to be alert to the prevailing policy and regulatory environment in which they are operating and focus on achieving an appropriate balance between hard-wiring evidence into practice versus facilitating implementation. Future research could involve designing and testing an implementation intervention that explicitly blends managerial and facilitative leadership strategies at an organisational and operational level. This could include further exploration of the concept of hybridity, at both an individual and collective level. Finally, more attention to educational preparation of staff to engage in and lead EBP is warranted. As a core competence for future healthcare leaders, EBP and implementation skills need to be addressed within undergraduate, postgraduate and continuing professional development educational programmes for all healthcare professionals.

Ethical approval

- Australia: Human Research Ethics Committee (HREC/15/TQEH/114)
- Canada: University of Ottawa Ethics Committee (No. H05-15-04)
- 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).

Conflicts of interest: none

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