Flooded with evidence: using a 'spillway' model to improve research implementation in nursing practice

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KEY WORDS

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ABSTRACT

Objective
To identify barriers to implementing evidence-based practice initiatives in small to medium sub-acute facilities in Queensland.

Design
The study uses a qualitative methodology in which field observations and convergent interviews were employed to generate data.

Setting
Four south-east Queensland sub-acute care facilities participated in the study. Observational and interview data were collected.

Subjects
Field observations were recorded across the sites. Five research fellows collected observational data on evidence-based practice implementation across a period of six months. Nine clinicians participated in in-depth, convergent interviews at the end of the period of observation.

Main outcome measures
The authors analysed observational and interview data using qualitative thematic analysis.

Results
Three themes emerged which described the needs of clinicians when evidence-based practice initiatives were being implemented: (1) valuing evidence; (2) risk prioritisation; and (3) controlling the flow of evidence. A 'Spillway Model' is proposed as a mechanism for targeting clinical priorities using integrated risk management.

Conclusion
This study supports the use of integrated risk management as part of a Spillway Model to guide the introduction of evidence-based practice initiatives in the clinical setting.

INTRODUCTION

Although evidence-based practice (EBP) is generally viewed as an overwhelmingly positive initiative in nursing, the complexity of contemporary healthcare has resulted in some well documented failures (Grou Volpe et al 2014; Kmietowicz 2014; Metsälä and Vaherkoski 2014; JCCfTH 2009). While some models like the PARIHS framework provide guidance for utilising evidence (Kitson et al 2008), the information age has resulted in a flood of data that is unwieldy for nurses to effectively engage with. Recent studies have endeavoured to explore whether the volume of evidence can impact on the clarity of effective clinical decision-making (Moloney 2013). Runciman et al (2006) notes when new problems are encountered, clinicians are more inclined to make decisions that are familiar and comfortable than to thoroughly investigate what is best practice from a plethora of available evidence.

Intriguingly, EBP has become a process as much about risk-managing the volume of information available as it is about determining what is best practice (Moloney 2013). Poorly managed EBP in practice is often linked with extant organisational or cultural issues and is considered a genuine barrier to the delivery of quality healthcare (Kitson et al 2008; Averis and Pearson 2003). The impact of this phenomenon is not well understood in sub-acute care facilities in regional Queensland and is a trigger to action for this study.

METHOD

Phenomenographic research facilitates studying the experience of participants in order to appreciate the variation of the experience itself, and the adaptation of meaning of the research utilisation encounter for the participants (Pringle et al 2011). Numerous studies focusing on nurses' experiences of EBP implementation have been guided by a phenomenological design (Kaasalainen et al 2010; Estabrooks et al 2003).

Ethical approval was obtained from the Human Research Ethics Committee of the health service where participants were working (Approval no. EC00341:2013:26). All participants gave written informed consent prior to participation, and were advised of their right to withdraw without penalty or prejudice at any time.

Participants were recruited from four nominated trial sites in South East Queensland via purposive sampling. These sites included aged and community healthcare agencies in Bundaberg, Hervey Bay, Toowoomba and Brisbane. Five research fellows collected field notes in the form of diary entries from their observations of implemented EBP initiatives over a six month period across the organisations. Field notes observed detailed barriers and enablers of implemented EBP initiatives and impact on clinicians.

In total, nine clinicians were interviewed at the end of the observational period to further explore clinicians' experience of implementing EBP initiatives. Data were collected using the technique of convergent interviewing in which the researcher collects, analyse, and interpret the participant's lived experience, opinions, attitudes, beliefs, and knowledge that converge around a series of interviews. Convergent interviewing enables in-depth interrogation by advancing a cyclical research method requiring continuing analysis as part of the whole approach (Driedger 2008; Riege and Nair 2004). Interview prompts such as "tell me about EBP initiatives your facility is implementing at the current time" were asked. Recordings from interviews were transcribed verbatim. Field notes from observations were merged with transcribed interview data and analysed.

Copies of transcripts were returned to each participant for verification interviews prior to analysis as supported in phenomenographic interviewing (Meyrick 2006). Written transcripts were fractured using line-by-line coding and subsequent categorisation led to the identification of themes (Saldana 2012). A concept map of individual interviews using qualitative data analysis software was subsequently produced and disseminated to encourage participant involvement in the analysis phase (Ralph et al 2014).

FINDINGS

Analysis of the findings revealed that participants referred to the need to treat risks and EBP initiatives in the same way a spillway is used in a dam. While EBP initiatives were valued among participants unilaterally (theme 1), the need to target the evidence where it is needed most through a systematic audit process (theme 2) was clearly recognised. The mechanism for achieving this was through the use of a spillway-styled approach (theme 3) in which resultant workload and practice issues were offset by accounting for the activity of EBP.

Concept 1: Valuing evidence

It was clear that nurses understood the need to maintain a foundational knowledge base for their own practices. While the importance of evidence was recognised, nurses reported experiencing difficulty at times in knowing how to approaching the literature and implementing it into their own scope and sphere of practice. While participants recognised the importance of EBP from their university education, the desire to use research to enhance knowledge was confounded by an overall uncertainty and a lack of confidence in approaching the evidence-base:

> *"I know from my uni [sic] training that EBP is important. But since working full time I find it difficult to incorporate into my practice…I know I need to inform my practice and update my knowledge, but often I don't know how…Where do I start and how to I decide which topic is most important? I know there is a link between knowledge and EBP – I need to have the key knowledge prior to being able to look at the correct process [of how to utilise research] for EBP."*

Although research utilisation was valued because of its role in increasing knowledge for practice, participants strongly identified with the idea that knowledge growth translated to practice improvement:

> *"I think there are strong links to EBP and my own standards of practice."*

Despite attitudes towards increasing levels of EBP, participants consistently viewed organisational constraints as a key barrier to achieving as much. Organisations appeared to prioritise nurses "doing" practice more highly than nurses "thinking" about practice with many participants perceiving that research utilisation was something separate to what nurses were primarily employed to do:

> *"I just wished they had realistic expectations [about providing workload for research utilisation activities] so that we could actually achieve something…our organisation needs to make all evidenced-based activities more targeted and achievable."*

Concept 2: Risk prioritisation

Participants highly valued the concept of EBP. However, there was a desire to couch EBP initiatives in terms of identifying specific risks within the organisation and responding to them through utilising quality research. A general lack of awareness within the organisation regarding the prioritisation of ongoing issues and how they were addressed through EBP was apparent amongst participants:

> *"I would like to know how we prioritised our new focus of attention…I never agree with the priorities set by our organisation for research activity, I see other issues in my patient care that I think need more attention…surely our biggest risks should drive what we focus on for research…I once engaged in an infection control audit…although we found issues which I think were large,*

the organisation then prioritised other activities. Given the escalating incidents we have seen in our areas surely they are priorities over anything the organisation wants us to engage in."

A strong theme of concern resonated across participants who voiced concern that a lack of comprehensive risk analysis was resulting in evidence utilisation becoming more of a feel-good concept than a meaningful endeavour. They voiced the need for organisations to specifically and systematically identify high-risk issues related to patient care and cluster EBP initiatives through a process of audit-based risk prioritisation:

"Not once in my time here in 10 years have I witnessed a clinical audit…I don't think we have enough data to decide what [quality improvement activities] should be a priority, perhaps we need more audits…I think they [clinical audits] have a place in determining what our staff should be looking at in improving patient care and decreasing risk…If the organisation informed where the infection control priorities were…it would decrease risk."

Determining evidentiary needs through a risk management lens was a feature of participant responses as staff viewed it as a means to appropriately direct organisational research priorities. Participants reported the danger of becoming distracted by priorities that were popular rather than reflective of the immediate needs of the organisation:

"I would like to know how we prioritised our new focus of attention…there are often multiple requests from staff and others and I need to know I am focusing on the right issues at that time. I see these distractions as a risk."

"We report a lot of risk, but I wonder why the risks we talk about are never part of the new activities coming through…. where I used to work they used the risk management process to drive what was a key focus at the time."

As a consequence of unclear priority-setting, there was a strong perception among participants that organisations often tended towards a reactionary response rather than a proactive approach to preventing risk:

"I only see the organisation seek and implement changes based on new evidence when risk management considerations advise them that without it the factors of consequence may be severe. If the organisation informed us where the priorities are that we need concentrate on, it would likely decrease risk. At present I don't know where to start with this nursing portfolio."

A whole-of-organisation approach to implementing evidence-based strategies to specifically target key risks to the safety and efficacy of care was strongly supported among participants. Participants reported feeling frustrated with poorly defined EBP initiatives, particularly where a lack of focused initiatives was observed:

"Better clarification of the key issues is required and I would like some training on evidence based changes. We need to move away from the way we have always done things and towards best evidence. Otherwise I believe the organisation is at risk."

In the absence of specifically directing the focus of the organisation towards using evidence to mitigate key risks in practice, EBP was perceived as an overwhelming activity that was ineffective when not aligned to

organisational risks. Participants felt as though it contributed to staff workload increases and limited the capacity of clinicians to capably address the specific needs of the organisation they worked in:

> *"They should be ensuring we have the capacity to finish something though before asking us to take on another," "Staff want the capacity and the time to fit in new initiatives, I just don't have the capacity at the moment to fit into my day. The organisation needs to free our time and stop focusing on so many things all at once."*

Time constraints were frequently raised by participants as a major barrier to engaging with evidence-based initiatives within the organisation by better prioritising workload associated with its implementation:

> *"Managers should ask, "have we done this before?" when approached with ideas and issues. They should be ensuring nurses have the capacity to finish something though before asking us to take on another…we just need more time to do research."*

Concept 3: Controlling the flow of evidence

Intriguingly, participants use the analogy of a spillway to represent how their perceptions of EBP should be implemented. In the context of limited time and seemingly unlimited EBP initiatives, there was broad consensus among participants that workload was either never or seldom given to account for EBP as nurses need to be 'practicing' rather than 'thinking' about best-practice. Not having sufficient time to start, progress or even finish any evidence-based initiatives was a constant source of frustration and resulted in nurses feeling overloaded or "flooded" with too many tasks at once.

> *"We are often flooded with requests to engage in new activities I just wish someone would control the flood. You know a bit like a dam wall… Lately I just feel overloaded. Research is just another task we don't have time for. I think the organisation has no idea how much overload of information comes our way at times. I wish we could just focus on one task sometimes; I am juggling a lot at the moment I go home feeling overloaded. Sometimes I feel like I am juggling lots of things at once."*

Nurses very clearly recognised research utilisation and implementation as a major facet in addressing the priorities of care more tangibly amidst calls for it to be specifically recognised in the role of a nurse through workload allocation:

> *"Different nursing settings will need different approaches, and some creative thinking may be needed. However, it should be borne in mind that unless freed up time is earmarked for research implementation; other activities are likely to take priority."*

The use of the spillway analogy by participants was novel and resulted in the development of a model in which research utilisation, organisational priorities and integrated risk management are considered in the broader context of EBP.

DISCUSSION

This research has cast a spotlight on the tension between the benefits of EBP initiatives and how the wealth of evidence is managed to target clinical risks. The following discussion will address three main points: the

complexity of effectively implementing EBP initiatives; the role of nurses in communicating around EBP initiatives; and potential Spillway mechanisms to control the flow of evidence towards identified risks.

The rise of EBP initiatives in the clinical environment have been well studied in the literature (Kitson et al 2008; Pearson et al 2005; Estabrooks et al 2003; Rogers 2002). However, there are emerging concerns about how the influx of EBP initiatives should be addressed to effectively challenge targeted specific clinical issues (Moloney 2013). This issue is represented by study data showing that while nursing staff had a good grasp on clinical risks and were eager to engage in EBP to mitigate clinical risks, an overload of these initiatives overwhelmed the implementation process resulting in broad perceptions of failure. The resultant outcome meant there was a reported decrease in staff capacity to utilise evidence effectively.

More broadly, there are clear deficits in the dissemination and utilisation of multiple EBP practice initiatives concurrently in smaller organisations. Current implementation models have not factored in the broader influences on risk-prioritisation and its relationship with EBP (Pearson et al 2005). Health services need to consider what their key clinical risks are when considering what EBP initiatives to emphasise (Blackwood et al 2011).

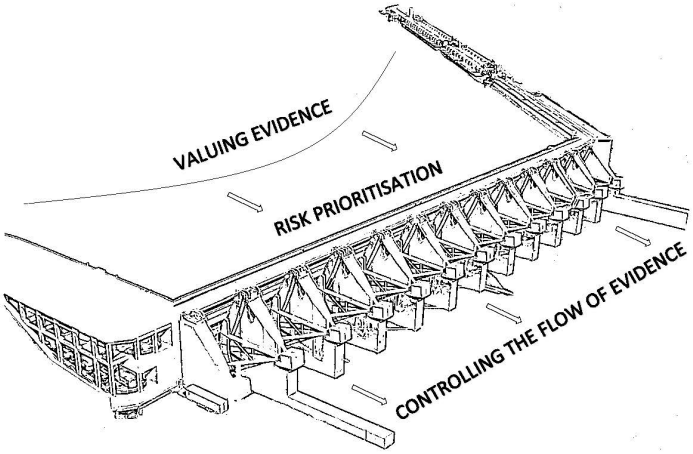
If healthcare professionals are questioning decision-making from their leadership groups, then clinician engagement in EBP has been sub-optimal with respect to decision-making processes. Decisions typically made by senior health managers regarding EBP initiatives should be inclusive of staff longitudinally, throughout its implementation (Rogers 2002). The results of Timmins et al (2012) align with this study as both findings raise questions around the type of leadership for evidence-implementation within the facility and how it is communicated to ensure it impacts the point-of-care positively.

Ironically, very few studies directly consider personal and organisational risk prioritisation skills and or leadership attributes in their recommended processes. A review of the literature reveals that the highest priorities to nurses were ‘standards of patient care’ and a ‘reduction of harm’ with significant challenges in evidence utilisation and controlling the flow of information in the clinical setting (Morley et al 2014; Wilkes et al 2013). To appropriately focus the implementation of evidence, Smith et al (2009) argues that researchers and decision-makers must spend more time developing EBP implementation initiatives collaboratively. Furthermore, these initiatives must be targeted to the most pressing clinical risks, meaning nurses at the point-of-care should have a vocal role in deciding where and how evidence implementation initiatives are prioritised (Mandleco and Schwartz 2002).

Consequently, healthcare leaders and researchers need to view integrated risk management and EBP implementation as an opportunity to create strong synergies between the two. For this to occur, healthcare organisations need to be sensitive and responsive to core staff concerns around clinical risks and the time taken to utilise evidence to mitigate them effectively (Rangachari et al 2015; Lavis et al 2003). For the nursing profession, the results of this study and that of Moloney (2013) support the role of a nursing ‘gatekeeper’ to articulate the hidden workload involved with EBP initiatives and clinical risk mitigation.

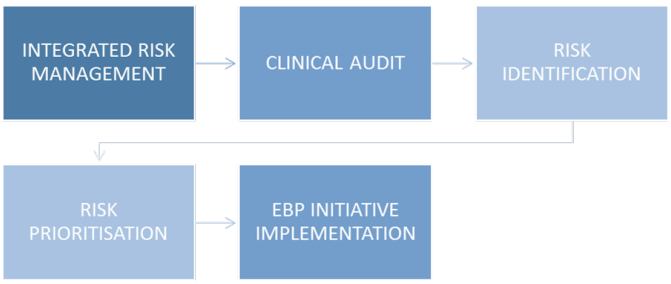
From this study, a basic representation of the need to control the flow of evidence is offered to articulate the ideal process of how EBP initiatives are implemented in the clinical environment. The Spillway Model (see figure 1) - directly derived from the data – is proposed as a means of structuring evidence uptake, identifying risks, and proposing an appropriately staged intervention so as not to overwhelm clinicians.

Figure 1: The Spillway Model



A Spillway Model is necessary to control the flow of evidence and appropriately prioritise risk. While a variety of mechanisms could be used as the spillway 'gate', there needs to be clear channels for how EBP initiatives are implemented along with justifiable rationales. The participants clearly pointed to a system where a mechanism such as integrated risk management acted as a way of controlling the flow of EBP initiatives. The use of clinical audits, as raised by participants, can form an integral part of any integrated risk management system in which risks are prioritised to guide the implementation of EBP initiatives in the clinical setting.

Figure 2: From Integrated Risk Management to EBP Implementation



While this process presents *one* possible mechanism for using a Spillway Model, a pragmatic approach to long term evaluation of successes and failures for EBP initiatives is required to ensure that risk management, EBP and quality assurance become integrated processes. A longitudinal evaluation of the process proposed by the Spillway model is therefore warranted. As this research has cast a spotlight on a significant gap in the domain of putting EBP into practice, a challenge has now been tendered; will healthcare organisations now work more effectively with the nursing profession to translate these initiatives to the point-of-care more effectively?

LIMITATIONS

This study may be limited by its location and length. It is not known whether similar circumstances exist outside of south-east Queensland. Likewise, although data were collected over a six-month period, it is not known whether controlling the flow of evidence improves after this period.

CONCLUSION

This study emphasises the clinical environment in which nurses work require a discrete structured filtering mechanism that controls the flow of different evidence-based activities impacting on their workloads. In doing so, nurses may then be able to channel EBP initiatives according to risk rather than other, arguably dubious, rationales. As natural attorneys of change, nurses need to take a proactive leading role in prioritising EBP initiatives, ensuring that, as internal stakeholders, they maintain clear lines of communication to key organisational touch points to articulate the risks and needs of each clinical setting.

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