Improving processes for implementing evidence-based practice in midwifery: Development of an eTool(KIT) for midwives

Annemarie June De Leo

Edith Cowan University

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Improving processes for implementing evidence-based practice in midwifery: Development of an eTool(KIT) for midwives

This thesis is submitted in order to fill the requirements for the degree of
Doctor of Philosophy

Annemarie June De Leo
Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

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(ii) contain any material previously published or written by another person except where due reference is made in the text of this thesis;

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Signature:

Annemarie De Leo

Date: 6th November 2020
Dedication

This thesis is dedicated to the memory of my precious mother-in-law

Marilyn De Leo

Thank you for being the mum and grandmother we all aspire to be.

We all miss you dearly.
Abstract

Evidence-based practice (EBP) is well-established as the gold standard for service delivery of quality healthcare around the world, yet there remains a significant gap between best available evidence and its everyday use in maternity services. The numerous benefits of EBP are therefore never realised and although a considerable body of knowledge has evolved on how to promote the uptake of new EBPs, little is known about midwives’ experience of implementing EBP or leading practice change projects in clinical areas.

The aim of this study was to work collaboratively with midwives towards the co-development of an evidence implementation resource, designed to provide clear direction and support to midwives wanting to implement new EBPs in clinical areas. This led to the design of a blueprint for an eTool(KIT) for midwives, outlining a step-by-step approach to leading practice change projects in clinical areas.

A qualitative approach to the study design was adopted and critical realism employed as the philosophical underpinning for this research inquiry. Seventeen Australian midwives consented to participate in either a focus group discussion or face-to-face interview, which were audio recorded, transcribed and combined with additional field notes to provide a collection of data that was analysed and reported.

Three higher order codes were synthesised from the findings to make overall meaning of the factors that contribute to the adoption of EBP in midwifery: “It’s hard to overcome the resistance towards new EBP, midwives are passionate yet reticent towards leading practice change”, “Inter-disciplinary collaboration and organisations supportive of change are key to improving implementation processes for midwives”, and “To lead practice change initiatives, midwives require knowledge of system-level change and a clear process for evidence implementation”. The findings revealed that although midwives are passionate
about EBP, they express reticence towards leading practice change for numerous reasons. These reasons contribute to the inconsistent and sub-optimal use of EBP in Australian maternity services. As such, this study offers a pragmatic approach to organisational change and demonstrates the potential for midwives to be leader of evidence-based change and key stakeholders in all future practice change projects in Australian maternity services.
Acknowledgements

There have been many people who have walked this journey with me and I would like to take a moment to acknowledge and thank them.

To my supervisors, Professor Sara Bayes and Dr Dianne Bloxsome, you have guided and supported my work with unquestionable faith in me. Words cannot express how thankful I am for the opportunity to work and learn from you both, you are inspirational women and I will be forever grateful to you both for being there for me on this incredible journey.

To Janice Butt, I sincerely thank you for accepting the invitation to join my supervisory panel and for the wisdom and tacit knowledge you have provided throughout this journey. I hope that we will continue to work together in the future.

Thank you to my parents and father-in-law for accommodating my studies, taking care of my children and feeding my family when I was too engrossed in my work to notice the outside world. Your ongoing support and belief in what I was doing has been a precious gift to me.

To my beautiful girls: Lucy, Claire, Hannah and Eliza, thank you for understanding and letting mummy do her work. I love you all very much and hope that one day I can support you to achieve your dreams too, whatever they may be.

Finally, to my husband Peter. Thank you for sharing this journey with me and gifting me the time and space I needed to achieve this. Thank you for quietly accommodating the noise and the commotion of our household, for spending nights alone while I worked in the study and for being the parent I couldn’t be. Your unconditional love and commitment to myself and our girls are what made this whole journey possible. I love you and thank God the stars aligned and brought us together.
Research Outputs

This thesis is presented in a “with publication” format. Three manuscripts were prepared for publication. Chapter two includes the first published paper. Chapter five comprises the second published paper, and a manuscript currently under review.

Published papers


Manuscripts under review

3. De Leo, A. D., Bayes, S., Bloxsome, D., & Butt, J. Exploring the usability of the COM-B model and Theoretical Domains Framework (TDF) to define the underlying helpers and hindrances of evidence-based change in midwifery.
Presentations


Title: “Moving evidence into practice: Using Participatory Action Research (PAR) to develop an evidence implementation resource for midwives.”


Title: “A six-step approach to Evidence-Based Practice: The development of an eTool(KIT) for midwives.”


Title: “A six-step approach to Evidence-Based Practice: The development of an eTool(KIT) for midwives.”

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Statement of Contributors

I, Annemarie June De Leo declare I contributed more than 70% of the research outputs arising from this study and I was first author for all three papers.

Contributions were made by my supervisors: Professor Sara Bayes, Dr Dianne Bloxsome, and Ms Janice Butt. Dr Sadie Geraghty also provided guidance and support, which contributed to the publications generated from this study.

Finally, Ms Rebecca Scriven and Ms Michelle Pedlow, senior learning designers from Edith Cowan University, assisted with the intervention development.

We, as Co-authors, endorse that this level of contribution by the Candidate indicated above is appropriate. We confirm permission has been obtained from all authors to include the articles in this PhD thesis.

Signed

Professor Sara Bayes, co-authored three articles

Date 5th November 2020

Dr Dianne Bloxsome, co-authored two articles

Date 5th November 2020

Dr Sadie Geraghty, co-authored two articles

Date 5th November 2020

Ms Janice Butt, co-authored three articles

Date 5th November 2020

Annemarie De Leo, PhD Candidate

Date 5th November 2020
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<td>ACT</td>
<td>Australian Capital Territory</td>
</tr>
<tr>
<td>AR</td>
<td>Action Research</td>
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<td>ACM</td>
<td>Australian College of Midwives</td>
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<td>CASP</td>
<td>Critical Appraisal Skills Program</td>
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<td>CFIR</td>
<td>Consolidated Framework for Implementation Research</td>
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<td>COM-B</td>
<td>Capability, Opportunity, Motivation and Behaviour Model</td>
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<tr>
<td>COVID-19</td>
<td>Coronavirus</td>
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<td>CR</td>
<td>Critical Realism</td>
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<td>EBP</td>
<td>Evidence-Based Practice</td>
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<td>IS</td>
<td>Implementation Science</td>
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<td>HPWS</td>
<td>High Performance Work Systems</td>
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<td>IKT</td>
<td>Integrated Knowledge Translation</td>
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<td>JBI</td>
<td>Joanna Briggs Institute</td>
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<td>KTA</td>
<td>Knowledge-to-Action</td>
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<td>LMS</td>
<td>Learning Management Systems</td>
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<td>NGT</td>
<td>Nominal Group Technique</td>
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<td>NMBA</td>
<td>Nursing and Midwifery Board of Australia</td>
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<td>NSW</td>
<td>New South Wales</td>
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<td>NT</td>
<td>Northern Territory</td>
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<td>PAR</td>
<td>Participatory Action Research</td>
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<td>Plan Do Study Act</td>
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<td>Setting Perspective Intervention Comparison Evaluation</td>
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<td>TDF</td>
<td>Theoretical Domains Framework</td>
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<td>TPS</td>
<td>Toyota Production System</td>
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Chapter One: Introducing the Study

All countries face challenges in delivering high quality maternity services, as evident in the disparities and varied statistical outcomes of childbearing women and newborns around the world (Ten Hoope-Bender & Renfrew, 2014). Largely, this is a result of the slow, arduous process of implementing change (Bowman, 2018). People and the systems they create often resist change or are not open to the activities and new practices that occur when change is initiated (Gilley, Gilley, & McMillan, 2009). This disruption is part of the normal activity necessary for growth in any system, thus to create positive change some degree of resistance is anticipated to be part of the process (Bowman, 2018). The contribution that midwives can and do make towards evidence informed care is significant and increasingly recognised as central to improving the health outcomes and experiences of all women using maternity services (Ten Hoope-Bender et al., 2014).

Research and knowledge in the field of midwifery continues to develop from the advent of evidence-based medicine over two decades ago. The term ‘Evidence-based practice’, or ‘EBP’, is derived from the early work of evidence-based medicine and the conscientious use of current best evidence to inform clinical decision-making and best practice standards in healthcare (Sackett, 1997). This evidence presents new ways to inform and support evidence based practice (EBP), a term used to describe healthcare interventions that reflect the application of best available evidence, clinical expertise and patient values and preferences (Warren et al., 2016). Evidence based practice is also described as a form of knowledge used by clinicians to plan and action interventions that are known to improve the quality of service delivery and expected outcomes of consumers (Bick, 2011). In practice, EBP is a process encompassing a series of sequential steps: identifying a clinical problem and translating it into an answerable question, sourcing best available evidence relevant to the clinical problem, appraising the evidence for its methodological rigor before translating the resultant findings into EBP (Rycroft-Malone et al., 2004).
For midwives, EBP reflects a competent, professional midwife who provides day-to-day midwifery care that is supported by latest evidence, aligning routine interventions and practices accordingly.

Although easily described, translating best available evidence into EBP is known to be complex and where latest evidence is recognised but not used in everyday care, a gap has been conceptualised (De Leo, Bayes, Geraghty, & Butt, 2019). This gap reflects not only a delay in the uptake of new EBPs, but also the gap between knowledge producers and end users (Rycroft-Malone et al., 2016b). In midwifery, most midwives are motivated to employ EBP in their daily tasks yet report challenges when trying to initiate practice change activities (Hogan, Barry, Burke, & Joyce, 2011; Toohill, Sidebothom, Gamble, Fennwick, & Creedy, 2017). Seemingly, midwives are left to implement EBP instinctively, with no assurance of successful outcomes or support along the way (Bayes, Juggins, Whitehead, & De Leo, 2019). The significance of this problem highlights the need for this research, and the development of strategies and possible interventions that will support midwives to efficiently employ EBP in maternity services. The anticipated benefits of these activities will extend beyond midwives, to positively impact all maternity care providers and the care delivered to women and their newborns.

The magnitude of the evidence-to-practice gap problem has stimulated a surge in literature on various issues regarding the translation of latest evidence into healthcare environments, with terminologies such as knowledge utilisation, knowledge translation and knowledge exchange developed to explain this complicated process (Graham, Kothari, & McCutcheon, 2018; Tucker, 2017). Additionally, where the evidence-to-practice gap was historically considered a simple failure to disseminate new knowledge (i.e. knowledge users not aware of best available evidence), it is now recognised as multi-dimensional and for clinicians a challenging course (Hunter, 2013). Inevitably, without processes to efficiently translate new knowledge into EBP, the act of evidence informed care will remain sub-optimal, compromising the quality and service delivery of global maternity care (Mairs, McNeil, McLeod, Prorok, & Stolee, 2013).
To better understand the issues associated with implementing evidence-based change, I sought to better understand how and why change occurs, or flounders, in the normal functioning of everyday midwifery practice. I considered this to be the ideal platform from which to begin this study, anticipating this would provide valuable insight into the challenges of implementing EBP in maternity contexts. In this introductory chapter I present the constituent parts of the study presented in this thesis; establishing the research rationale, the context of the research, significance of the study, the key terms and language that will be used throughout and I will present the study aim and objectives. Finally, the chapter presents an overview of the structure for this thesis.

**Theorising change in midwifery**

The concept of theorising change began in the 1940’s, with both Lewin and later Whitehead publishing work on social change and changing human behaviour (Lewin, 1946; Whitehead, 1949). Lewin developed a three step process: Unfreeze, free, refreeze; which describes change as a transitional process characterised by unfreezing old behaviours, introducing new ones and subsequently re-freezing them so new behaviours become routine activity (Lewin, 1946). Comparatively, Whitehead’s view towards change was organic and implied change could only occur if and when individuals were ready (Whitehead, 1949). Despite their differences, both views are considered pivotal to the evolution of change theories and the process of defining how change occurs regarding human behaviour (Bowman, 2018).

Nearly 10 years after its conception, alternative versions of Lewin and Whitehead’s seminal work on theorising change emerged as researchers proposed new insights into their original claims. These theories differed in their assertion that individuals and systems undergoing change must first be convinced that change is necessary (Lippitt, Watson, & Westley, 1958). This confirmed that initiating change not only involved identifying the need for change, but also the desire to both change and resolve the problem (Lippitt et al., 1958). Since then, work by several change theorists have continued to build on these seminal works and further refine the process of creating sustained change. Kemmis and
McTaggart (1988) described the process of change as a series of four distinct steps, portrayed through iterative cycles of planning, action, observation and reflection. Similarly, Prochaska and DiClemente identified a five-stage approach to change, which outlined a series of actions that involved pre-contemplation, contemplation, preparation, action, and maintenance (Prochaska, DiClemente, & Norcross, 1992). These stages were considered to spiral, with individuals able to enter, leave and re-enter the stages at any point of the process (Prochaska et al., 1992). Together, these influential works provide a foundation for theorising change, however as society continues to advance and introduce more complex systems of activity, alternative theories have emerged to theorise change from an organisational perspective.

Organisational behaviour theories are relevant considerations when exploring the complexities associated with the evidence-to-practice gap problem in maternity care. Theories associated with organisational behaviour attempt to define how individuals relate to each other and respond to situations in the workplace, particularly within the context of implementing change (Ferlie, Fitzgerald, & Wood, 2000). There are four complementary perspectives regarding organisational behaviour, each having a strong connection with EBP. First, open system perspectives identify the permeable relationship between organisations, stakeholders and the external environment (Denison & Mishra, 1995). Second, learning perspectives (also referred to as knowledge management) recognise knowledge as the main driver of organisational change, with the belief that organisational learning contributes to the efficiency and functioning of organisations (Yeo, 2002). Third, High Performance Work Systems (HPWS), which accept the value of human capital: the knowledge, skillsets and abilities of individuals to provide quality healthcare in collaborative work environments (Leggat, Bartram, & Stanton, 2011). Last, the value of attaining a stakeholder perspective, which includes the needs and expectations of individuals who affect, or are affected by, the overarching goals and activities of the organisation (Mahadkar, Mills, & Price, 2012; McGrath & Whitty, 2017). When combined, these four complimentary perspectives on organisational behaviour theories are linked in their capacity to accelerate organisational change, which in turn improves the efficiency
of organisations and the interplay between individuals, the local context and the wider healthcare system. Arguably, the starting point for implementing EBP lies in acquiring in-depth knowledge of these relationships and how change theories can be applied to the evidence-to-practice gap problem in midwifery.

The different perspectives presented on theorising change provide insight into how change theories continue to evolve and impact change activities from both individual and organisational perspectives. However, given the scope of the evidence-to-practice gap problem, it is important to explore the field of Implementation Science (IS): a scientific discipline that aims to promote the timely adoption of EBP in clinical environments (Nilsen, 2015).

**Implementation Science in midwifery**

Implementation Science (IS) describes a process of translating new scientific knowledge into evidence informed care (Tabak, Khoong, Chambers, & Brownson, 2012). This comprises over 60 theories and many frameworks and models, all of which contribute to defining and supporting the process of evidence implementation in healthcare (Gallen, Kodate, & Casey, 2019). Fundamentally, IS aims to address the evidence-to-practice problem by providing possible solutions to the delay between research production and its implementation in clinical environments (Westerlund, Sundberg, & Nilsen, 2019).

Implementation Science methods for evidence implementation often overlap with Quality Improvement (QI) processes in healthcare, although there are some notable differences. While QI is targeted at the provider, practice environment or healthcare organisation, IS focuses on addressing the gap between knowledge producers and knowledge users (Bauer, Damschroder, Hagedorn, Smith, & Kilbourne, 2015). In this context, IS has triggered a relatively new aspect of evidence implementation: Integrated Knowledge Translation (IKT). Integrated Knowledge Translation combines knowledge users with knowledge producers, creating a partnership that works towards improving the adoption of clinical innovations in healthcare (Gagliardi, Berta, Kothari, Boyko, & Urquhart, 2016). This collaborative style of research has also been associated with Action Research (AR)
projects, where evidence suggests involving persons responsible for patient care in the production of scientific knowledge, leads to practical research and better utilisation where it is intended (Nymann, Bondas, Downe, & Berg, 2013).

A possible solution to the evidence-to-practice gap in maternity services may lie in moving towards an era of IKT, where collaborations between researchers and stakeholders of EBP will see the development of interventions and practices that are applicable to clinicians working in clinical areas (Mairs et al., 2013). Undoubtedly, the discipline of midwifery is a key stakeholder in such collaborations and this study provides a pivotal opportunity to work in partnership with midwives towards the development of a new process that will improve the quality of maternity services and adoption of EBP in clinical areas.

**Significance of the study**

From a global perspective healthcare systems continue to perform below acceptable levels in regard to service delivery and the expected health outcomes of consumers (Lau et al., 2016). While there is always some degree of inconsistency in the adoption of EBP, the proportion of consumers receiving sub-optimal care remains objectionable. Arguably, midwives are well placed to lead practice change activities and promote the adoption of EBP, yet many midwives report uncertainty in how to translate latest evidence into evidence informed care (De Leo et al., 2019; Hunter, 2013).

In Australia, midwifery legislation mandates the use of evidence-based midwifery practice as part of midwives professional obligation to provide quality maternity care based on best available evidence (NMBA, 2018). However, as research continues to afford midwives new evidence to inform their clinical practice, new EBPs remain ineffectually implemented (Lau et al., 2016). Subsequently, women and newborns may at times be subjected to potentially harmful interventions or sub-optimal care (Miller et al., 2016). Over the last two decades numerous implementation strategies have been employed to facilitate the process of evidence implementation (Geerligs, Rankin, Shepherd, & Butow, 2018). However, a shortage remains in both research and literature regarding the use of
such strategies within the discipline of midwifery. Therefore, considerations for the actions needed to efficiently implement EBP into clinical areas should be a priority focus for maternity leaders and midwives, who acknowledge that like other professions the pathway from evidence-to-practice remains a challenging process for midwives (Parker, Lieschke, & Giles, 2017).

This thesis presents an in-depth study exploring the challenges midwives experience when trying to implement new EBPs into clinical areas. The barriers and facilitators of evidence-based change are considered, followed by the individual, local and organisational factors that influence the outcomes of practice change projects in maternity services. The overarching purpose of this study was to form a collaborative working partnership with midwives to develop the blueprint for an evidence implementation resource. Long-term, it was anticipated this resource would provide midwives with a clear process and the support needed to address the evidence-to-practice gap problem, while raising the profile of midwives as change leaders of EBP in Australian maternity services. In the short-term, this study focused on preparing midwives for implementing new innovations in clinical areas, providing them with the tools needed to lead a practice change initiative, implement sustained changes to clinical practice and champion for evidence-based change.

**Overview of the thesis**

This thesis reports midwives’ views and experience of implementing EBP in clinical areas. The primary aim of the study was to work collaboratively with midwives to develop an evidence implementation resource, designed to provide clear direction for midwives wanting to implement new EBPs in clinical areas. To achieve this an overarching research question was developed:

“What factors and other tools need to be considered in the design of an evidence implementation resource for midwives?”

To answer this question, the following three objectives were set:
1. To explore the experience of midwives who have tried to implement new EBPs in clinical areas;
2. To establish the key factors that help or hinder evidence-based change in midwifery contexts; To co-develop the blueprint for an evidence implementation resource for midwives wanting to initiate evidence-based change in clinical areas; and
3. To begin to address the evidence-to-practice gap problem in Australian maternity services (It is acknowledged that this objective cannot be easily measured as it will be based on the anecdotal commentary and feedback provided by participants upon closure of this study).

The research conducted throughout this study was guided by the philosophical underpinning of Critical Realism (CR) and the methodology Action Research (AR). Data were collected from eight midwifery leaders and nine practicing midwives between July 2019 and April 2020, who collectively agreed that a web-based resource designed to support midwives implement EBP in clinical areas, would be the ideal platform for midwives working in any maternity context. Although various other strategies were explored (ie. The development of a hard copy manual, poster or staff development education session), none were considered optimal or preferred by the majority of participants.

The three higher order codes that were developed from all data collected throughout this study characterise the findings reported in this thesis. They are as follows: “It’s hard to overcome the resistance towards new EBPs, midwives are passionate yet reticent towards leading practice change”, “Inter-disciplinary collaboration and organisations supportive of change are key to improving implementation processes for midwives”, and “To lead practice change initiatives, midwives require knowledge of system-level change and a clear process for evidence implementation.” The timetable for this study is presented below.
<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>July 2019</td>
<td><strong>Consultation 1: Planning phase</strong></td>
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<td></td>
<td>A preliminary review and integrative review of the literature were conducted, with the findings used to inform the key concepts of the study and subsequent stakeholder advisory group introductory meeting.</td>
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<tr>
<td>August 2029</td>
<td>First convene of the stakeholder advisory group (comprising WA midwifery leaders).</td>
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<tr>
<td>Sept - Dec</td>
<td>• Introductory focus group session and discussion of intended outcomes for the project.</td>
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<td></td>
<td>• Face-to-face interviews conducted for members of the advisory group who could not attend the focus group discussion.</td>
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<td></td>
<td>• A web-based tool identified as the preferred option for a midwifery specific resource.</td>
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<td></td>
<td>• Analysis of qualitative data by the candidate and research team, with findings used to inform the development of the discussion points and questions used in consultation two.</td>
</tr>
<tr>
<td>May-July 2020</td>
<td><strong>Consultation 2: Action phase</strong></td>
</tr>
<tr>
<td></td>
<td>• Recruitment of practicing midwives via the ACM to participate in discussions regarding the development of an EBP resource.</td>
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<tr>
<td></td>
<td>• An online platform determined as the most appropriate strategy for the design of a resource for midwives.</td>
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<tr>
<td>Aug-Sept 2019</td>
<td><strong>Consultation 3:</strong></td>
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<td>• Two senior learning advisors approached to brainstorm and assist with the development of a web-based evidence implementation resource.</td>
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<tr>
<td>Nov-Dec 2019</td>
<td><strong>Consultation 4:</strong></td>
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<td></td>
<td>• In consultation with participants, the blueprint for an evidence implementation resource commenced</td>
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<td></td>
<td>• Blueprint circulated to all participants for review and feedback.</td>
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<td></td>
<td>• Amendments made to the resource blueprint following feedback.</td>
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<tr>
<td>Jan-April 2020</td>
<td><strong>Observation phase</strong></td>
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<td></td>
<td>• Study findings compared with the resource blueprint</td>
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<td>• Continued refinement of the resource.</td>
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<td></td>
<td>• Ongoing communication with all participants.</td>
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<tr>
<td>May-June 2020</td>
<td><strong>Reflection phase</strong></td>
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<td></td>
<td>• Reflection of the research journey and outcomes achieved with participants.</td>
</tr>
<tr>
<td></td>
<td>• Final communication with participants and closure of the study.</td>
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</tbody>
</table>
Overview of the thesis structure

This thesis comprises seven chapters and includes two peer-reviewed publications and one publishable manuscript currently under review. A brief overview of each chapter follows:

**Chapter One:** Presented above, introduces the phenomenon of interest, the problem and the gap in knowledge that this study fills, the overarching aims of the study and formulation of the research question, the methodology and the structure of this thesis.

**Chapter Two:** Presents an integrative review of the literature and confirms the need for this study. A publication titled: “Midwives’ use of best available evidence: An integrative review” (paper one) is included.

**Chapter Three:** Identifies Critical Realism (CR) as the philosophical underpinning of this study and Action Research (AR) as the methodology employed to guide the research process. Pertinent issues surrounding the chosen philosophical framework are discussed, as is the rigor and appropriate selection of the research approach.

**Chapter Four:** Provides an explanation of the methods and study design selected for this study. A justification of the participant recruitment process, sample and population characteristics are presented. Data collection and analysis methods are outlined, the process of intervention development is described and the ethical research considerations are presented.

**Chapter Five:** Presents the core findings that emerged from analysis of the data. Also included are two manuscripts (one of which has been accepted for publication at the time of writing). Paper two titled: “Midwifery leaders views on
the factors considered crucial to implementing evidence-based practice in clinical areas” presents midwifery leaders’ opinions of leading practice change and the factors that contribute to successfully embedding new EBPs in clinical areas. Paper three (currently under review), titled: “Exploring the usability of the COM-B and Theoretical Domains Framework (TDF) to define the underlying helpers and hindrances of evidence-based change in midwifery” provides insight into the feasibility of combining a behaviour change theory with a context assessment tool to diagnose the helpers and hindrances of evidence-based change in maternity services.

**Chapter Six:*** Explores my interpretation of the findings within a critical realist framework: The empirical, the actual and the real domains. Also discussed are the unique contributions this study provides to the discipline of midwifery and the wider academic community, as well as the study limitations.

**Chapter Seven:*** Concludes the study. The degree to which the study aim and objectives were achieved is considered, as is the extent to which the research question was answered. Recommendations for clinical practice, education and future research are discussed. Last, is the final summary of my research journey and personal reflection.

**Summary**

This chapter has broadly set the scene in relation to the existent evidence-to-practice gap in midwifery, introducing the overarching aim and objectives of this study.

Having established the context of the study being reported, chapter two presents a detailed literature review on midwives’ use of best available evidence practice. A peer reviewed publication titled “Midwives’ use of best available evidence in practice: An integrative review” is featured in chapter two, which clearly highlights the gap in knowledge that the current study was designed to help resolve.
Chapter Two: Literature Review

Introduction

In this chapter I present a detailed review of the literature, confirming what is known about midwives’ use of best available evidence in practice. The purpose of conducting this literature review was to confirm what is known about midwives’ efforts to implement EBP and to identify what remains unknown about implementing evidence-based change in midwifery contexts. This enabled me to identify a knowledge gap regarding this issue, which in turn justified the need for the study reported in this thesis. First, a preliminary review of the resources and other strategies midwives’ reportedly employ to initiate EBP is presented. The aim of conducting this preliminary review was to explore what is known about midwives’ experience of using IS tools to initiate evidence-based change in midwifery contexts. This was achieved, however given the numerous theories and frameworks that currently exist to support the implementation efforts of healthcare providers, there remains a relative paucity in publications on the usability of these tools and their application in midwifery contexts. Although insightful, the knowledge developed from this preliminary review required further investigation. Subsequently, an integrative review of the literature was conducted to obtain a deeper understanding of what is known about midwives’ use of latest evidence in clinical practice. This included identification and review of all existing literature relating to midwives’ use of best available evidence in clinical practice. My published integrative review, titled: “Midwives’ use of best available evidence in practice: An integrative review”, then follows. The chapter concludes with identification of the knowledge gap that the current study addresses, and the formulation of a research question.
Preliminary review of the literature

In September 2018, a preliminary review of the tools and other strategies midwives’ employ to initiate EBP was conducted. The objectives were as follows:

1. To explore midwives experience of using implementation tools and other strategies to implement new EBPs;
2. To identify what is known about midwives’ efforts to implement EBP and what remains unknown, and
3. To report on midwives attitudes towards existing implementation tools in practice.

A preliminary review question was developed using the Setting Perspective Intervention Comparison Evaluation (SPICE) framework (Booth & Brice, 2004):

“What are midwives’ experiences of using implementation tools to implement evidence-based change in clinical areas?”. The SPICE framework was specifically chosen for its reference to intervention when designing a review question (Booth, Sutton, & Papaioannou, 2016). Guided by the key words and search terms derived from the preliminary review question, I created a search string using electronic truncation and synonyms, which is presented below (Figure 1).

Figure 1: The search string created using electronic truncation and synonyms
The search string was entered into the following databases: CINAHL, Medline, and PubMed. Inclusion and exclusion criteria were established and applied to the initial search process. These criteria were as follows:

**Inclusion Criteria:**

- Literature published between 1998 – 2018, which reflects the time frame in which midwifery research publications in peer reviewed journals has increased exponentially;
- Qualitative or quantitative research studies, including case studies and mixed method studies, systematic reviews and original research;
- Studies relating to midwifery, midwives or maternity care providers; and
- Studies reported in English language.

**Exclusion Criteria:**

- Literature outside the field of healthcare;
- Studies published in languages other than English; and
- Grey literature.

The initial search retrieved only one (n=1) article relevant to the profession of midwifery. Therefore, following discussions between the supervisory team the inclusion criteria was revised to include other healthcare professionals (for example nurses, doctors, obstetricians and obstetric nurses), which increased the volume of articles retrieved.

**Screening**

Screening of the literature was guided by a series of articles published by the Joanna Briggs Institute (JBI) on the process for conducting a systematic review of the literature (Aromataris & Pearson, 2014). These articles outline a step-by-step approach to searching and synthesising evidence, which informed the steps undertaken in this preliminary review. Initial screening of the literature was conducted by entering the above search string into several web-based platforms purposely selected by myself for their reference to midwifery issues or maternity
care (CINAHL, Medline and Implementation Science Journal). This was followed by less complex searches that were conducted by entering keywords from the preliminary review question into other databases deemed relevant by myself and the supervisory team (The Cochrane Library, Emerald Journals & Books, Google Scholar and Taylor & Francis online). The screening process was completed by a manual search by citation in significant midwifery journals (e.g. “Midwifery” and “Women and Birth”). A total of 1,737 articles were retrieved during the search and screening process, 18 articles were retained for full-text review, from which six were deemed suitable for quality appraisal. These articles were exported into a reference management system (Endnote) for tracking purposes. Throughout the screening process, articles that did not meet the exclusion criteria (ie. literature outside the field of healthcare, studies published in languages other than English, and grey literature) or did not resonate with the review question were excluded during the screening process.

**Quality appraisal**

The six articles retained from the initial search and screening process were evaluated by myself in consultation with the supervisory team against the relevant Critical Appraisal Skills Program (CASP) tools (Singh, 2013). Articles were assessed for their quality and rigor against a checklist that addressed each article’s validity, logic and credibility. An example of the checklist questionnaire is presented below (Table 1).

<table>
<thead>
<tr>
<th>Table 1: An example of the Critical Appraisal Skills Program (CASP) checklist questions</th>
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<tbody>
<tr>
<td><strong>CASP Questions</strong></td>
</tr>
<tr>
<td>1. Was there a clear statement of the aims of the research?</td>
</tr>
<tr>
<td>2. Is the methodology appropriate?</td>
</tr>
<tr>
<td>3. Was the research design appropriate to address the aims of the research?</td>
</tr>
<tr>
<td>4. Was the recruitment strategy appropriate to the aims of the research?</td>
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</tbody>
</table>
Quality appraisal outcomes

The search and screening process using the CASP tool resulted in two studies deemed suitable for inclusion in the review (Bayes, Fenwick, & Jennings, 2016; Phillips et al., 2015). This confirmed a scarcity of published literature relevant to the preliminary review question and midwifery context. Therefore, following discussion with the supervisory team the search string was modified to include the terms: “nurse”, “doctor”, “obstetrician” and “maternity care provider”. This action was supported by Fairbrother, Cashin, Mekki, Graham, and McCormack (2015) who suggest that although midwives practice a unique healthcare service, the philosophical underpinnings and practice of nursing and allied health show similar values in best practice care and support of EBP. A secondary web-based search using the initial databases (CINAHL, Medline, MIDIRS and Implementation Science Journal) was conducted, however no further articles were sourced. Presented below is the final search process and outcome (Figure 2).
Figure 2:  A flow diagram of the search process

Thematic analysis of the data

Thematic analysis of the literature was thought the most suitable method for data extraction as this approach permits the reviewer to reflect and compare data sets from different sources, making it the preferred method for conducting a preliminary review (Whittemore & Knafl, 2005). The first included paper, authored by Bayes et al. (2016), reported on the applicability of an established IS tool (the UK NHS Spread and Adopt Tool), to assess Australian midwifery contexts readiness for practice change. The tool was trialed by 22 midwives who had each implemented an evidence-based intervention in their workplace. Focus groups were used to collect data from participants on the suitability of the tool for midwifery contexts. Three themes emerged from data analysis: A web-based tool can be problematic; wording of the tool is not user-friendly or appropriate for midwifery contexts; and although novel the tool was useful for initiating practice change. Study limitations included the small sample size and the representation of midwives from only two states of Australia. Bayes et al. (2016) concluded that implementation resources may provide guidance for midwives wanting to implement practice change, however recommended that existing IS resources be re-tested to establish their suitability for midwifery contexts.

The second of the two papers included in this review was by Phillips et al. (2015), who reported on a qualitative study exploring the usability of the
Theoretical Domains Framework (TDF) (Cane, O’Connor, & Michie, 2012) in clinical environments. Set in Australia, participants were recruited from a variety of healthcare disciplines (for example: doctors, nurses, occupational therapists and pharmacists), having used the TDF on various implementation projects. Participants were interviewed about the TDF’s relevance and usability in practice. Three themes were identified during data analysis: reasons for use of the TDF (facilitated increased user confidence, offered a broader perspective and theoretical underpinnings); challenges to the operationalisation of the TDF (lack of time and resources, unfamiliarity of the TDF’s framework); and thoughts on future use in clinical settings (modification to the framework and clinician training to guide the TDF’s use in practice). Study limitations included disclosure that participants were interviewed by their peers and the study did not consider or report explicitly on what aspects of the TDF were most useful. Overall, although deemed useful the TDF’s usability in practice settings remained ambiguous, thus further research was recommended to confirm the TDF’s suitability in practice.

Findings

A total of 32 interpretive findings were extracted from the two papers included in the preliminary review. These findings were grouped into six sub-categories, which were collapsed into two major categories that together represent what is known to date about midwives’ use of implementation resources in clinical areas (Table 2).

<table>
<thead>
<tr>
<th>Interpretive findings</th>
<th>Sub-categories</th>
<th>Major categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Access challenges’</td>
<td>(1) A web-based tool can be problematic</td>
<td>(1) Implementation tools are unfamiliar, complex and ‘not quite right’ for midwifery contexts</td>
</tr>
<tr>
<td>‘Inefficient internet connectivity’</td>
<td></td>
<td></td>
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<tr>
<td>‘Barriers to workplace internet connectivity’</td>
<td></td>
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<tr>
<td>‘I just could not get into it [the online platform]’</td>
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<tr>
<td>‘We could not progress to the tool’</td>
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<tr>
<td>‘The tool was unapproachable’</td>
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<tr>
<td>‘Tool was too generic for midwifery’</td>
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<td></td>
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<tr>
<td>‘Lacked functions specific to midwifery’</td>
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<tr>
<td>Interpretive findings</td>
<td>Sub-categories</td>
<td>Major categories</td>
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<td>-------------------------------------------------------------------------------------</td>
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<tr>
<td>• ‘I don’t really understand it [the tool]...the language is different’</td>
<td>(2) Language is not user-friendly or appropriate for midwifery contexts</td>
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<tr>
<td>• ‘It’s all a bit open to interpretation’</td>
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<tr>
<td>• ‘Perceived overlapping of functions’</td>
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<tr>
<td>• ‘Hard to tease out what I wanted it [the tool] to do’</td>
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<tr>
<td>• ‘Difficult to analyse the effectiveness of the tool’</td>
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<tr>
<td>• ‘The questions are very generalised’</td>
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<td></td>
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<tr>
<td>• ‘The language complex, not resonating with midwifery’</td>
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<tr>
<td>• ‘It’s time consuming and labour intensive’</td>
<td>(3) Implementation Science (IS) tools are unfamiliar and complex</td>
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<tr>
<td>• ‘I just didn’t have time to use it in practice’</td>
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<tr>
<td>• ‘It took a little while to get my head around it’</td>
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<tr>
<td>• ‘Repetitive’</td>
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<td></td>
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<tr>
<td>• ‘Unfamiliar and complex language’</td>
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<tr>
<td>• ‘I had to concentrate hard to make meaning of the statements’</td>
<td>(4) Implementation Science (IS) tools are novel but useful</td>
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<tr>
<td>• ‘The tool was valuable with varied capabilities’</td>
<td>(2) Implementation Science (IS) tools are useful and systematic, with broad perspectives and theoretical underpinnings</td>
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<tr>
<td>• ‘It’s very useful for making you think about things you hadn’t previously considered’</td>
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<tr>
<td>• ‘The tool was useful, but not quite right’</td>
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<tr>
<td>• ‘The tool highlighted areas we had not thought of’</td>
<td>(5) Support for use</td>
<td></td>
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<tr>
<td>• ‘Applied a systematic approach to problem solving’</td>
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<tr>
<td>• ‘A comprehensive, theory driven process’</td>
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<tr>
<td>• ‘The tool gave me confidence’</td>
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<tr>
<td>• ‘The tool’s broad application has capabilities across a variety of settings’</td>
<td>(6) Future application of Implementation Science (IS) tools</td>
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<tr>
<td>• ‘Flexible and possibly transferrable’</td>
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<tr>
<td>• ‘[The tool] broadened my understanding of how to implement an intervention’</td>
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</table>
Major category one: Implementation Science (IS) tools are unfamiliar, complex and ‘not quite right’ for midwifery contexts

The first major category is labelled “Implementation tools are unfamiliar, complex and ‘not quite right’ for midwifery”. The findings described the challenges midwives and other healthcare providers experienced when using implementation tools derived from IS to initiate practice change. Feelings of frustration and confusion relating to the unfamiliar language and complex design of IS tools were commonly expressed by participants, who struggled to apply IS tools to their practice change projects (Phillips et al., 2015). Other operationalisation challenges included IS tools being reported as too generic, time consuming and resource intensive for midwives working in practice environments (Bayes et al., 2016). One participant voiced “the wording needs to be simplified...it’s really hard to decipher the meaning of the statements and narrow them down to a midwifery focus” (p. 242). Another midwife participant commented on the applicability of an IS tool she had trialed, stating “it’s not specific enough for us...or user-friendly” (p. 242).

Sub-category 1: A web-based tool can be problematic

This sub-category describes the challenges voiced by participants when using web-based resources. Particularly, this highlighted the challenges experienced by geographically isolated midwives, whose internet connectivity was poor or unreliable, as one participant reported the difficulty she experienced: “there was no opportunity to save your answers part way through” (Bayes et al., 2016, p. 242). Another participant described her frustration with website “firewalls”, which limited her access to online resources at work: “we could not progress to the tool in clinical areas” (p. 242). Similarly, other healthcare providers commented on technical issues, feeling challenged by the language and perceived repetitiveness of web-based resources, as one participant commented “there was a huge over-lap
between functions, which made it repetitive and far too complicated for what I was trying to do” (Phillips et al., 2015, p. 143). Also noted by another participant was the unsuitability of online resources in practice settings: “I would have loved to use it, but we don’t have enough work stations with computers to access online resource” (Phillips et al., 2015, p. 143). However, these issues were largely resolved when participants accessed web-based resources in their own time from personal computers (Bayes et al., 2016).

Sub-category 2: Language is not user-friendly or appropriate for midwifery contexts

The majority of participants viewed IS tools as too generic for midwifery contexts (Bayes et al., 2016; Phillips et al., 2015). One participant reported the language to be “very generalised and did not reflect midwives or midwifery” (Bayes et al., 2016, p. 242). Unfamiliar and complex language were challenges for others also, as one participant commented “the language is a bit different to what I’m used to” (Phillips et al., 2015, p. 142).

Sub-category 3: Implementation Science (IS) tools are unfamiliar and complex

Several challenges were identified from the findings reported in this category. Inadequate time and a lack of resources were issues identified by Phillips et al. (2015), as illustrated by one participant who stated “I would have loved to have used it [the TDF]...but I just didn’t have the time to do that” (p. 142). The functionality of using IS tools in practice was also reported on by another participant, who stated “there was considerable overlapping between the functions, which made it too complicated...and unwieldy” (p. 142). Other challenges included the complexity of IS tools and their functionality in practice: “I don’t really understand it...it wasn’t clear to me how the domains should be interpreted or used” (p. 143). The generic design of IS tools also caused confusion for several participants, who stated: “it’s all a bit open to interpretation” and “[it depends] on what lens you’re looking through” (p. 144). In the study by Bayes et al. (2016), participants reported challenges when assessing the effectiveness of IS tools and their capacity to evaluate outcomes. This was exemplified by one participant who
voiced she was “getting good results…but it was hard to know whether that was a result of the tool or our efforts” (p. 243). Notably, the IS tools reported on in this review were derived from non-midwifery backgrounds and were both deemed too generic and not appropriate for midwifery contexts.

Major category two: Implementation Science (IS) tools are useful and systematic, with broad perspectives and theoretical underpinnings

The majority of participants were of the opinion that IS tools improved the uptake of new interventions and were useful to clinicians wanting to initiate practice change in clinical areas (Bayes et al., 2016; Phillips et al., 2015). Similarly, participants expressed an increase in confidence and knowledge regarding implementation processes, reporting IS tools provided a comprehensive framework for implementing EBP in the workplace (Bayes et al., 2016; Phillips et al., 2015). Further, IS tools were able to highlight areas not previously thought of and provided a systematic process to implementing change in practice environments (Phillips et al., 2015).

**Sub-category 4: Implementation Science (IS) tools are novel but useful**

Authors of both papers included in this review reported that despite challenges, all participants were enthusiastic and reported IS tools to be useful when applied to clinical innovation projects (Bayes et al., 2016; Phillips et al., 2015). This was attributed to the broad perspectives and flexibility the tools offered when applied to various practice change projects.

**Sub-category 5: Support for use**

Both studies reported participants’ expressed an increase in confidence when undertaking projects using resources from the field of IS (Bayes et al., 2016; Phillips et al., 2015). This was exemplified by one midwife participant, who stated “the tool highlighted areas we just hadn’t thought of” (Bayes et al., 2016, p. 243). Another benefit identified by one participant was the perceived benefit of using an IS tool underpinned by theory, as she commented “theory gave substance to the project...and it seemed more credible” (Phillips et al., 2015, p. 142). These were
considered positive features of IS tools and were consistent findings between the two papers included in this review.

**Sub-category 6: Future application of Implementation Science (IS) tools**

Both papers included in this review indicated all participants would use an IS tool on future implementation projects, with a number of participants offering strategies to resolve some of the challenges raised (Bayes et al., 2016, p. 243). Collectively, participants from both reviews agreed that consideration for time, resources and the applicability of IS tools in clinical areas would facilitate their use in practice. Notably, both articles highlighted a lack of implementation resources specific to midwifery contexts. Bayes et al. (2016) addressed this issue, suggesting midwives may benefit from a midwifery-specific evidence implementation tool, designed for midwifery purposes and the varied contexts in which midwives work.

**Discussion**

This review explored the literature concerning midwives experience of using IS tools to implement a sustained practice change in clinical areas. Following the search and screening process, two articles were assessed to be relevant for inclusion. Two major categories emerged during data analysis that together characterise the experiences of participants who had employed IS tools to implement a clinical innovation into practice environments. Although a systematic and thorough search of the literature was performed, only one article pertinent to midwives experience of using IS tools was identified (Bayes et al., 2016). The paucity of published literature led me to question how midwives currently implement evidence into practice, given publications relating to the review topic were near non-existent. Notably, the review was broadened to include other healthcare professions, however no additional literature was sourced.

The first synthesised finding “Implementation Science (IS) tools are unfamiliar, complex and ‘not quite right’ for midwifery contexts” provides valuable insight into the perceived unfamiliarity of IS tools in midwifery and the challenges midwives’ experience when applying IS tools to practice change projects in clinical areas. In their study investigating healthcare providers use of the TDF, Phillips et al. (2015)
found participants felt disadvantaged by having limited knowledge of implementation processes and described the language of existing IS tools to be “unfamiliar and complex” (p. 142). Other challenges voiced by participants highlight the unsuitability of existing implementation tools, describing them to be “unnecessarily complicated and too resource intensive in practice environments” (p. 144). These findings are supported by Spooner, Aitken, and Chaboyer (2018), who reported multiple shortcomings with the Knowledge-to-Action (KTA) framework, an IS tool offering a structured approach to knowledge translation in practice. Participants from various disciplines made comment that the KTA framework “lacked sufficient guidance to troubleshoot issues that arose during the implementation and evaluation process”, criticising the tool for being “too generic and lacking capabilities specific to the needs of nurses in practice environments” (p. 7).

The second synthesised finding “Implementation Science (IS) tools are useful and systematic, with broad perspectives and theoretical underpinnings” confirms that despite the implementation challenges experienced by participants, resources that facilitate evidence implementation are considered valuable by midwives and other healthcare providers. This is exemplified in a project undertaken by Australian midwives who reported on the value of using an IS tool to ensure a systematic approach to knowledge translation (Fenwick, Toohill, Slavin, Creedy, & Gamble, 2018). Participants in Fenwick and colleagues’ study expressed “a significant increase in knowledge, skill level and confidence” (p. 8) when using an adapted IS framework to guide the implementation process. Likewise, a systematic review of the Consolidated Framework for Implementation Research (CFIR) (Kirk et al., 2016), reported healthcare providers expressed increased confidence and improved project outcomes when implementing practice change using resources informed by theory.

**Identification of the knowledge gap**

The aim of conducting the preliminary review was to explore what is known about midwives’ experience of using IS tools to initiate evidence-based change in
midwifery contexts. This was achieved, although further investigation was conducted to obtain a deeper understanding of what is known about midwives’ use of latest evidence in clinical practice. The outcomes of this research were accepted for publication in 2019 in the Journal of Clinical Nursing, titled: “Midwives’ use of best available evidence in practice: An integrative review”. Although the selected Journal is not specifically a midwifery journal it is known in the profession for publishing content that concerns or is highly relevant to midwifery; it is also an international journal and takes account of the fact that in many parts of the world, midwives are known as nurses. A full-text version of the paper is provided below.
Midwives’ use of best available evidence in practice: An integrative review

Annemarie De Leo PhD Candidate, RM, RN, Midwifery Lecturer1 | Sara Bayes PhD, RM, RN, Associate Professor, Director1 | Sadie Geraghty PhD, RM, RN, Associate Professor, Director2 | Janice Butt RM, RN, ADM, PGCEA, MA, Coordinator3

1Edith Cowan University, Perth, WA, Australia
2Charles Darwin University, Darwin, NT, Australia
3King Edward Memorial Hospital, Perth, WA, Australia

Abstract

Aims and objectives: To synthesise international research that relates to midwives’ use of best available evidence in practice settings and identify key issues relating to the translation of latest evidence into everyday maternity care.

Background: Midwifery is a research-informed profession. However, a gap persists in the translation of best available evidence into practice settings, compromising gold standard maternity care and delaying the translation of new knowledge into everyday practice.

Design: A five-step integrative review approach, based on a series of articles published by the Joanna Briggs Institute (JBI) for conducting systematic reviews, was used to facilitate development of a search strategy, selection criteria and quality appraisal process, and the extraction and synthesis of data to inform an integrative review.

Methods: The databases CINAHL, MEDLINE, Web of Science, Implementation Science Journal and Scopus were searched for relevant articles. The screening and quality appraisal process complied with the PRISMA 2009 checklist. Narrative analysis was used to develop sub-categories and dimensions from the data, which were then synthesised to form two major categories that together answer the review question.

Results: The six articles reviewed report on midwives’ use of best available evidence in Australia, the UK and Asia. Two major categories emerged that confirm that although midwifery values evidence-based practice (EBP), evidence-informed maternity care is not always employed in clinical settings. Additionally, closure of the evidence-to-practice gap in maternity care requires a multidimensional approach.

Conclusion: Collaborative partnerships between midwives and researchers are necessary to initiate strategies that support midwives’ efforts to facilitate the timely movement of best available evidence into practice.

Relevance to clinical practice: Understanding midwives’ use of best available evidence in practice will direct future efforts towards the development of mechanisms that facilitate the timely uptake of latest evidence by all maternity care providers working in clinical settings.
1 | INTRODUCTION

Evidence-based practice (EBP) is embraced internationally as the ideal approach to improving healthcare outcomes for consumers, using the best available evidence to inform policy and the practice of persons responsible for providing care (Miller et al., 2016). Within maternity services, EBP has been recognised as crucial for reducing the use of non-evidence-based information, which has been associated with the over-medicalisation of normal pregnancy and birth (Miller et al., 2016). However, as research continues to provide clinicians with new evidence to inform practice, the timely uptake of best available evidence in clinical contexts remains inconsistent (Hines, Kynoch, Munday, & McNair, 2017). This creates a considerable challenge for midwives, like other care providers, who are well aware of their obligation to practice evidence-based care, but report difficulty implementing latest evidence into everyday practice (Bayes, Jiggins, Whitehead, & De Leo, 2019; McCoy, Stamatakis, Jacobs, Tabak, & Brownson, 2016).

Using best available evidence to inform policy and practice in midwifery is explicitly detailed in midwifery governance documents, for example the Australian Midwifery Standards for Practice (NMBA, 2018). However, the pathway from evidence to practice is complex, and where latest evidence is recognised but not used in everyday care, a "gap" in translation has been conceptualised. The gap represents not only the delayed transfer of evidence into clinical contexts, but also the gap between knowledge producers and knowledge users (Rycroft-Malone et al., 2016). A number of remedial approaches have been proposed to address this phenomenon in recent years, which are largely conceived from the fields of psychology and implementation science (S) (Caglioni, Berta, Kothari, Boyko, & Urry, 2016; Graham, Kothari, & McCutcheon, 2018; Tucker, 2017). However, there remains limited research on the use of evidence-based information by midwives in maternity contexts.

1.1 | Aims

The aims of this review were to present a synthesised summary of the findings from previous research that relates to midwives' use of best available evidence in practice settings and identify key issues relating to the phenomenon of interest.

2 | METHODS

A systematic approach was used to facilitate development of a search strategy, selection and quality appraisal of studies. This was based on the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) checklist (Moher, Liberati, Tetzlaff, & Altman, 2009; see Appendix SI) and a series of articles published by the Joanna Briggs Institute (JBI) outlining a step-by-step approach to conducting systematic reviews (Aromatari & Pearson, 2014; Aromatari & Rittano, 2014; Munn, Tufanaru, & Aromatari, 2014; Porritt, Gomersall, & Lockwood, 2014; Robertson-Malt, 2014; Stern, Jordan, & McArthur, 2014).

2.1 | Search strategy

The purpose of this search strategy was to find published literature relevant to the topic of interest. This involved the formulation of a review question guided by the PICO criteria ("Population", "Phenomenon of Interest" and "Context") for qualitative studies. The question developed for this review was "Do midwives (P) always use best available evidence (I) in practice (C)?" Selection criteria were established to determine which articles were eligible for review. This included original qualitative research and case studies, literature published between the years 2009-2019 and articles printed in English that were available in full text. Papers were excluded if

| TABLE 1 Logic Grid: "Do midwives always use best available evidence in practice?"
<table>
<thead>
<tr>
<th>Population (P)</th>
<th>Phenomenon of Interest (I)</th>
<th>Context (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwife*</td>
<td>Evidence-based practice</td>
<td>Practice setting</td>
</tr>
<tr>
<td>Nurse midwife*</td>
<td>Evidence-based health care</td>
<td>&quot;Maternity care&quot;</td>
</tr>
<tr>
<td>&quot;obstetric nurse&quot;</td>
<td>EBP</td>
<td>Maternity unit</td>
</tr>
<tr>
<td>&quot;best practice&quot;</td>
<td>EBP</td>
<td>Maternity setting</td>
</tr>
<tr>
<td>&quot;truncated evidence&quot;</td>
<td>Midwifery*</td>
<td>Maternity care</td>
</tr>
<tr>
<td>Evidence based health*</td>
<td>Clinical setting</td>
<td>Hospital</td>
</tr>
</tbody>
</table>
they did not include midwifery participants, were not relevant to the review question or did not meet the selection criteria.

A search strategy was derived from keywords using a logic grid (Table 1) that were then combined to form a search string using the Boolean operators "AND" and "OR" (Table 2).

2.2 | Quality appraisal

The process of study selection and quality appraisal was guided by the PRISMA framework (Moher et al., 2009) and included entering the search string into the electronic databases Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE, Web of Science, Implementation Science Journal and Scopus. The selection criteria were then applied to focus the search on the review question and agreed criteria, which resulted in 133 papers (n = 133). These were screened by journal, title and abstract to establish the success of the search string and also eliminate irrelevant articles (n = 109). From this, a manual search for relevant publications by title and abstract in key midwifery journals (e.g. "Midwifery" and "Women and Birth") was conducted, which retrieved four additional papers (n = 4). Eighty-two papers (n = 82) were retained for full-text review based on relevance to the review question and adherence to selection criteria. This process was conducted by authors one and two (AD and SB).

2.3 | Quality appraisal outcomes

A total of six papers (n = 6) were considered suitable for quality appraisal and were assessed against the JBI Critical Appraisal checklist for both cross-sectional studies and qualitative research papers (Joanna Briggs Institute [JBI], 2014). This was conducted by all three authors independently. No papers were excluded following the appraisal process (n = 0). Therefore, a total of six studies (n = 6) were included in the review. These comprised of one qualitative research paper and five reporting cross-sectional studies (Table 3). Collectively, the included papers report on midwives’ use of best available evidence in Australia, the UK and Asia. The search and screening process is presented in Figure 1, adapted from the PRISMA flow chart for reporting the review process (Liberati et al., 2009).

2.4 | Data abstraction and synthesis

Data abstraction from the literature included in this review was guided by the approach described by Munn et al. (2014), where the findings of each study and their interpretation were extracted and then organised into sub-categories and dimensions. These were then merged to form major categories agreed by all authors (AD, SB, SG and JB), which were used to synthesise information that represent what is known to date about midwives’ use of best available evidence in practice.

3 | RESULTS

An extensive search of the literature was conducted between January-March 2019, guided by the review question “Do midwives always use best available evidence in practice?” The initial search string (Table 2) retrieved 1,355 articles. The selection criteria were then applied, which excluded 1,222 papers. The resultant 133 papers were retained for screening by journal, title and abstract. Following this, 28 articles remained for detailed review of full text based on relevance to the review question and adherence to selection criteria. Six articles were selected for critical appraisal using the JBI Critical Appraisal checklist for both cross-sectional studies and qualitative research papers (Joanna Briggs Institute [JBI], 2014), and quality appraisal was conducted by all authors independently. All papers scored 7 or above on the Critical Appraisal checklist (the highest possible score being 10), so all appraised articles were retained for inclusion in this review. A narrative summary of the papers included in this review is presented below.

3.1 | Narrative summary of included studies

The first included paper, authored by Bayes et al. (2019), reported on the experiences of Australian change-leader midwives’ (n = 16) implementing evidence-based innovations in midwifery practice settings. Using Glaserian grounded theory, the paper explored change-helping or change-hindering factors, which were compared to the seminal Consolidated Framework for Implementation Research (CFIR), a tool developed within the context of Implementation Science (IS) to identify environmental factors that influence the use and implementation of change initiatives. The study comprised change-leader midwives who had tried to initiate a practice innovation in their workplace. Participants were interviewed via Skype or telephone by single in-depth interviews guided by semi-structured questions. Findings were analysed and developed into sub-categories, which were then formed into major categories that described the phenomenon of interest.

The second paper included was a descriptive cross-sectional study reporting Australian midwives’ (n = 297) use of evidence-based guidelines in clinical practice. Authored by Toolhill, Sidebotham, Gambling, Fenwick, and Creedy (2017), data were collected in a four-sectioned survey. The first section collected demographic and personal information, and the second comprised a tool developed by the authors to determine midwives’ perceptions of barriers to using best available evidence in practice. The third section asked respondents to use the Adaptive Evidence-Based Practice Beliefs (A-EBP-B) Scale to measure midwives’ confidence to implement evidence in practice, and in the final section, participants were provided with a text box to make additional comments.
29

**TABLE 3** Synthesis of sub-categories and major synthesised findings

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Major synthesised findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Midwifery values EBP and recognise non-EBP is costly</td>
<td>1. Although midwifery values EBP and non-EBP is costly, best available evidence is not always used in practice</td>
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<tr>
<td>2. Best available evidence is not always used in practice</td>
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<tr>
<td>3. Factors preventing EBP are varied</td>
<td></td>
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<tr>
<td>dimension 3.1: “there is no reason to change”</td>
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<tr>
<td>dimension 3.2: “change is too hard”</td>
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<td>dimension 3.3: Time is an issue</td>
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<td>dimension 3.4: “Budget constraints are a limiting factor”</td>
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<tr>
<td>4. Closure of the evidence-practice gap in maternity care requires a multidimensional approach</td>
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<tr>
<td>5. Attitudes towards EBP influence evidence-based care</td>
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<td>6. Midwives do not have the confidence or skills to lead change implementation</td>
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</table>

**Figure 1** “Do midwives always use best available evidence in practice?”

regarding the usefulness of normal birth guidelines. The findings indicated that although midwives considered they had sufficient knowledge and skills to practice evidence-based care, they reported insufficient time, lack of collegial support and barriers from administrative processes to hamper their use of latest evidence in practice settings. Significantly, most participants reported feeling concerned that using latest evidence would result in midwives being blamed for adverse maternal or neonatal outcomes. Toolhill and team concluded that lack of organisational processes and a risk-adverse culture hinder the use of evidence-based guidelines and the uptake of latest evidence in practice settings.

The third paper by Veeranah (2016a) examined the use of evidence-based information by nurses and midwives in a cross-sectional online survey. The sample included nursing and midwifery diplomas and graduates (n = 172) from a single university in the UK and was conducted between June–December 2013. The web-based software Qualtrics™ was used to develop the survey, which comprised of five sections: (a) participant professional profiles, (b) attitudes towards EBP, (c) use of latest evidence to inform clinical practice, (d) accessibility to resources and (e) skills to implement and EBP. The study found participants displayed positive attitudes towards the use of evidence-based information in practice settings. However, factors hindering
### TABLE 4 Papers retained for inclusion

<table>
<thead>
<tr>
<th>Reviewed paper #</th>
<th>Year and journal</th>
<th>Title</th>
<th>Methods</th>
<th>Key findings</th>
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<tbody>
<tr>
<td>Juggins, E</td>
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<td>Whitehead, L</td>
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<td>De Leo, A</td>
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<tr>
<td>2. Toohill, J</td>
<td>Women and Birth</td>
<td>Factors influencing midwives' use of an evidence-based normal birth</td>
<td>Descriptive cross-sectional study</td>
<td>Organisational characteristics influence midwives' use of latest evidence in practice. Implementation of EBP remains a challenge. Interdisciplinary collaboration is needed to improve the uptake of EBP.</td>
</tr>
<tr>
<td>Sidebotham, M</td>
<td>(2017)</td>
<td>guideline</td>
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<td>Gemble, J</td>
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<td>Fenwick, J</td>
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<tr>
<td>Creedy, D</td>
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<tr>
<td>3. Veeramah, V</td>
<td>Journal of Clinical</td>
<td>The use of evidence-based information by nurses and midwives to inform practice</td>
<td>Cross-sectional online survey</td>
<td>Midwives have positive attitudes towards EBP. EBP is not consistent in practice settings. Care providers report difficulty interpreting the quality and technical language of research reports.</td>
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<td>Nursing (2016)</td>
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<td>4. Fairbrother, G</td>
<td>Collegion (2016)</td>
<td>Evidence based nursing and midwifery practice in a regional Australian healthcare setting: Behaviours, skills and barriers</td>
<td>Cross-sectional descriptive survey</td>
<td>Midwives lack the confidence to translate latest evidence into practice. Workplace culture is not always receptive to change. Interdisciplinary support is needed to facilitate the practice of evidence-informed care.</td>
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<tr>
<td>Cashin, A</td>
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<td>Conway, R</td>
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<td>Symes, A</td>
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<td>Graham, I</td>
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<tr>
<td>5. Pazandeh, F</td>
<td>Midwifery (2015)</td>
<td>An evaluation of the quality of care for women with low risk pregnancy: The use evidence-based practice during labour and childbirth in four public hospitals in Tehran</td>
<td>Descriptive evaluation study</td>
<td>Closing the evidence-practice gap demands a multidimensional approach. The cost of non-EBP is considerable and difficult to justify. Midwives can be the change leaders of EBP.</td>
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<td>Huss, R</td>
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<td>Hirst, J</td>
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<td>House, A</td>
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<tr>
<td>Baghian, A</td>
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<tr>
<td>6. Heydari, A,</td>
<td>Worldviews on Evidence-based Learning (2014)</td>
<td>A study of Iranian Nurses' and midwives' knowledge, attitudes and implementation Evidence-Based Practice: the time for change has arrived</td>
<td>Descriptive cross-sectional study</td>
<td>Midwives require resources and organisational support to lead change initiatives. There is need to promote a climate of change in healthcare organisations.</td>
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<tr>
<td>Mozdar, S</td>
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<td>Ranjbar, H</td>
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<tr>
<td>Scarlock-Evans, L</td>
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</table>
EBP were noted to include lack of resources (e.g., computer software and Internet access) to search for latest evidence and insufficient time to research during working hours. Additionally, perceived resistance from colleagues and managers was also considered to be a significant barrier to using latest evidence in practice. The author concluded that using evidence-based information to inform practice is fundamental and providing time away from bedside responsibilities may improve midwives and nurses capacity to search and apply research findings to practice.

The fourth paper, authored by Fairbrother, Cashin, Conway, Symes, and Graham (2016), reported on a descriptive cross-sectional study exploring the skill levels, behaviours and barriers of nurses and midwives in relation to EBP. Participants (n = 169) completed an online questionnaire comprising five domains: (a) practice knowledge bases, (b) barriers to finding and reviewing evidence, (c) barriers to changing practice, (d) support to implement change and (e) EBP skills. Descriptive analysis was conducted using SPSS software. The findings reported low levels of acceptance and understanding of evidence-based knowledge, and inaccessibility to research material. Additionally, time-related barriers were reported by participants to be a significant issue in preventing the uptake of latest evidence into practice settings. The authors concluded that knowledge not underpinned by best available evidence remains the most common basis for nursing and midwifery practice decisions. Recommendations for capacity building strategies such as research mentorship and ongoing education in evidence interpretation were considered valuable to improving both midwives and nurses confidence to incorporate best available evidence in clinical environments.

The fifth paper evaluated the provision of care provided to women (n = 24) during normal labour and childbirth across four public hospitals in Tehran. Pazandeh, Huss, Hirst, House, and Baghban (2015) investigated the quality of intrapartum care provided by midwives and other maternity staff, comparing clinical care to current EBP guidelines. Additionally, postpartum women (n = 100) were interviewed about their care during labour and childbirth prior to discharge. Findings described the use of non-evidence-based practices including routine augmentation, induction of labour and application of fundal pressure during the second stage of labour and routine episiotomy. Other clinical practices such as facilitating removal of the placenta during the third stage of labour, immediate skin-to-skin contact postpartum between mother and newborn, and early initiation of breastfeeding were observed to be aligned with latest evidence. Authors concluded that closing the evidence-to-practice gap remains challenging for maternity care providers. Recommendations for further research into strategies and solutions specific to care provider needs were suggested to facilitate the use of latest evidence in practice. Notably, opinion leaders and experienced midwives were emphasised to have a key role in changing care provider behaviour.

The final study by Heydari, Mazloom, Ranjar, and Scurlock-Evans (2014) reported on the evidence-based knowledge, attitude and practice of nurses and midwives regarding clinical decision-making and implementation of best available evidence. In Iran, a descriptive cross-sectional study was conducted on nurses and midwives (n = 240), using two questionnaires, one collecting demographic information and the second examining participant’s knowledge, skills, attitudes and use of EBP. SPSS software was used to analyse the data collected. Major findings identified that although most nurses and midwives express moderately positive attitudes towards EBP, sub-optimal use of evidence-based care in clinical settings was reported. Organisational culture was also influential to the attitudes and practice of EBP amongst participants, emphasising the need for EBP training and education in clinical settings. Recommendations were made to promote future collaboration between clinical practitioners, academic centres and researchers to improve the use of evidence-based information in practice. Table 4 presents a summary of the papers retained for inclusion in this review.

3.2 | Findings

Sixty findings and interpretative statements were extracted from the six articles selected for inclusion in this review. From these, six sub-categories emerged that were then collapsed into two major synthesised categories. One sub-category, number four, is four-dimensional. Collectively, the findings confirm that using best available evidence in practice is challenging for midwives and is subsequently not always applied to everyday maternity care. This demonstrates the evidence-to-practice gap persists in midwifery and that resolution of this issue requires interdisciplinary collaboration and timely actions.

3.2.1 | Major synthesised category 1: Although midwifery values EBP and non-EBP is costly, best available evidence is not always used

This synthesised finding was developed from two sub-categories (numbers one and two) that emerged from 19 findings and reflects the sub-optimal use of best available evidence in practice, despite midwives’ value of EBP and the costly outcomes of non-evidence-based care on maternity services. For the majority of participants, the philosophy of midwifery care aligns with promoting EBP; however, midwives recognise that using latest evidence in practice is sub-optimal, which can result in midwifery care that is harmful to the well-being of women and neonates, and difficult to justify.

3.2.2 | Major synthesised category 2: Factors preventing EBP are varied, and closure of the evidence–practice gap in maternity care requires a multidimensional approach

Four categories, which were derived from four sub-categories (numbers three, four, five and six) and 41 findings, merged to develop this synthesised finding. While various factors limit midwives efforts to use best available evidence in practice, organisational characteristics such as workplace culture, interdisciplinary collaboration and attitudes towards EBP have been recognised as crucial drivers of change. A multidimensional approach is needed to resolve the existing evidence-to-practice gap in maternity care, with midwives’
key stakeholders in closing the gap and changing care provider behaviours.

3.2.3 | Sub-category 1: Midwifery values EBP and recognise non-EBP is costly

This category conveys midwifery’s value of EBP and the cost of non-EBP to both women and health and education organisations. Panaendeh et al. (2015) established that “midwifery aims for [an] evidence based model of care and promotes EBP”, which was consistent with author’s findings in paper two, who suggested “midwives philosophies align with [EBP] guidelines (Toothill et al., 2017, p. 121)”. In paper three, Veeramah (2016a, p. 346) confirmed EBP to be a valuable element of midwifery care and important in the “daily practice of nurses and midwives”. The issue of non-evidentiary-based care was discussed by Toothill et al. (2017), who stated “the cost of [unjustified] interventions are considerable and difficult to justify”. Similarly, midwives reported unnecessary or ineffective care led to “some practices doing more harm than good” (Toothill et al., 2017, p. 417).

3.2.4 | Sub-category 2: Best available evidence is not always used in practice

These data describe midwives’ use of best available evidence in practice. It emerged that midwifery care is not always reflective of EBP, nor used routinely in everyday care of patients (Bayes et al., 2019). It was reported that national (EBP) guidelines were not followed consistently in maternity settings (Panaendeh et al., 2015), which confirmed comments by midwives in paper two, who were aware of (EBP) guidelines, but indicated they were not always used to inform clinical practice (Toothill et al., 2017). Observational examples of non-EBP were reported by Panaendeh and team, such as the use of fundal pressure and routine episiotomy during the second stage of labour. Additionally, authors observed the “the use of partogram[s] to be] irregular...or filled in after delivery” and “induction of labour was observed as routine practice” (Panaendeh et al., 2015, p. 1050). Other midwives acknowledged that correct use of evidence-based practices was sometimes ignored, which resulted in higher rates of intervention during labour. For example, “the majority of women’s labour was checked like high risk women” and “women admitted in early labour were routinely augmented despite being a low risk pregnancy” (Panaendeh et al., 2015, p. 1050).

3.2.5 | Sub-category 3: Factors preventing EBP are varied

This category explored the various factors that hinder midwives’ efforts to adopt EBP in clinical contexts. It was identified that organisational characteristics and practice influence midwives’ use of evidence-based information in practice (Toothill et al., 2017). Additionally, authors Bayes et al. (2019) suggested midwives were obstructed at many levels, which impinged on their ability to use latest evidence in practice. Common barriers to EBP resonated across all papers and included unsupportive workplaces, collegial resistance to change, insufficient time and budget constraints. These were considered additional dimensions of sub-category three and are detailed below.

3.2.6 | Dimension 3.1: there is no reason to change

Unsupportive colleagues were reported as a significant obstacle to using latest evidence in the workplace, as exemplified by one midwife who recalled a colleague’s resistance to implementing a new practice: “why should we change something that we’ve been doing for twelve years?” (Bayes et al., 2019). This feeling was not uncommon, with Veeramah also reporting that midwives recognised their reluctance to change despite new innovations being introduced, preferring to work “the way we have always done it” because it has “worked for us for years” (Veeramah, 2016a, p. 348).

3.2.7 | Dimension 3.2: change is (too) hard

Resistance to change was identified by midwives as another barrier to using evidence-based information. This was explained by midwives in paper two, who described EBP as “difficult” and “challenging” (Toothill et al., 2017, p. 420). It was further confirmed by midwifery change leaders, who discussed the opposition they received when trying to implement latest evidence into practice, with comments such as “change has never been embraced (in my workplace)” and “the resistance to change was phenomenal”, illustrating the hardship midwives faced when trying to lead change initiatives (Bayes et al., 2019, p. 40).

3.2.8 | Dimension 3.3: Time is an issue

Insufficient time was reported to obstruct midwives efforts to use latest evidence in everyday maternity care. One midwife suggested “EBP takes too much time” (Toothill et al., 2017, p. 421), while others reported “we can’t do it because we’re too busy doing the day-to-day production line of work” (Bayes et al., 2019). Other midwives described finding time to source latest evidence during work hours near impossible, as one midwife explained “I don’t have time to locate evidence-based information at work” (Fairbrother et al., 2016, p. 32).

3.2.9 | Dimension 3.4: Budget constraints are a limiting factor

Budget constraints were considered a limiting factor for midwives trying to implement change initiatives that promoted EBP. One midwife declared her efforts to implement a practice change were hampered by her workplace, who “wouldn’t support evidence-based initiatives unless they were resource-neutral” (Bayes et al., 2019, p. 42). Another limiting factor was inadequate funding for “computers with internet services in suitable work spaces” (Toothill et al., 2017, p.
which compromised midwives efforts to access literature and implement evidence-based information into clinical care.

### 3.2.10 | Sub-category 4: Closure of the evidence-practice gap in maternity care requires a multidimensional approach

Closing the evidence-practice gap in maternity care requires collaboration and action between the varied disciplines of maternity care, as findings in this category articulate. Authors Toolhill et al. (2017, p. 421) recommended “interdisciplinary collegial dialogue around implementing best practice” to be essential in promoting the successful implementation of EBP. This resonated with Heydari et al. (2014, p. 329) who recommended researchers try “to work alongside practitioners to better understand the evidence-base needed to support clinical practice”. The norms and values of an organisation were also recognised as “important drivers of practice...and change” (Fairbrother et al., 2016), while paper six suggested interdisciplinary collaboration between maternity care providers was a “crucial component of facilitating the use of evidence-based healthcare” (Heydari et al., 2014, p. 330). Significantly, what resonated was the need to promote a climate of change (Heydari et al., 2014), and experienced midwives were considered key leaders in changing care provider behaviours (Pazandeh et al., 2015).

### 3.2.11 | Sub-category 5: Attitudes towards EBP influence evidence-based care

In this category, midwives’ attitudes towards EBP and their practice of evidence-based care are described. It was reported midwives have “moderately positive” attitudes towards EBP (Pazandeh et al., 2015). Similarly, Veeramah (2016a) suggested midwives who displayed positive attitudes towards EBP were more likely to use evidence-based information to inform their clinical practice. The authors Heydari et al. (2014) identified a correlation between positive attitudes towards EBP and the successful adoption of latest evidence by care providers. This resonated with midwives who acknowledged that team culture was a significant influence in the uptake of latest evidence in clinical areas (Fairbrother et al., 2016). On the contrary, Bayes et al. described the frustration midwives experienced from colleagues, administration and management, who expressed negative attitudes towards the use of EBP (Bayes et al., 2019). Similarly, midwives described the significant medical opposition and negativity from administration and colleagues towards practice change, as one midwife suggested “latest evidence is not always endorsed by management” (Bayes et al., 2019, p. 40).

### 3.2.12 | Sub-category 6: Midwives do not have the confidence or skills to lead change implementation

Findings in this category confirm midwives lack confidence and the skills to lead change initiatives. Midwives reported feeling unsure of how to put evidence into practice, and lacked confidence in judging the quality and implications of research findings in their own practice (Toolhill et al., 2017). This was exemplified by Fairbrother and team, as one midwife voiced “difficulty interpreting statistical information and the technical language of research” (Fairbrother et al., 2016, p. 32). This resonated with statements made by midwives who claimed research reports were “not [made] readily available” or were “too difficult to understand” (Veeramah, 2016a, p. 344). These factors compromised midwives’ efforts to lead change initiatives to employ EBP.

Collectively, the findings and their interpretation from the six articles included in this review describe midwives’ use of best available evidence in practice. Notably, only two papers reported exclusively on midwives experiences of using best available evidence in practice (Bayes et al., 2019; Toolhill et al., 2017), the remaining four papers reported on a range of maternity care providers (e.g., obstetric nurses, midwives and obstetricians), although did not specify the sample size of each discipline. This limited the authors’ ability to establish the absolute number of midwives comprising this review. However, it may be reasonably assumed that findings adequately reflect the midwifery profession’s use of best available evidence in practice.

### 4 | DISCUSSION

This review provides a synthesis of the existing literature relating to midwives’ use of best available evidence in practice. The literature search and screening process resulted in six articles being assessed as suitable for inclusion. Following analysis, six sub-categories were developed, which were merged to form two synthesised findings. The findings together characterise the attitudes and values of midwives towards EBP, and their use of evidence-based information in clinical practice. Also identified are the various factors that impinge on midwives’ use of best available evidence, resulting at times in sub-optimal care and costly outcomes for women, newborns and health services. Although a systematic approach to the search and screening process was conducted, there is always a risk that pertinent studies relevant to the review question have been missed for inclusion. Authors of this review included studies only written in the English language, which may have excluded articles relevant to the topic. However, the six studies identified represent an international cohort of midwives and other maternity care providers from a range of maternity care settings. Therefore, the authors are cautiously confident this review provides an appropriate representation of midwives’ use of best available evidence in practice.

The first major synthesised category “Although midwifery values EBP and non-EBP is costly, best available evidence is not always used”, confirms that although best available evidence is not always used in practice, midwives value the philosophy of EBP and have a crucial role in facilitating the implementation of evidence-based maternity care. Similarly, the principles of EBP are broadly accepted across a range of healthcare providers, including “physicians, nurses, pharmacists and dentists” (Mariano, Souza, Cavaco, & Lopes, 2018, p. 1), although remain underused in practice.
The expectation that new knowledge will translate into everyday practice is commonly misjudged, as care based on tradition or clinical experience, rather than best available evidence, continues to inform the practice of some healthcare providers (Graham et al., 2018; Nagpal, Sachdeva, Sengupta, Bhargava, & Bhartia, 2015). In Australia, mandatory regulations for midwives explicitly state that clinical practice must be informed by high-quality evidence (NHMA, 2018). However, midwives like other care providers often find this difficult to achieve (Veerramah, 2014b).

Research investigating the sub-optimal use of evidence in practice has produced a range of theories and resources from the field of Implementation Science (IS), an area of scientific study promoting the systematic uptake of best available evidence into healthcare practice (Nilsen, 2015). Seminal work in IS has led to expanding interest in knowledge translation and the gap between evidence-to-practice in health care (Casey, O’Leary, & Coghlan, 2018). To facilitate this process, a range of theories and frameworks have been developed to guide the dissemination-implementation process and inform clinicians of the actions needed to expedite the process (Casey, O’Leary, & Coghlan, 2018; Rycroft-Malone, 2016). Arguably, one of the foundational IS instruments is The Consolidated Framework for Implementation Research (CFIR), which was developed to promote implementation theories and define “what works where and why” (Damschroder et al., 2009, p. 1). Consisting of five domains (intervention characteristics, outer setting, inner setting, characteristics of individuals and processes), the framework highlights the barriers and facilitators of the implementation process, provides an implementation pathway and gives meaning to implementation outcomes (Keith, Crosson, O’Malley, Cromp, & Taylor, 2017). The CFIR, along with other IS theories and frameworks, has been considered useful by the nursing profession, although remains underused in midwifery contexts (Bayes, Fenwick, & Jennings, 2016). Breimler, Heckemann, Halfens, and Lohmann (2015) assert the frameworks to be too generic, needing adaptations to improve the usability and value of such tools in clinical contexts. Suggestion for the use of IS tools in midwifery has been considered a pathway to improving the uptake and use of evidence in practice, however, as yet existing tools have not significantly contributed to improving the use of best available evidence in practice (Seers et al., 2018). Further research is needed to ensure midwives are confident and adequately supported to lead change initiatives that promote EBP.

The second synthesised major category “Factors preventing EBP are varied, and closure of the evidence-practice gap in maternity care requires a multidimensional approach”, highlights the challenges of initiating EBP changes and the interdisciplinary approach needed to optimise the use of best available evidence in maternity services. Factors preventing the uptake of EBP are well documented in the literature and often prevent the adoption of best practice by clinicians (Colquhoun, Squires, Kolehmainen, Fraser, & Grimshaw, 2017). In the past, midwives amongst other care providers have identified these factors as “barriers”, such as workplace culture, time constraints, funding and resources and resistance to change (Barwick, 2011; Kennedy, Doig, Hackley, Leslie, & Tillman, 2012). These barriers impinge on clinicians’ efforts to adopt new practice or process initiatives (Bayes et al., 2016; Darling, 2016; Geerligs, Rankin, Shepherd, & Butow, 2018; Weir, Newham, Dunlop, & Bennie, 2019). More recently, recognition of other dimensions influential to the implementation process is reported to include individual mindset, knowledge and values of EBP, clinical competence, confidence and collegial collaboration (Mariani et al., 2018). A study by Colquhoun et al. (2017) established a relationship between the uptake of EBP and four principle variables, competence and professionalism, perceived knowledge of research, perceived knowledge of EBP and access to information databases. All relate to the perceived values of EBP by clinicians, and their confidence and competence to implement best available evidence in workplace environments. Notably, authors emphasised the value of managerial and inter-professional collaboration to optimise implementation outcomes.

This review identified organisational and interdisciplinary co-operation to be crucial components of initiating the implementation and use of best available evidence by midwives. As illustrated by Hespe, Rychnetnik, Peiris, & Harris (2018), organisational co-operation was investigated using a team-based approach to improve the uptake of evidence-based guidelines in three Australian primary healthcare services. Interdisciplinary teams were developed to target specific practice improvements, which saw support from clinicians who identified “working as a team with shared responsibilities” a valuable component of implementing quality improvement (QI) initiatives across all disciplines of health care (Hespe et al., 2018, p. 5).

In maternity contexts, midwives are considered key stakeholders in the regulation of EBP initiatives (Renfrew et al., 2014); however, findings of this review assert that midwives continue to exhibit low levels of confidence and skills in interpreting and translating evidence-based information into clinical practice. This issue is well recognised and documented within nursing literature, as illustrated by Mallon and Brooke (2016, p. 152). who report that for many nurses “lack of knowledge and skills of EBP remain[s] a major concern”. Prominent evidence implementation academic Rycroft-Malone proposes that use of latest evidence in practice contexts is shifting towards a more socially constructed view, where “collaboration, partnership and engagement” between relevant stakeholders (clinicians, managers and policy makers) could see improvements to the uptake and use of evidence in everyday practice (Rycroft-Malone et al., 2016, p. 221). Arguably, incorporating a multidimensional approach to the evidence-to-practice gap in midwifery could see the development of a resource designed specifically for midwifery contexts to support their use of best available evidence in maternity care services.

5 CONCLUSION

The consensus, both nationally and internationally, is that using best available evidence in practice is a priority issue for midwives and other maternity care providers. If the uptake of latest research findings continues to flounder, optimal health outcomes for women and newborns cannot be assured. However, supporting midwives with time away from the bedside, a workplace supportive of EBP and resources to facilitate their efforts may see the provision of evidence-based maternity
care become a reality. To close the persistent evidence-to-practice gap in maternity care, interdisciplinary collaboration and action between health organisations, midwives and researchers are recommended.

6 | RELEVANCE TO CLINICAL PRACTICE

The pathway towards evidence-based maternity care is inextricably linked to the emergence of new and innovative evidence. This review highlights that despite ongoing development and dissemination of high-quality evidence, the translation of latest evidence into clinical practice remains sub-optimal. Despite positive attitudes by midwives and other maternity care providers towards the use of best available evidence, concern regarding insufficient time, administrative barriers and lack of collegial support influence their capacity to implement EBP in clinical settings. The evidence-to-practice gap in maternity services remains a global issue for midwives and demands prompt action from both knowledge producers and knowledge users. Investing in strategies that support collaboration between midwives, researchers and maternity services could see the development of a resource designed by midwifery change leaders to bridge the gap from evidence-to-practice in maternity services.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Study design, literature search and screening process, quality appraisal and manuscript preparation: A. De Leo; literature analysis and manuscript preparation: S. Bayes; study design, quality appraisal and editing: S. Geraghty; quality appraisal and editing: J. Butt.

ORCID

Annamaria De Leo https://orcid.org/0000-0002-0667-5995

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The integrative review presented in this chapter clearly articulates that further research was required to both identify and confirm what is known about midwives’ use of best available evidence in practice. The gap in knowledge identified in this review informed the formulation of the following research question, which the current study was designed to answer:

“What factors and other tools need to be considered in the design of an evidence implementation resource for midwives?”

To answer this question, the following four objectives were pursued:

1. To explore the experience of midwives who have tried to implement new EBPs in clinical areas;
2. To establish the key factors that help or hinder evidence-based change in midwifery contexts;
3. To co-develop the blueprint for an evidence-implementation resource for midwives wanting to initiate evidence-based change in clinical areas; and
4. To begin to address the evidence-to-practice gap problem in Australian maternity services.

Summary

In this chapter I have presented the knowledge gap that the current study was designed to help address in relation to midwives’ use of best available evidence in practice. Discovery of this gap in knowledge occurred through two literature reviews. Together, the reviews of existing literature confirmed that while midwives had been reported to value EBP, best available evidence was not always practiced in everyday midwifery care. A range of factors were found to contribute to this issue, which hindered midwives ability to provide high-quality midwifery services in clinical areas. Significantly, the information in this chapter has highlighted the potential for obsolete maternity care when best available evidence fails to translate into everyday practices.

Also discussed in the chapter is the relative paucity of studies that consider how to improve the current uptake of EBP in clinical areas. While the studies
referenced in this chapter confirm the sub-optimal use of scientific evidence in practice environments, literature pertaining to the processes midwives employ when initiating evidence-based change is scarce. Thus, the evidence-to-practice gap problem in maternity care remains a global issue. This confirms the need for research into processes that support midwives’ efforts to implement EBP, which will add to the existing body of midwifery knowledge and begin to address the persistent evidence-to-practice gap in Australian maternity services.

Having now defined the research question and objectives, the methodology and methods that underpin this study will now be discussed in chapter three. The choice of Action Research methodology and Critical Realism to establish my philosophical position are explained and defended and their value in the current study is described.
Chapter Three: Methodology

Introduction

In chapter two, a preliminary review and an integrative review of the literature were presented. Together these confirmed a knowledge gap exists regarding what factors and other tools midwives require to improve the current uptake of EBP in clinical areas. In this chapter, I present the philosophical and theoretical underpinnings of the research inquiry reported in this thesis. The contrasting paradigms, strengths and limitations of the chosen methodology, my positionality and reflexive approach to the research inquiry, and the methodological rationale are also clearly described.

Critical realism was selected as the philosophical framework for this study and action research was deemed the most suitable methodology. A qualitative approach was employed to ensure the study design resonated with the overarching purpose of the research, while fostering the formation of a meaningful partnership between myself and the participants. The origin and positioning of CR and AR in relation to the contrasting paradigms of positivism, naturalism and realism will now be described, as will justification for the use of a qualitative approach to the study design. Finally, the methodological choice is justified, incorporating a detailed description of AR and its methodological influence on the methods chosen to conduct this study.

The paradigms: Positivism, naturalism and realism

When selecting a philosophical position from which to approach a research question, it is important that a researcher recognises how scientific paradigms, including epistemological and ontological foundations, influence a study and its potential outcomes. Paradigms guide the research process and the choice of methodology, aligning the values of the researcher with the approach taken to the research inquiry (Shannon-Baker, 2016). The term paradigm in relation to science
denotes a worldview (a specific way of perceiving the world) based on the values, philosophical assumptions and common beliefs shared by research communities on what is real, true and most acceptable in the world (Schneider & Whitehead, 2014). The influence of paradigms on research conduct must be acknowledged by the researcher in order to comprehend the theoretical underpinning of methodologies within that paradigm and their own philosophical position in relation to research conduct.

The constituent parts of a paradigm have been described as ontology, epistemology, axiology and methodology (Cluett, 2006). However, inconsistency in these terminologies has led to mixed understanding of their meanings in the context of research (McNiff & Whitehead, 2011). To avoid confusion these terminologies will now be defined. Ontology refers to the study of existence and what is known about the nature of human reality and human interactions in the world (Somekh & Lewin, 2011). Epistemology complements the ontological view and what it means to know, by understanding how knowing can be achieved. The values placed on situations or events in the world represent axiology, or what individuals consider to be true and valuable from understanding the knowledge acquired. Finally, methodology refers to the research approach and what the researcher believes can be known about a phenomenon through methodological inquiry (Proctor, 2013). Fundamentally, the concepts of ontology, epistemology, axiology and methodology are interlinked and influence the structure and outcome of a research inquiry. With these principles in mind it is reasonable to state that numerous worldviews exist on how research is best conducted, however research pertinent to healthcare is positioned predominantly between three key paradigms; positivism, naturalism (also referred to as interpretivism/constructionism) and realism (May & Holmes, 2012).

Positivism originated in the natural sciences and adheres to the view that scientific knowledge can only be achieved through value-free or objective systems of inquiry (Liamputtong, 2017). Positivism adopts a controlled and structured approach to research, maintaining that emotional and other sensory influences have no relevance to how reality is (Cluett, 2006). This style of research is predominantly
quantitative in its approach, focusing on the testing of a theory or hypothesis rather than theory construction (Schneider & Whitehead, 2014). The researcher remains emotionally distant to the data and participants, typically using observation, measurement and deductive logic to confirm or falsify a research hypothesis (Schneider & Whitehead, 2014).

In contrast to the positivist view, naturalism (also referred to as interpretivism and constructivism) accepts the influences of the more personal and subjective nature of human reality, those that cannot be directly observed or measured in mathematical terms (Liamputtong, 2017). Naturalistic views assert that reality is multiple and relative, whereby knowledge is socially constructed rather than objectively determined (Krauss, 2005). Naturalism adopts a more personal and reflexive research approach, which is responsive to individual perception and often derived from personal perspectives or lived experience (Pearce, Christian, Smith, & Vance, 2014; Schneider & Whitehead, 2014). Qualitative research is positioned within this paradigm and attempts to develop in-depth understanding of human behaviours using subjective methods of inquiry such as interviews, observation and focus groups (Liamputtong, 2017). The researcher remains in close contact with participants, employing empathetic neutrality to gain understanding without judgement (Liamputtong, 2017). Reflexivity is also practiced as the researcher draws on personal experiences and tacit knowledge to generate meaning from emergent ideas and concepts (McMurray, Pace, & Scott, 2004).

The divergent views of positivism and naturalism, each clearly valuable for answering research questions, have led research communities towards a middle ground that enables a more flexible approach to answering complex social inquiries. Critical realism encapsulates both positivism and naturalism by interlinking the ontological, epistemological and methodological views to create a unique approach to research (Williams, Rycroft-Malone, & Burton, 2017). In doing so, it employs a unique stratified ontology to distinguish between three layers of knowledge: the empirical, the actual and the real (Bhaskar, 1978). This concept is what differentiates CR from other philosophical paradigms; although at its core the
Philosophical underpinnings of CR suggest this worldview is firmly embedded within the naturalist paradigm (Schiller, 2015).

**Philosophical underpinnings: The ontology and epistemology of critical realism**

My study required the underpinnings of a philosophical perspective that would accommodate the complexity of the research question and the degree of flexibility needed to guide the study design. Described as having a “common sense ontology” (Proctor, 2013, p. 4), CR attempts to reconcile the opposing worldviews of positivism and naturalism, integrating both to achieve a best fit solution to the research inquiry (McKeown, 2017). As such, CR proved a natural fit for the diverse nature of my study and the issues raised in regard to initiating evidence-based change in clinical areas. Although other philosophical paradigms were considered (for example grounded theory, ethnography and phenomenology), I believe critical realism’s ontological approach permitted an overlapping of the various common underpinnings that exist between paradigms, and the utilisation of different paradigm perspectives and strengths in different ways.

Critical realism emerged during the 1960s in response to the oppressive effects of society on the working class and the realisation that Marxist views needed modernising (Bhaskar, 1978). Although social movement towards a critical realist paradigm was conceived in positivism, British sociologist and philosopher Roy Bhaskar is largely associated with the development and refinement of CR, hence its suitability for naturalistic inquiries (Bhaskar, 1979). Bhaskar’s work infers that causal powers and tendencies (also referred to as generative mechanisms) are responsible for the social inequalities and injustices experienced by individuals in the real world (Archer, Bhaskar, Collier, Lawson, & Norrie, 1998). Bhaskar suggests reality exists on three stratified domains (the empirical, the actual and the real), which are influenced by generative mechanisms that may, or may not, be activated to cause effect or bring about social change in the real world (Bhaskar, 1997; Roberts, 2014). Although not fully explanatory or observable, these mechanisms are inferred through empirical and theoretical inquiry to explain the underpinnings of human
inequality and injustice at an empirical level (McEvoy, 2006). The *empirical* domain is considered superficial, where observations and explanations are seen or made known to human existence; the *actual* domain exists on the level of events where interactions and activities occur; and the *real* domain is the identification of generative mechanisms that may or may not be activated to cause an effect on the human world (Nairn, 2012). As CR continues to evolve, critical realists argue that relationships between the ontological levels both influence and effect human outcomes. Therefore, understanding the mechanisms and the context in which they occur is crucial to improving outcomes at the empirical level (Pawson & Tilley, 1997).

To apply this ontological layering to the existing challenges midwives experience when attempting to implement evidence-based change, the problem can be presented in three stratified levels as seen below in Figure 3.

![Figure 3: The challenges of implementing evidence-based change, adapted from Wilson and McCormack (2006)](image)

The value of this stratified ontology is the identification of all elements needed (individual, local and organisational) to sustain evidence-based change in clinical
areas. Critical realism infers that solutions can be sought beyond the superficial engagement of the empirical and actual domains by considering the tendencies and causal powers that may influence activities in the real world (Walsh & Evans, 2014). Thus, an individual’s ability to implement evidence-based change may have little to do with their own efforts or motivation.

The logic that underpins CR is defined as the process of retroduction (McEvoy & Richards, 2006). This involves searching below the surface of what is real to identify the mechanisms that are responsible for, or influential to, what is occurring on the surface (Houston, 2010). Retroduction comprises a five-step process, initiated by the formulation of a research question. The researcher uses logical inference to explore and answer the question and then empirical evidence is sought to either confirm or challenge these answers until saturation of the findings occur. The researcher can then reflect upon and respond to the original transcendental question (McEvoy & Richards, 2006). Retroduction compliments Bhaskar’s theory of CR and is believed to be most compatible with the cycles of AR, both having a direct focus on emancipatory change through problem identification, planning actions, implementing actions and evaluating the outcomes (Meyer, 2006). This approach assumes an individual’s ability to create change requires interaction between actual and real structures, influencing the outcomes of human efforts with or without their awareness. Moving towards more open systems of research that acknowledge the interplay between the empirical, actual and real domains may enable a deeper understanding of real world problems and how solutions can be achieved beyond standard expectancies (Harwood & Clark, 2012; Sayer, 2000).

It is important to acknowledge that CR has been subject to critique of its philosophy, with the theory of casual powers criticised as being problematic and damaging to empirical science (Roberts, 2014; Walsh & Evans, 2014). Critical realists argue that the philosophical underpinnings of CR reflect the true values of everyday people, and generative mechanisms can and do influence the outcomes of real world activities (Bhaskar, 2013). Critical realism permits individuals to articulate the nuances between the empirical, the real and actual domains, emphasizing the importance of finding hidden mechanisms, acknowledging their presence, and
considering solutions that address these discourses. In knowing this, CR promised a practical framework for linking knowledge to the evidence-to-practice gap problem in maternity care, offering a flexible framework for developing solutions based on a qualitative approach that was not only capable of transforming clinical practice, but also system-level change. Thus, by selecting a qualitative approach to the research inquiry, it was necessary to consider a methodology capable of complimenting CR and the participatory nature of this study.

**Methodology rationale**

Confirming the need for a qualitative approach to the study required careful consideration for the research question and aim, which then guided me towards a methodological approach most appropriate for this study. This enabled the distinction between paradigms to become somewhat relaxed as the research question dictated the methods needed to source the answer; and in doing so, presented the benefits of employing a qualitative approach to achieve an optimal solution to the problem (Williamson, Bellman, & Jonathon, 2012). My intention was to ensure midwives were not only participants of this study, but also actively involved in the research process. To achieve this, I considered AR to be the only methodology that would grant me the approach I needed to work in partnership with midwives and co-create a solution to the evidence-to-practice problem. Action research is arguably a well-suited methodology to the stratified ontology of CR. It defines a qualitative approach that aims to improve social situations through cycles of planning, action and reflection (Waterman, Tillen, Dickson, & de Koning, 2001). For me, AR both resonates and connects with CR, thus by combining the two I was able to form a unique approach that reflected the working partnership I had aspired to form with midwives. I believed AR would support a partnership approach to the study, enabling me to work collaboratively with midwives towards the development of a practical process for midwives wanting to implement evidence-based change in clinical areas.
**Action Research (AR)**

The origins of AR are broadly linked to the works of Kurt Lewin, a Prussian psychologist who was recognised as both a philosopher of science and leader of social change (Lewin, 1946). Lewin’s interest in pragmatism and the perceived inadequacies of traditional research are considered the early proponents of AR (Williamson & Prosser, 2002). He observed that one of the most effective ways to both influence and create change was to engage with people in their own world, committing to research that involved people working together towards creating meaningful solutions to everyday problems (Cassell & Johnson, 2016). Lewin’s work clearly illustrates he was an advocate for the disadvantaged and sought every opportunity to re-balance the inequalities evident in society during his time (Waterman et al., 2001). Notably, he shifted the role of the researcher from objective observation to active participation, in effect re-balancing the power and labelling the researcher as “a friendly outsider” (Greenwood & Levin, 1998, p. 675). Lewin’s efforts to achieve social change provided the framework for solving practical problems, which eventually evolved into the methodology used by action researchers today (Adelman, 1993).

Since Lewin’s seminal work, numerous other models have since been accepted as methodological styles of AR. Kemmis and McTaggart (1988) developed a spiral model to describe the AR process, which although similar to the work of Lewin, emphasised participation as a key feature of the methodology. Elliot (1991) built on these core principles to include a reconnaissance stage, which describes a fact-finding phase before the AR cycle begins. O’Leary (2004) referred to the cycles of AR as convergent, using critical reflection and the knowledge obtained from previous stages to move forward towards improved outcomes. Similarly, McNiff and Whitehead (2006) created a three-dimensional model based on self-reflection and informed, purposeful actions.

Collectively, these models demonstrate the numerous approaches and dynamic processes applied to AR. With this knowledge, I recognised the different approaches used to describe AR were not crucial to the success of this study, and if
applied too rigidly could limit the outcomes and gains intended. Therefore, I employed the broad ideologies of Lewin’s original AR methodology (Lewin, 1946), focusing on the underpinning principles to guide the research inquiry (Figure 4).

![Figure 4: The Action Research cycle, adapted from Lewin (1946)](image)

**The principles of Action Research (AR)**

In simple terms, AR describes a family of practices rather than a specific methodology (Meyer, 2000). It is problem focused, context specific and always future orientated (Waterman et al., 2001). Further exploration of the literature suggests AR is also considered a group activity, founded on the partnership between the researcher and participants, where all members are equally involved and actively contribute to the research process (Crozier, Moore, & Kite, 2012).

As outlined earlier, there are various definitions and types of AR, all of which comprise a set of key characteristics common to its methodology. Action research is primarily focused on challenging the status quo and finding practical solutions to real world problems (Coughlan & Casey, 2001). It encompasses many ways of knowing, is participatory in nature and reflects a democratic process through an evolving course of inquiry (Reason, 2016). While researchers continue to define and sometimes challenge the methodology of AR, two fundamental criteria remain...
in all variations of its definition: the cyclic nature of AR, and the involvement of an action intervention aimed towards a best fit solution to the problem (Meyer, 2000).

In practice, AR involves the simultaneous achievement of positive actions towards change, forging a link between scientific knowledge and the everyday practice of individuals and the worlds they live in (Reason & Bradbury, 2001). Furthermore, AR is inclusive and sets the agenda for reform by creating knowledge with, for, and by people, to achieve consensus and create a balance of power in the process of knowledge creation (Jantzen, Nowell, & Scott, 2017). In this context, collaboration is fundamental to the process and outcome of the research inquiry. Relationships may change the purpose of the research and what is important may evolve, but the movement towards new skills and better practices remains central throughout the process (Reason, 2016).

**Participatory Action Research (PAR)**

Participatory action research (PAR) differs from other styles of AR as it prioritises participation and focuses on both the construction and resolution of the research inquiry (Reason & Bradbury, 2001). A working collaborative is formed and participants become partners as the research process unfolds. Largely, PAR is humanistic in nature and encourages a sense of ownership and commitment to the actions implemented, as participants are the agents of change (Hall, 2006).

With participation as a central proponent of PAR, I considered this as the various modes of participation, as described by Cordeiro and Baldini (2018) (Table 3). I decided to employ the participatory modes of consultation, co-operation and co-learning to the study design as I believed these were best suited to AR and my intention to form a collaborative working partnership with midwives. These also enabled me to experience firsthand the value of consultation, co-operation and co-learning in research. Comparatively, I felt the modes of co-option, compliance and collective action did not resonate with the participatory nature of AR or the overarching aim of this study.
Table 3: Modes of participation in PAR research, adapted from Cordeiro and Baldini (2018)

<table>
<thead>
<tr>
<th>Mode of participation</th>
<th>Involvement of local agents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-option</td>
<td>Token representatives are chosen but have no real input or power in the research process</td>
</tr>
<tr>
<td>Compliance</td>
<td>Outsiders decide the research agenda and direct the process, with tasks assigned to participants and incentives provided by the researchers</td>
</tr>
<tr>
<td>Consultation</td>
<td>Local opinions are asked for and outside researchers conduct the research and work with locals to decide the course of action</td>
</tr>
<tr>
<td>Co-operation</td>
<td>Local people work together with outsider researchers to determine priorities, with responsibility remaining with outsiders for directing the process</td>
</tr>
<tr>
<td>Co-learning</td>
<td>Local people and outsiders share knowledge in order to create new understanding and work together to form action plans, with outsiders providing facilitation</td>
</tr>
<tr>
<td>Collective Action</td>
<td>Local people set their own agenda and are motivated to conduct research in the absence of outside facilitators</td>
</tr>
</tbody>
</table>

In this study, the formation of a collaborative partnership was not only a catalyst for change, but also contributed to the learning and actions that evolved as a result of working co-operatively. PARs methodological design encouraged all persons involved to constantly pause and reflect at each step of the PAR process, drawing on the views and opinions of each other to guide the research inquiry.

For these reasons, I deemed PAR the preferred style of AR for this reported study. PARs capacity to facilitate participation in a democratic approach to the research inquiry aligned with the philosophical underpinnings and overarching aim of this study. It enabled me to work co-operatively with midwives to explore the helpers and hindrances of evidence-based change and initiate the beginning of a new process to support midwives’ lead evidence-based change in maternity services.
Action research in maternity care

Action research has the potential to address all challenges clinicians’ experience in regard to practicing evidence informed care (Meyer, 2000). In midwifery contexts, AR employs similar processes already familiar to the role of midwives in their obligation to plan, action, assess and reflect on the effectiveness of interventions and practices they perform day-to-day. This not only resonates with the cycles of AR, but also adheres to midwives’ professional responsibility as mandated in midwifery legislation for the midwife (NMB, 2018).

It is useful to consider examples of AR within the context of midwifery to better understand its value and application in practice. Brady and Lalor (2017) employed AR to investigate the human connection between midwives and women, reporting the AR process “made it possible for participants to represent their worlds through voice” (p. 8). This led to new knowledge and collaborations that could not have been captured using other traditional research methods. Nymann et al. (2013) employed AR to examine midwives responses to practice change, highlighting “the AR design enabled midwives to reflect...articulate their challenges...and collaborate” (p. 577). Similarly, McKellar, Pincombe, and Henderson (2010) explored the value of AR as a methodology, asserting “AR provides a democratic, and dynamic framework for midwives, having potential to bring about change and improve practice for women and clinicians” (p. 85). Collectively, these studies demonstrate the benefits of AR in the discipline of midwifery and how AR can contribute to the synthesis of new knowledge when research is underpinned by a guiding, methodological framework.

Strengths and limitations of action research

Discussions relating to the strengths and limitations of AR remain controversial amongst researchers, some of whom consider the methodology to be a “soft option” for undertaking research (Koshy, Koshy, & Waterman, 2011, p. 33). Others voice praise for its engagement and ability to transform practice problems (Cordeiro & Baldini, 2018). In the past, AR has been criticised as being unscientific and too subjective (Waterman et al., 2001), while other concerns relate to the validity of
findings, trustworthiness, and the level of involvement required throughout the research process (Baum, MacDougall, & Smith, 2006). However, the partnership approach to AR presents benefits supportive of both truth-telling and co-operative inquiry, which ultimately leads to emancipatory actions and empowerment by all involved in the process (Israel, Eng, Schulz, & Parker, 2005).

Generalisability is considered another limitation of AR, as commonly researchers and participants aim to generate context specific knowledge based on a local situation or problem (Koshy et al., 2011). Comparatively, others claim the findings synthesised through AR can be used by like-minded practitioners in similar contexts, proving especially useful to researchers who endeavor to undertake similar projects in future research (Williamson et al., 2012). Finally, AR is not easily defined and can lead to confusion regarding its application. It has been described as an orientation or style of inquiry, differing from mainstream research, thus is frequently dismissed by the traditionalist academic community (Waterman et al., 2001). Despite these discourses, ongoing work by action researchers has led to the development of new research practices, which when combined present new opportunities for improving systems and resolving issues in healthcare (Acosta & Goltz, 2014).

To avoid the potential for challenges to occur throughout this research, I devised the following action statements as a personal reminder of what actions were required to successfully fulfill the aim and objectives of this study. The action statements listed below are based on the work of Rycroft-Malone et al., (2016b), which were adopted to improve the collaborative partnership and participation of all individuals involved in this study.

**Action statements:**

1. Create a flexible study design and clear direction for ways of working collaboratively, fostering communication and truth-telling between myself and the participants;
2. Ascertain participants knowledge of AR and from this build strategies to inform the planning and process of the research inquiry;
3. Ensure there are opportunities for learning and evaluation at every stage of the research process, which may trigger ideas and strategies towards positive change;

4. Build on professional relationships and networks, at an empirical, actual and real level to facilitate the flow of communication;

5. Create milestones and common goals to drive participant engagement throughout the research inquiry;

6. Identify and incorporate the skillsets, tacit knowledge and experience of all involved;

7. Create a sense of leadership from the outset, emphasising the valuable role all participants play in leading the design and outcomes of the project; and

8. Demonstrate the capacity for reflexivity throughout the research process.

By acknowledging the potential for challenges when undertaking this AR study, I understood that my choice of AR as a methodology contained both strengths and limitations. Therefore, the key to success was to remain focused on the above action statements and conduct the study with integrity and neutrality. With this new insight, I reflected on the assertion of McNiff and Whitehead (2011), who consider the AR methodology a framework to build upon, rather than a rigid model with restrictions and limitations.

**Identifying the researchers positionality**

Research is a product of the relationship between the researcher, participants and the tacit knowledge that all parties bring to the research inquiry (Band-Winterstein, Doron, & Naim, 2014). The decision to apply a particular perspective to any research inquiry is dependent on two primary considerations: the research question being asked and the investigator’s positionality as a researcher (Schneider & Whitehead, 2014). To assert the impact and influence of these two considerations on the research process, their terminologies will be briefly discussed. Positionality refers to the viewpoint from which one chooses to speak, incorporating self-awareness on how personal experience, orientation, culture, and
education affect the way research is both conducted and interpreted (Liamputtong, 2017; Merriam et al., 2001). This is further influenced by the subconscious learning that comes from life experiences and the realisation that “knowledge and understanding are developed within the context of one's own thinking” (DePoy & Gitlin, 2016, p. 266). *Reflexivity* is the process of critical self-evaluation and the significant influence of personal experience on the research process (Williamson & Prosser, 2002). Addressing my positionality in relation to this study involved answering two fundamental questions: ‘who am I?’ and ‘whose interests am I serving?’ (McNiff & Whitehead, 2011). These questions will now be explored below.

‘Who am I?’

My positionality in relation to the study reported in this thesis is that fundamentally, I am a mother and a midwife. I sincerely believe both are a calling and the result of responding to a voice within; subsequently I have the two best jobs in the world. However, the common perception that midwifery is a profession that witnesses the most sacred and joyous experience of birth, and those intimate moments thereafter, leaves me slightly deflated. Yes - I have witnessed the strength of a woman and her inspirational effort (both physical and emotional) to give birth, but I am also privy to the discontent expressed by midwives who struggle to meet the needs of women and are challenged to provide the evidence-informed care all women deserve. This has led me to apply my insider knowledge and help to right the injustices midwives are feeling.

I do not consider myself an academic or expert researcher, I am too early in my career to assume such an identity. However, to quote one of the participants interviewed during this study “I’m like a dog with a bone...and when I see something I want...I go for it” (MW6). This comment has stayed with me throughout my research journey and as I progressed through the various stages, I realised my personal journey towards a PhD completion was also about change. I am changing, I am transitioning from a practicing midwife to an academic, from a PhD candidate to a researcher and personally from a mother and midwife to somebody who is
motivated to address not only the practice issues of midwives, but also the behaviours and systems of larger organisations. I want to help bring about evidence-based change in Australian maternity services and support midwives’ implement EBP in clinical areas. To make this happen I am learning the value of persistence, for me the “P” in PhD represents persistence.

‘Whose interests am I serving?’

Prior to beginning this research, I had many conversations with midwives about current midwifery practice and evidence-informed care. From these conversations, I confirmed that most midwives undoubtedly want to provide gold standard services to women, but are uncertain of the steps needed to initiate the evidence-based changes that will help them do so. In the current study I have endeavoured to develop these steps, and in doing so, have considered the interests of both women and midwives throughout all stages of this project. I believed myself to be an insider researcher, but as I advanced through the various stages of this journey I felt increasingly distant from clinical practice, for although I am inextricably linked to the practice of midwifery I realise my heart lies in research about midwifery practice.

Researchers positioned in an outsider role have a tendency to initiate and lead the research inquiry, remaining distant from participants and the context in which the study is conducted (Herr & Anderson, 2005). Comparatively, insider researchers are positioned amidst the research, offering a sense of engagement between participants, the researcher and the context in which they work (Greene, 2014). This style of investigation lends itself to AR and supports the development of tacit knowledge and reflexivity (Williamson et al., 2012). Being a practicing midwife as well as a novice midwifery researcher I could not place myself exclusively in either role, therefore I endeavoured to leverage the advantages of both to ensure I demonstrated awareness of both insider and outsider research perspectives.

To serve women and midwives I recognised that synthesising new knowledge was dependent on my ability to develop a collaborative working partnership with
the midwives who consented to participate in this study. Therefore, my role was to not only become proficient as a midwifery researcher, but also to work in partnership with midwives towards improving processes for implementing EBP in maternity services.

**Reflexivity**

The concept of reflexivity must be acknowledged by researchers wanting to conduct meaningful midwifery research (Burns, Fenwick, Schmied, & Sheehan, 2012). Exploring and critically evaluating one’s biases enables the researcher to realise the significance of reflexivity within the research process and within their own midwifery practice (Lambert, 2010). Reflexivity is commonly used in qualitative research, whereby the researcher reflects on how their own experiences and tacit knowledge impact the research being undertaken. Thus, the adoption of a reflexive position must be acknowledged in light of the experiences and prejudices brought to the research project.

As part of my Masters degree I developed skills in critical analysis and sense-making. I became proficient in sourcing, reviewing and appraising the literature. Towards the end of this degree I realised the significance of this learned skill and began to apply critical reflexivity to my own clinical practice. I wanted to bring about change, but as a graduate midwife I learned that implementing EBP can be challenging and does not always lead to evidence-based change. I remember having conversations with my colleagues about initiating change and EBP. At the time, I listened intently and made note of their struggles, which I believe influenced my decision to learn more about quality improvement and implore the need for improved evidence implementation processes for midwives.

From the beginning of this study I have met regularly with my principal supervisor, who has provided me with the guidance and support I needed to progress through each phase of my journey. At times, my lack of experience as a researcher required the expert skills of my supervisor. For example, when working with busy midwifery-leaders and practicing midwives who were unable to commit to scheduled workshops or interviews I learned how to be flexible and adapt my
methods to suit the reality of real-time research. I had not fully appreciated the complexity of scheduling interviews and workshops around busy midwives, something that I have continued to reflect on throughout this journey. Coordinating a research project within the cycles of AR has required continual planning, co-ordinating, critical thinking and reflection – all skills that I have developed and reflected upon throughout this study. Overall, I have found working collaboratively with midwives to be an extremely positive and rewarding experience. I have been privy to the personal stories of change leader midwives, who have openly shared the successes and challenges of implementing evidence-based change. Throughout this thesis I have endeavoured to report their anecdotes with honesty and clarity, making clear my prejudices in order to achieve a transparent and trustworthy account of their stories.

**Summary**

In this study, my aim was to work in partnership with midwives towards improving processes for implementing new EBPs in clinical areas. I was guided by the philosophical underpinning of CR and employed AR as the preferred methodology for the research design. The key strengths and limitations of AR have been presented, followed by the positionality of myself and rationale for the chosen methodology. Finally, the concept of reflexivity was described and related to this current study. The next chapter will discuss the methods of the research process and will include all aspects of the study design and research process.
Chapter Four: Methods

Introduction

In chapter three, I presented a detailed explanation of the philosophical and theoretical underpinnings of the research inquiry. The contrasting paradigms, strengths and limitations of the chosen methodology, my positionality as a novice researcher and the methodological rationale were also clearly outlined. In this chapter, I present a detailed account of the methods undertaken to conduct this study. First, the study design, setting recruitment process, sample and population characteristics are described. Second, the data collection and analysis methods are outlined. Third, the intervention developed as a result of these methods is presented and the measures of trustworthiness and rigor are defined. Finally, the ethical considerations specific to this research and the processes used for recording and storing data are reported.

Study design

Selecting AR as the methodology for this study was based on the practical application of an inductive approach, whereby actions and outcomes are driven by the collaborative partnership and participatory nature of the research inquiry (Ivankova & Wingo, 2018). Although there are different ideas about what comprises AR, Waterman et al. (2001) provide a useful definition: “AR is a group activity that relies on the collaborations and partnerships of people to generate change and new knowledge in a spiral framework” (p. 588). Guided by this definition, the study reported in this thesis was conducted according to the four broad phases of AR: plan, act, observe and reflect (Lewin, 1946). Identifying and documenting the continuous cyclic process of AR can be difficult as within each phase are often mini-cycles of rapid decision-making, which can reflect “sometimes incomplete cycles or a series of unplanned actions with little or no reflection” (Atkinson, 1994, p. 396). For clarity, I will discuss the research process conducted in
this study using one complete AR cycle in order to clearly demonstrate a clear audit trail.

The following diagram presents an overview of the research process. The example provided below represents a single AR cycle, based on Lewin’s original AR model (1946). This study commenced with exploration of the problem and identification of the knowledge gap. Following this, Figure 5 illustrates each phase of the research process, indicating key actions and developments as they occurred at each stage of the AR cycle. The study concludes with reflection, where recommendations and conclusions are discussed.

![Diagram of the research process](image)

**Figure 5:** *The study design following a single AR cycle, adapted from Lewin (1946)*

1 **Planning**

1.1 *A preliminary review and integrative review of the literature*

The planning stage of the study was initiated by a preliminary review and integrative review of the literature, both of which were undertaken to establish what was known about midwives’ use of best available evidence in practice. A published integrative review was presented in chapter two, titled “Midwives’ use of best available evidence in practice: An integrative review” (De Leo et al., 2019). In
this preliminary stage, it was confirmed that although midwives’ value EBP, they reported numerous challenges when trying to implement EBP into clinical areas. This led to the identification of a knowledge gap regarding what is known about midwives’ use of latest evidence in practice and why the uptake of EBP is both slow and inconsistent in clinical areas.

1.2 Formation of a stakeholder advisory group

Phase one of the study included the formation of a midwifery stakeholder advisory group, which was created to represent the views of practicing midwives and provide expert opinion on the evidence-to-practice problem in maternity services. I selectively established this stakeholder advisory group in February 2019 (with the guidance of the supervisory team), for the purpose of co-developing a “best fit” solution to the existent evidence-to-practice gap. Membership comprised eight midwifery leaders across Western Australia (WA), who were selected for their extensive experience in leading or overseeing practice change projects in clinical areas.

2 Action

Phase two of the study comprised four consultations, which occurred through a collaborative process involving eight midwifery leaders, nine Australian midwives, and two senior learning designers from Edith Cowan University. Discussions focused on midwives’ experience of implementing EBP, the factors considered crucial for ensuring sustained practice change and how this information should be packaged to best suit the needs of diligent midwives working in clinical areas.

2.1 Consultation 1

In July 2019, five members of the stakeholder advisory group participated in an introductory focus group workshop, where ideas and experiences of initiating practice change were shared. The Nominal Group Technique (NGT), a 4-step process for prioritising ideas and concepts generated from group discussion (Harvey & Holmes, 2012), was employed to identify key information derived from the
discussions. These discussions were guided by four questions relating to the study’s aim and objectives. These were as follows:

1. What are your experiences of implementing a new EBP in your organisation?
2. What factors help or hinder midwives efforts to initiate evidence-based change in clinical areas?
3. What information or tools do midwives require to introduce new EBPs in clinical areas?
4. How should this information be presented to midwives working in clinical areas?

Due to professional commitments, three midwifery leaders were unable to attend the introductory focus group workshop, however these midwife leaders consented to participate in face-to-face interviews at their place of work the following week. The interviews were guided by the same four questions discussed at the introductory focus group workshop.

2.2 Consultation 2

Two online focus groups comprising nine Australian midwives were held in May, 2020. The focus group sessions were guided by recommendations from the stakeholder advisory group, inviting practicing midwives from across Australia to participate in phase two of the study, sharing their views on:

- The tools and other information midwives require to initiate practice change in their workplace;
- Midwives views on the usability of existing tools or other resources designed to facilitate knowledge translation in healthcare; and
- How to package these tools and other information to best suit the needs of “on-the-run” midwives.

Through a collaborative and co-ordinated effort, actions towards the design of an evidence implementation resource for midwives was initiated.
2.3 Consultation 3

The professional advice of two senior learning designers from Edith Cowan University were sought to brainstorm the key outcomes derived from the focus group discussions. These concepts were ranked highly by all participants, who unanimously agreed on the need for a web-based evidence implementation resource for midwives. The learning designers were asked for their professional views on the following three questions:

1. What are the principles of effective online learning?
2. What web-based platforms are best suited to online resources or learning packages?
3. What do senior learning designers recommend as the preferred platform and mode of delivery for a web-based evidence implementation resource for midwives?

During these three consultations, ideas regarding the development of a web-based resource, e-Learning package and a hard copy guide to evidence implementation were explored.

2.4 Consultation 4

Following a final consultation with senior learning designers, I devised the blueprint for an evidence implementation resource (labelled as an ‘eTool(KIT)’ for midwives). This was emailed to the nine midwives who participated in consultations 2 and 3 (participants of the two online focus group sessions), with an invitation to review the content and provide feedback on: the interface, functionality and suitability of the resource for maternity contexts. Participants responded via email and their feedback was used to further refine the resource.

3 Observation

Through an iterative process, data were collected and analysed. The findings of the data collected were reviewed by the supervisory team and confirmed by participants, which adhered to the principles of PAR and demonstrated trustworthiness of the research process. Similarly, as the blueprint for an evidence
implementation resource was refined, participants were encouraged to provide feedback and suggestions until all participants deemed the resource satisfactory. Communication was conducted between myself and the participants via email and Skype, ensuring all participants were informed of the study’s progress and intervention development.

4 Reflection

Reflection occurred constantly throughout the research process, providing time for both myself and the participants to establish whether the actions and outcomes of each AR stage addressed the set aim and objectives. This was facilitated by the working partnership that had formed between the stakeholder advisory group and myself, all of whom were committed to the research process and motivated to work towards the development of an evidence implementation resource for midwives. The reflection stage also permitted me the time to consolidate the acquisition of new knowledge and further refine the intervention development. This led to the articulation of recommendations that provide new insight and practical strategies for evidence implementation in Australian maternity services. The following information provides a detailed account of the methods used to successfully undertake this study.

Setting

The study was conducted in Perth, Western Australia (WA) at six midwifery service sites, where managerial or executive positions were held by midwifery leaders within the WA public health sector, including both metropolitan and rural. Additionally, on recommendations from the stakeholder advisory group all midwife members of the Australian College of Midwives (ACM) across Australia were extended an invitation to participate in phase two of the study.

Recruitment

Two strategies were employed to recruit midwives for this study. Participants of the stakeholder advisory group were purposefully selected for their extensive experience in midwifery leadership positions from which they had overseen or led
practice change initiatives. This method of recruitment is commonly employed in qualitative research, where a specific group of participants is required, permitting the researcher to select participants according to the needs of the study (Coyne, 1997). Recruitment was by invitation to all Directors of Midwifery Services in the WA public health sector (Appendix A). Eight midwives holding leadership positions were nominated by their directors, who were sent an electronic invitation to participate in the study (Appendix B). The invitation email included a plain language information sheet (Appendix C) outlining the study’s purpose and a consent form (Appendix D). All midwifery leaders accepted the invitation to join the stakeholder advisory group and consented to participate in either the introductory focus group workshop or face-to-face interview. The introductory focus group workshop invitation is presented below (Figure 6).

Figure 6: Invitation to the introductory focus group workshop

Moving evidence into practice
Development of an ‘on the run’ implementation resource for midwives

Thank you for agreeing to participate in this study and joining the stakeholder Advisory Group.
A nominal group workshop is scheduled for Friday 12th July 1-4pm at the Department of Health, Perth CBD.
The focus of the workshop is to discuss strategies for implementing evidence into practice, drawing on your professional experience and expertise. Discussion will be guided on the following discussion points:

(1) What are your experiences of implementing evidence-based practice change in your organisation?
(2) What information or tools should be considered when developing an evidence implementation resource for midwives?
(3) What factors help or hinder midwives’ efforts to initiate evidence-based practice change in clinical areas?
(4) How should this information be packaged to best suite the needs of midwives working in clinical areas?

We look forward to your attendance at this workshop and sincerely thank you for participating in this unique study.

Thank you for your time and I look forward to seeing you at the workshop.

Yours sincerely,
Annemieke De Leo
RMHN
Midwifery Lecturer
Phd Candidate

Figure 6: Invitation to the introductory focus group workshop

The recruitment of midwifery leaders was achieved and deemed effective, however as the research process unfolded all members of the stakeholder advisory group agreed that midwives in direct practice roles would also provide valuable
perspectives and contribute positively to outcomes of the study. Therefore, two online focus group sessions were planned, inviting practicing midwives from all states of Australia to share their views and experiences of implementing EBP in clinical areas. These sessions were guided by the same four questions raised at the introductory focus group workshop. Following consultations with my supervisory team, it was decided that recruiting practicing midwives via the Australian College of Midwives (ACM) website would result in a broad scope of midwives from varied practice contexts. This not only provided me with an opportunity to connect with midwives across Australia, but also enabled midwives to connect with colleagues, share their views and contribute to the outcomes of this study. An invitation via the ACM was emailed to 4,100 midwife members (Figure 7), 13 of whom expressed interest in participating in an online focus group discussion. A total of nine midwives subsequently consented to participate in a focus group discussion, which was conducted via two on-line sessions (each lasting approximately one hour) to ensure all participants had equal opportunity to express their views on the aforementioned questions. This decision was based on an ideal number established by Rabiee (2004), who suggests the ideal number for focus group discussion lies between five and eight participants; being “large enough to gain a variety of perspectives, yet small enough not to become disorderly or fragmented” (p. 656).
Sample size, study population and participant characteristics

The overall participant sample size recruited for this study comprised 17 midwives who collectively represented five states and territories of Australia. In addition, two senior learning designers from Edith Cowan University were consulted for their expert opinion and knowledge regarding web-based technologies during the intervention development stage. All midwife participants were female and represented midwifery leaders who had either led or overseen practice change projects in their workplace, or were practicing midwives currently working in various models of Australian maternity care services (including education, research, private practice, and hospital-based settings). A table presenting participant characteristics is provided below (Table 4).

Table 4: Table presenting participant characteristics

<table>
<thead>
<tr>
<th>Code</th>
<th>Mode of interview</th>
<th>Information letter</th>
<th>Consent</th>
<th>Interview date</th>
<th>Additional comments</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW1</td>
<td>Workshop</td>
<td>✔</td>
<td>✔</td>
<td>12/7/19</td>
<td>Midwife manager</td>
<td>WA</td>
</tr>
<tr>
<td>MW2</td>
<td>Workshop</td>
<td>✔</td>
<td>✔</td>
<td>12/7/19</td>
<td>Midwife manager</td>
<td>WA</td>
</tr>
<tr>
<td>Code</td>
<td>Mode of interview</td>
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<td>Interview date</td>
<td>Additional comments</td>
<td>Region</td>
</tr>
<tr>
<td>-------</td>
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<td>---------</td>
</tr>
<tr>
<td>MW3</td>
<td>Workshop</td>
<td>✓</td>
<td>✓</td>
<td>12/7/19</td>
<td>Midwife manager</td>
<td>WA</td>
</tr>
<tr>
<td>MW4</td>
<td>Workshop</td>
<td>✓</td>
<td>✓</td>
<td>12/7/19</td>
<td>Midwife manager</td>
<td>WA</td>
</tr>
<tr>
<td>MW5</td>
<td>Workshop</td>
<td>✓</td>
<td>✓</td>
<td>12/7/19</td>
<td>Midwife executive</td>
<td>WA</td>
</tr>
<tr>
<td>MW6</td>
<td>Face-to-face</td>
<td>✓</td>
<td>✓</td>
<td>29/7/19</td>
<td>Midwife manager</td>
<td>WA</td>
</tr>
<tr>
<td>MW7</td>
<td>Face-to-face</td>
<td>✓</td>
<td>✓</td>
<td>8/8/19</td>
<td>Midwife manager</td>
<td>WA</td>
</tr>
<tr>
<td>MW8</td>
<td>Face-to-face</td>
<td>✓</td>
<td>✓</td>
<td>12/8/20</td>
<td>Midwife executive</td>
<td>WA</td>
</tr>
<tr>
<td>MW9</td>
<td>Focus group 1</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Practicing midwife</td>
<td>ACT</td>
</tr>
<tr>
<td>MW10</td>
<td>Focus group 1</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Practicing midwife</td>
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</tr>
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<td>MW11</td>
<td>Focus group 1</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Midwife academic</td>
<td>VIC</td>
</tr>
<tr>
<td>MW12</td>
<td>Focus group 1</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Practicing midwife</td>
<td>VIC</td>
</tr>
<tr>
<td>MW13</td>
<td>Focus group 1</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Endorsed private midwife</td>
<td>NSW</td>
</tr>
<tr>
<td>MW 14</td>
<td>Focus group 1</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Education</td>
<td>NSW</td>
</tr>
<tr>
<td>MW 15</td>
<td>Focus group 2</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Practicing midwife</td>
<td>VIC</td>
</tr>
<tr>
<td>MW16</td>
<td>Focus group 2</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Research midwife</td>
<td>NSW</td>
</tr>
<tr>
<td>MW17</td>
<td>Focus group 2</td>
<td>✓</td>
<td>✓</td>
<td>8/5/20</td>
<td>Practicing midwife</td>
<td>NT</td>
</tr>
<tr>
<td>LA1</td>
<td>Face-to-face</td>
<td>✓</td>
<td>✓</td>
<td>3/6/20</td>
<td>Senior Learning Advisor</td>
<td>WA</td>
</tr>
<tr>
<td>LA2</td>
<td>Face-to-face</td>
<td>✓</td>
<td>✓</td>
<td>3/6/20</td>
<td>Senior Learning Advisor</td>
<td>WA</td>
</tr>
</tbody>
</table>
A projected number of participants was not established prior to commencing this study, rather it was determined by the achievement of data saturation as is the case for any qualitative research study. In simple terms, saturation means that investigators continue to recruit participants and collect data until the point at which data analysis does not contribute to new findings or knowledge (Borbasi, Jackson, & East, 2019). This tends to lead to a smaller sample size when compared to other styles of research (Schneider & Whitehead, 2014).

Notably, the sample size and participant characteristics were undoubtedly influenced by the Coronavirus (COVID-19) outbreak in 2020. With the Australian government imposing social isolation and travel restrictions on all Australians from January – May 2020, my supervisory team, in consultation with the stakeholder advisory group, decided to recruit midwives and conduct all focus group discussions via a virtual forum, which undoubtedly broadened the scope of this study. It is impossible to gauge whether I would have recruited more midwives if the COVID-19 pandemic had not occurred during the recruitment phase of this study, however on reflection the outcome was ideal as I was able to extend an invitation and recruit midwives beyond the borders of WA, bringing new ideas and insight into the experiences and needs of midwives wanting to initiate evidence-based change in clinical areas. The effects of the COVID-19 pandemic in Australia enabled me to not only connect with midwives wanting to initiate practice change around Australia, but also confirmed the evidence-to-practice gap is not a local issue and remains a significant problem for midwives around Australia.

**Data collection**

Three complementary approaches were used for data collection, all of which prioritised the principles of collaboration and partnership between the stakeholders and members of the research team. These methods included an introductory focus group workshop, three face-to-face interviews and two online focus group sessions.
1 Introductory focus group workshop

The introductory focus group workshop was held in July 2019 with five midwifery leaders of WA. The workshop was facilitated by myself and two members of the supervisory team, who assisted with guiding the discussion, taking minutes and audio-recording the discussions. The workshop was based on four questions:

1. What are your experiences of implementing a new EBP in your organisation?
2. What factors help or hinder midwives’ efforts to initiate evidence-based change in clinical areas?
3. What information or tools do midwives require to introduce new EBPs in clinical areas?
4. How should this information be presented to midwives working in clinical areas?

The NGT was used to generate priority information during the workshop. This technique employs an interpretive approach to data collection, involving the engagement of stakeholders and the establishment of key concepts and ideas through a system of ranking (Rankin et al., 2016). The NGT has previously been used to overcome complex issues in healthcare, improving the quality of service delivery by care providers (Harvey & Holmes, 2012). All participants were given equal opportunity to share their views and experiences of implementing evidence-based change in midwifery, reflecting on what tools or other information midwives require to initiate new EBPs in clinical areas. Between each question a “pause and reflect” conversation was initiated, which served two purposes: to summarise the key points and considerations of each participant; and to provide a means of member-checking to both clarify and ensure trustworthiness of the information being collected. The duration of the introductory focus group workshop was three hours; all discussions were audio-recorded with consent and additional minutes were taken by myself and the principal supervisor. I transcribed these discussions into a Microsoft Word document (Figure 8).
A.D: Please share your experience of moving evidence into practice
MWS: It's difficult, I think it's something we do very badly in every day practice, we're very reactionary and we might change a policy quickly, tell them [midwives] to get on with it and move on to the next challenge... we don't go back and evaluate... we don't do the 'plan, do, study, act' very well and I think I think in this massive change environment we want to 'fix' everything and do it quickly, and there's so much to fix...(pause) so we do a quick fix and don't really go back and see if that actually fixed the problem. I think there is so much information overload out there, trying to communicate a change, it's really hard for the staff to access it at the bedside, and they're often wondering 'what's changed now?'
They don't know about change... they're [midwives] too busy, we don't do change well...this is a huge barrier and there's not the resources to support clinicians to do it [change]. We have Clinical Practice Improvement Coordinators (CPIC) but they're mostly off site looking at safety and quality data and they're not working with clinicians directly looking at practice...I did a course around CPI and it was really driven by the clinicians and they had a structure approach to improving practice... they got stakeholders in, identified issues that needed improving, had the stakeholders in a group, used the fishbone framework, mapped the issue – a high level and low level map – did a fish bone analysis, and used a voting system to initiate key areas for clinical improvements...(pause) Putting that into practice here, without the resources would be an onerous process.

A.D: What were the biggest problems?
MWS: Time, anything work outside of allocated work time was not provided, midwives and managers are flat strapped, we need the time allocated during work hours and someone to coordinate the project.
Every directorate, almost every ward should have clinical practice improvement midwife position, whether its part time or full time... they would be fully occupied but at least the changes we make would be effective and followed up...(pause)
We're talking about EBP, why can't we get compliance with that..? It's just that they're [midwives] so busy delivering direct care...

Figure 8: An example of transcribed verbatim from the introductory focus group workshop

2 Face-to-face interviews
Semi-structured face-to-face interviews were conducted with three midwifery leaders who were unable to join the workshop, which occurred at each participant's place of work. Each interview lasted approximately one hour. This interview style is commonly employed in qualitative research, whereby an interview guide is used to induce conversation about a specific topic or focus (Schneider & Whitehead, 2014). These conversations were based on the four questions raised at the introductory focus group workshop, giving participants an opportunity to both articulate and reflect on their personal accounts of initiating or overseeing practice change projects. Like the introductory focus group workshop, I transcribed the interviews that were audio-recorded, along with additional memos taken while the interviews took place. (Figure 9).
3 Online focus group sessions

Following the introductory focus group workshop and face-to-face interviews, a recommendation was made by the stakeholder advisory group to include practicing midwives, which initiated phase two of the study. Two subsequent online focus group discussions were conducted to confirm the data already collected and further explore the needs of midwives’ wanting to implement EBP in clinical areas.

Focus groups are becoming increasingly popular in health research and offer a useful vehicle for involving participants in intervention development, planning and evaluating outcomes (Rabiee, 2004). In their broadest sense, focus groups are a means of generating large amounts of information in a relatively short period of time, usually consisting of a group of people whose experience and opinions are relevant to the topic being discussed (Langford, Schoenfeld, & Izzo, 2002). The duration of each focus group session lasted approximately one hour, inviting practicing midwives to share their views on:

- What tools and other information (if any) midwives require to introduce new EBPs into clinical areas;
• Existing implementation resources, their usability and suitability to the midwifery context; and
• How to package these tools and other information to best suit the needs of diligent midwives wanting to implement new EBPS in clinical areas.

All discussions were audio-recorded with consent via a video conferencing platform (Zoom). Two members of the supervisory team attended each session and took additional notes on the discussions and key points emphasised by participants. I transcribed the data collected two days post the focus group sessions, which were combined with the data sets obtained from the introductory focus group workshop and face-to-face interviews. A total of eight hours and sixteen minutes of audio recordings were transcribed during data collection. Throughout this time, I continued to work collaboratively with members of the stakeholder advisory group via email and Zoom, which aligned with the underpinning philosophy of AR and also directed me towards an intervention that would provide a practical answer to the research question.

All three approaches to data collection were effective in collecting data that were relevant to the aim and objectives of this study. The introductory focus group workshop proved useful for sharing tacit knowledge and arguably captured the essence of collaboration and the co-operative nature of AR. The face-to-face interviews provided me with the opportunity to both observe and react to social cues such as voice, intonation and body language (Shapka, Domene, Khan, & Yang, 2016). They also permitted a more synchronous communication between myself and each participant, taking advantage of the spontaneous and sometimes extended responses that characterise face-to-face interviews (Schneider & Whitehead, 2014). Comparatively, the online focus group sessions provided participants with equal opportunity to voice their views and share screen time. It also provided a platform for connectivity, bringing people together from various locations to work on a common problem and goal (Shapka et al., 2016).
Data analysis

Qualitative research can generate large amounts of data, which can overwhelm both novice and experienced researchers (Rabiee, 2004). Thus, a central aim of data analysis is to reduce the quantity of data while making meaningful sense of the information it generates (Schneider & Whitehead, 2014). Krueger and Casey (2000) suggest data analysis begins with going back to the intention of the study to maintain a clear focus of the overarching purpose of the research. With this in mind, I approached data analysis with a commitment to the original aim: to work collaboratively with midwives towards the development of an evidence implementation resource specific to the needs of midwives’ working in clinical areas. I chose not to use transcribing services to copy the audio recordings from the data collected. Rather, I made the decision to manually transcribe, code and categorise all transcripts into Microsoft Word documents myself so I could re-familiarise and reflect on the information obtained during data collection. I used the copy and paste function to iteratively compare and contrast one set of data with another, until the transcripts had been correctly interpreted and characterised. I then presented the sub-categories and major categories to my supervisory team using a storyboard to illustrate the process.

Data analysis commenced in September 2019, with audio recordings from the introductory focus group workshop, face-to-face interviews and online focus groups analysed using Braun and Clarke’s (2006) thematic approach to data analysis. This qualitative method describes a process of coding, which involved immersing myself in the data to become familiar with the conversations and language of the information obtained. Dialect from each audio recording was transcribed within one week following data collection, creating transcripts that I immediately began to analyse and code. Initially, I highlighted key words and phrases to form initial codes. This process was conducted using a two columned table, wherein transcripts were copied into the left-hand column and were highlighted as codes, before being copy and pasted from the transcripts into the right-hand column. An example is provided below in Table 5.
Table 5:  Example of coding

<table>
<thead>
<tr>
<th>Transcribed verbatim</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW10 I’m speaking from the role of a researcher rather than a clinical, I feel this is a great idea, the package is very comprehensive but still in its draft stage, but that’s ok. It’s very comprehensive, I was wondering if this is something that you think will be interactive? Or more of a document? Because I like your aim...the needs of ‘on the run’ midwives and although it’s been a long time since I’ve practiced clinically as a midwife I think I wouldn’t have time to read it, so with any of these implementation tools they’re really great and they’re well packaged but you need a lot of time and energy to sit down and read it...I’m really interested to hear what xxx and xxx have to say about it, so yeah...so I think it needs to be more interactive...to walk a person through the implementation process as an online tool, the information is great but quite heavy...I had to really focus on it...I think it’s a bit too complex for the needs of midwives but I’m not practicing at the moment so maybe I’m not the right person to make that decision. To have a really good, clear example that runs all the way through it would be great...that might make it a bit more real for midwives.</td>
<td>‘The package is very comprehensive’ (MW10)</td>
</tr>
<tr>
<td></td>
<td>‘As a midwife I think I wouldn’t have time to read it’ (MW10)</td>
</tr>
<tr>
<td></td>
<td>‘I think it needs to be more interactive’ (MW10)</td>
</tr>
<tr>
<td></td>
<td>‘The information is great but quite heavy’ (MW10)</td>
</tr>
<tr>
<td></td>
<td>‘I had to really focus on it’ (MW10)</td>
</tr>
<tr>
<td></td>
<td>‘It’s a bit too complex for the needs of midwives’ (MW10)</td>
</tr>
<tr>
<td></td>
<td>‘To have a really good, clear example that runs all the way through it would be great’ (MW10)</td>
</tr>
<tr>
<td></td>
<td>‘Make it a bit more real for midwives’ (MW10)</td>
</tr>
</tbody>
</table>
I can talk about trying to implement acupuncture by midwives into the private hospital in which I work at, I had to fill out a project plan specific to my hospital and it took me ages to do and it didn’t go anywhere...I wasn’t allowed to do it. So having the tools that you’re suggesting would be awesome...and having that available for every hospital, because worked in both private and public hospitals, would be great. There aren’t enough champions...

<table>
<thead>
<tr>
<th>Transcribed verbatim</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW11 I can talk about trying to implement acupuncture by midwives into the private hospital in which I work at, I had to fill out a project plan specific to my hospital and it took me ages to do and it didn’t go anywhere...I wasn’t allowed to do it. So having the tools that you’re suggesting would be awesome...and having that available for every hospital, because worked in both private and public hospitals, would be great. There aren’t enough champions...</td>
<td>‘It didn’t go anywhere’ (MW11) ‘Having the tools that you’re suggesting would be awesome’ (MW11) ‘There aren’t enough champions’ (MW11)</td>
</tr>
</tbody>
</table>

These codes were then grouped into sub-categories, which in turn were collapsed to form major categories. This enabled the data to be represented in a condensed format while still reflecting the connection between the transcripts, the codes and the subsequent category formation. By documenting the process I was able to ensure a clear and transparent audit trail. Anonymity was assured for all participants as I assigned each participant a pseudonym to ensure their privacy and to maintain confidentiality in the reporting of direct quotes. For example, “MW1” denotes midwife participant number one.

The information that emerged replicated the sequence of data analysis and echoed the collaboration and voices of all those involved in the process. As major categories emerged the transcripts were re-read and the codes compared to the previously developed sub-categories. This iterative process continued until no new information was perceived and data saturation was reached. Data saturation was identified after approximately eight hours of discussion and interviews; involving 17 Australian midwife participants.

Following discussions and ongoing guidance from my supervisory team, seven major categories were collapsed into three core findings, which clearly highlighted the factors considered crucial by midwives’ to help or hinder evidence implementation in clinical areas. This is presented below in its original storyboard version (Table 6), and then in a table format (Table 7).
Table 6: Example of the storyboard with emergent core findings, major categories, sub-categories and codes

Table 7: The storyboard translated into a table format

<table>
<thead>
<tr>
<th>Core finding</th>
<th>Major category 1</th>
<th>Major category 2</th>
<th>Major category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>To lead implementation of EBP, midwives need practical solutions and a map of the process, packaged into a centralised web-based resource</td>
<td>Consider digital technology and design a resource that’s accessible and practical for on-the-run midwives</td>
<td>To lead change initiatives midwives need knowledge of implementation processes, packaged into a centralised resource</td>
<td>To firmly embed change, the resource should help build a network and link midwives together</td>
</tr>
</tbody>
</table>

Sub-categories

- Midwifery is moving towards a digital era but access to WIFI is not always possible in practice
- Bring it back to a safety and quality perspective: provide midwives with applicable solutions to implementing EBP and factor in more time
- Change leader midwives and women need to be included in the process of developing the resource because they are central to the success of all change initiatives
- Staff use work tablets and desktop computers the most; personal devices can be seen as a barrier to care
- Midwives need knowledge of the implementation process in the resource: establish the starting point of change and map the process
- We need a standardised, centralised, resource with step-by-step instructions and practical solutions that involve change leader midwives and women
The final iteration of the findings and their constituent data were unanimously agreed on by all members of the supervisory team in May 2020. The core findings to emerge captured the essence of the data reported on in this study and reflect the collaborative partnership between myself, the supervisory team and all participants. The information extracted during data analysis provides insight into the strategies needed to support midwives implement EBP in clinical areas. Thus, the findings contribute to the growing body of knowledge in midwifery research relating to knowledge translation and the needs of midwives wanting to initiate evidence-based change in clinical areas.

Analysing focus group discussions can be a challenge, as it requires careful reflection and interpretation of verbatim (Liamputtong, 2017). This was evident during transcribing as often one midwife would agree with another, or two would talk in unison making it difficult to interpret whose opinion was being voiced. However, the uniqueness of analysing focus group discussion is the ability to generate data based on the synergy between participants and the information that is generated by several participants talking about a similar topic together (Krueger & Casey, 2000). This also illustrated the wide range of challenges experienced by midwives who had tried to implement evidence-based change, highlighting the varied perspectives and possible approaches to the solution.

**Intervention development**

**Stage 1  Planning**

Following data analysis, I began to formulate ideas on a best fit solution to the evidence-to-practice gap problem, based on the ideas and discussions voiced by participants during data collection in phase one of the study. It was clear that midwifery leaders saw value in developing a web-based evidence implementation resource to support the adoption of EBP in clinical areas. Using a table format, I prioritised the key outcomes voiced by participants based on three areas of focus: target audience, content and format. This is presented below in Table 8.
I also researched various web-based technologies (for example: mobile apps, Learning Management Systems (LMS), e-Learning packages, and online ‘how to’ toolkits), comparing these with the key outcomes derived from the focus group discussions and face-to-face interviews. It was evident from the key outcomes that

Table 8: Key outcomes from the introductory group workshop and face-to-face interviews

<table>
<thead>
<tr>
<th>Intervention development focus</th>
<th>Key outcome(s) from phase one data collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target audience</td>
<td>• ‘Make it specific for midwives’ (MW4)</td>
</tr>
<tr>
<td></td>
<td>• ‘Think about midwives working in any midwifery practice context’ (MW1)</td>
</tr>
<tr>
<td></td>
<td>• ‘Consider on-the-run’ (MW8)</td>
</tr>
<tr>
<td></td>
<td>• ‘Involve midwives in the process’ (MW7)</td>
</tr>
<tr>
<td></td>
<td>• ‘Make it accessible in clinical areas’ (MW3)</td>
</tr>
<tr>
<td>Content</td>
<td>• ‘Midwives need a map of the implementation process’ (MW2)</td>
</tr>
<tr>
<td></td>
<td>• ‘Knowledge of implementation processes’ (MW1)</td>
</tr>
<tr>
<td></td>
<td>• ‘Step-by-step instructions on introducing practice change’ (MW6)</td>
</tr>
<tr>
<td></td>
<td>• ‘A ‘how to’ change practice guide’ (MW5)</td>
</tr>
<tr>
<td></td>
<td>• ‘Give us examples of how practice change works’ (MW3)</td>
</tr>
<tr>
<td></td>
<td>• ‘Show midwives how to lead practice change’ (MW7)</td>
</tr>
<tr>
<td></td>
<td>• ‘Link theory to practice, show midwives why using theory helps create change’ (MW3)</td>
</tr>
<tr>
<td></td>
<td>• ‘Keep it simple, give us the gist of it without all the detail’ (MW6)</td>
</tr>
<tr>
<td></td>
<td>• ‘Tell midwives why change is important so they understand the process’ (MW5)</td>
</tr>
<tr>
<td>Format</td>
<td>• ‘Consider digital technology and design a resource that’s accessible and practical on-the-run’ (MW7)</td>
</tr>
<tr>
<td></td>
<td>• ‘Build a network that links midwives together’ (MW3)</td>
</tr>
<tr>
<td></td>
<td>• ‘A centralised web-based resource’ (MW8)</td>
</tr>
<tr>
<td></td>
<td>• ‘Web-based platforms are useful’ (MW2)</td>
</tr>
<tr>
<td></td>
<td>• ‘Consider an e-Learning package, teach midwives how to implement EBP’ (MW4)</td>
</tr>
<tr>
<td></td>
<td>• ‘A hard copy manual on ‘changing practice’ might be useful to have at work stations’ (MW1)</td>
</tr>
<tr>
<td></td>
<td>• ‘A ‘practice change’ toolkit could work’ (MW6)</td>
</tr>
</tbody>
</table>
emerged from the data collected that a toolkit format would most effectively accommodate the priorities and suggestions made by participants regarding an evidence implementation resource.

There is an increasing body of published literature on the effectiveness of toolkits as a popular mode of knowledge translation, which have been used effectively across a range of health related disciplines (Barac, Stein, Bruce, & Barwick, 2014). The term “toolkit” refers to the “packaging of multiple resources that codify explicit knowledge..., [which are] geared towards knowledge sharing, education or to facilitate behaviour change” (p. 3). I believed this definition captured the ideas and suggestions made by participants regarding the format of the resource. The term “toolkit” was generic, yet promised functionalities that would enable me to develop both online and hard copy options for an evidence implementation resource. I spent time considering what to label the resource, developing various word combination such as the “Toolbox”, “midwives KIT” and “Knowledge Implementation Tool”. Finally, I decided a combination of these three terms would be the best fit, therefore the evidence implementation resource was labelled the “eTool(KIT) for midwives. The term ‘Tool’ represents the practicality of the resource and the inclusion of all equipment needed to implement EBP. The term ‘KIT’ characterises the acronym derived from what the tool represents: a Knowledge Implementation Tool. In combination, the eTool(KIT) provides midwives with the resources needed to implement new knowledge (ie. the knowledge gained from latest evidence) into clinical areas. Although, developed as a web-based resource, the eTool(KIT) also has the capacity to be transformed into a hard copy manual that can also be used and accessed in clinical areas.

To translate the concept of an eTool(KIT) for midwives I began by organising the implementation process into six well-defined steps, which I created using the presentation software Microsoft PowerPoint. Each step comprised of a number of tasks to complete with the resources needed to implement EBP. The process is presented below, with additional narrative to describe each step in more detail. The resultant slideshow was presented to all participants, who were invited to
share their thoughts and ideas after viewing each slide to establish the relevance of the information provided and its suitability to the midwifery context.

1. Slide one presents an overview of the intervention design: Implementing practice change: An eTool(KIT) for midwives.

Presenter: “The eTool(KIT) is specifically designed for the needs of practicing midwives who have little or no exposure to structured implementation processes and limited experience of implementing practice change. The eTool(KIT) contains the information and tools needed to support midwives wanting to implement new EBPs in clinical areas.”
2. Slide two defines the six steps of evidence implementation, providing an overview of what the eTool(KIT) includes and why it is a valuable tool for midwives wanting to initiate new EBPs in clinical areas.

Presenter: “The eTool(KIT) is designed for diligent midwives working in a range of midwifery practice settings. The tool aims to improve the uptake of best available evidence in clinical areas, providing midwives with the knowledge and guidance needed to lead practice change projects.”
3. Slide three demonstrates the first step towards implementing a new EBP:

Getting ready. This begins by an explanation of the “activities to help get you started”, also providing midwives with a set of resources to consider and use in the first step of initiating practice change.

Presenter: “Step one involves getting ready for practice change, emphasising the importance of understanding the problem and creating a logical plan for achieving evidence-based change. The hyperlinks lead to examples of the tools required to complete step one of the process. Each tool provides a definition of its use and application in practice.”
4. Slide four discusses step two of implementing practice change: Identifying barriers and facilitators. The slide offers a definition for these terms, followed by clear instruction on how to conduct a context assessment in the workplace. Midwives are provided with two resources (attached as hyperlinks), which assist them to identify possible individual and workplace factors that help or hinder evidence implementation.

Presenter: “Step two provides midwives with guidance on how to identify the barriers and facilitators of implementing successful practice change. The two resources attached to the hyperlinks are based on individual and organisational change theories. This activity illustrates the value of employing theoretical frameworks to practice issues, ultimately increasing the likelihood of successful outcomes for practice change projects.”
5. Slide five outlines step three of implementing practice change: Selecting change strategies. This step asks midwives to map their identified barriers and facilitators to appropriate change strategies, enabling midwives to target resistant behaviours and leverage the facilitators of evidence-based change.

Presenter: “This resource provides midwives with competency activities and a mapping template, which links implementation barriers to effective change strategies derived from the TDF and COM-B theories. The purpose of this step is to highlight the importance of applying theory to all practice change initiatives.”
Slide six presents step four of the implementation process: Implementing change. Midwives are required to consider the specific activities they will need to consider when developing strategies for implementing new EBPs in clinical areas. This may include one-to-one mentoring, educational events, visual reminders, interprofessional education, learning modules or involving champions in practice change projects.

Presenter: “Step four provides midwives with a range of examples for action strategies and how they work in practice. The resources located on this slide illustrate a range of common action interventions that may be used to support implementation of practice change projects in clinical areas.”
Slide seven discusses step five of the implementation process: Planning for sustainability. During this step, midwives are asked to consider planning for sustainability. This includes consideration for the anticipated length of time a project will take to firmly embed evidence-based change, the EBP being implemented, the adaptability of the EBP to the local environment and the perceived benefits for changing practice. The step also articulates the importance of planning implementation strategies from the outset of practice change initiatives, providing a resource to facilitate the process.

Presenter: “Step five discusses the importance of planning for sustainability when leading a practice change project. The resource attached to this slide provides a template for midwives to establish specific goals and consider sustainability from the outset of their practice change projects.”
8. The final slide includes an evaluation step: Evaluating outcomes. In this step, midwives are provided with useful strategies commonly employed in healthcare to evaluate the effectiveness and success of implementation projects.

Presenter: “The final step is evaluating the success of your outcomes. Midwives are provided with a range of tools to establish the effectiveness of their implementation efforts, linking useful resources that enable midwives to track and evaluate the implementation process, outcome and impact of their practice change project.”
In conjunction with the above PowerPoint presentation, I developed a hard copy resource manual that contained all the information, tools and steps included in the eTool(KIT). The manual was emailed to all participants prior to attending the focus group discussions, inviting midwives to review each tool and provide feedback on its suitability for inclusion in the eTool(KIT). The cover of the resource manual is presented below (Figure 10) and the full version is available in the appendix (Appendix E).

![Figure 10: A copy of the front cover of the resource manual emailed to participants prior to attending the focus group discussions](image-url)
Stage 2  Action

Ensuring end user engagement was of the utmost importance throughout the action stage of intervention development. To further clarify the problem and understand the needs of midwives wanting to implement new EBPs, two online focus group discussions were held during phase two of the study via the electronic platform Zoom, in May 2020. I engaged with each group in a discussion based on the same questions explored during the introductory focus group workshop. In addition to this, I invited participants to reflect on the structure and presentation of the proposed eTool(KIT), which included the information and resources outlined in the resource manual. As each focus group concluded, participants were asked if they were interested in receiving updates on the development of the eTool(KIT), all midwives consented to this option. This ongoing engagement provided a tangible way of remaining connected with the end users of the eTool(KIT). I remained in contact with participants following the focus group sessions, which enabled me to communicate the study’s progress and continue to receive feedback and suggestions regarding intervention development. The key outputs from these discussions are presented below (Table 9).

Table 9:  Key outcomes from the two online focus group sessions

<table>
<thead>
<tr>
<th>Intervention development focus</th>
<th>Key outcomes(s) from phase two data collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target audience</td>
<td>• ‘Consider midwives demographics’ (MW10)</td>
</tr>
<tr>
<td></td>
<td>• ‘Champions of change’ (MW14)</td>
</tr>
<tr>
<td></td>
<td>• ‘Independent midwives’ (MW12)</td>
</tr>
<tr>
<td></td>
<td>• ‘Include graduate midwives’ (MW14)</td>
</tr>
<tr>
<td>Content</td>
<td>• ‘Create a simple tool that models the process of change’ (MW16)</td>
</tr>
<tr>
<td></td>
<td>• ‘Consider a tool that explains the why, how and who of implementing change’ (MW11)</td>
</tr>
<tr>
<td></td>
<td>• ‘Make it interactive’ (MW16)</td>
</tr>
<tr>
<td></td>
<td>• ‘Midwives want something quick and easy to follow’ (MW12)</td>
</tr>
<tr>
<td></td>
<td>• ‘A print-out option would be good also’ (MW12)</td>
</tr>
<tr>
<td>Format</td>
<td>• ‘Consider on-the-run’ (MW17)</td>
</tr>
<tr>
<td></td>
<td>• ‘Some resources are too complex for the needs of midwives, keep it simple’ (MW13)</td>
</tr>
<tr>
<td></td>
<td>• ‘The information needs to be centralised’ (MW11)</td>
</tr>
</tbody>
</table>
From the two online focus group sessions, I determined the feasibility of existing implementation resources and gained insight into the specific needs of midwives wanting to implement new EBPs on-the-run. Participants also emphasised the importance of using plain language text, specifically referring to two implementation science terminologies: “evidence implementation” and “implementation strategies.” I revised the resource manual and removed this terminology as it did not resonate with midwives. Similarly, two participants (MW11 and MW14) found the TDF too complex for the needs of midwives, therefore this tool was removed from the resource manual. As I reviewed the key outcomes and transcripts from the conversations shared during the focus group discussions, I established that in order to standardise the process of implementing change, the eTool(KIT) not only needed to be web-based, but also needed to be accessible in a hard copy version at midwifery work stations. One midwife participant confirmed my idea, suggesting “What would work is an online tool...one that standardised practice change...and another thought is you could have a resource manual also, that way midwives could choose their preferred option for accessing the tool…” (MW5).

Stage 3 Observation

Using Microsoft Word, I converted the PowerPoint presentation into a six-module e-Learning package, comprising the information and tools midwives require to implement sustained practice change. During this process, I focused on three key components:

- Building a hub for information-sharing and learning;
- Encouraging use of best available evidence in midwifery practice; and
- Improving the knowledge and confidence of midwives wanting to initiate new EBPs in clinical areas.
Once the learning content was developed, I sought the professional advice of two senior learning designers from Edith Cowan University. I discussed the concept of an e-Learning package, presented the module content and requested their recommendations on what web-based platforms were best suited to developing online resources. Working collaboratively with the learning advisors, I trialed the online platform Articulate Rise 360, a lightweight web application used to design interactive courses, which can be built following a sequence of logical steps. The platform is particularly useful for on-the-run learners as it can be accessed from a range of mobile devices (Trangenstein, 2008). I chose the colour purple as the primary colour band for the eLearning package, which resonates with the colours associated with the Australian College of Midwives (ACM), while also symbolising the colour associated with women. All modules comprised the same format and are demonstrated using the template below, which was created to illustrate the interface and content of the e-Learning package (Figure 11).

NOTE: The images embedded in the following slides have either been sourced from a royalty free imaging sharing website (UnSplash) or purchased from the image repository: Deposit Photos.
The course begins with an introduction to implementing practice change, outlining the structure and modules included in the course. The interface is simple, easy to use and written in plain language. The course is divided into six clearly labelled modules, all of which facilitate a six-step approach to practice change. To
start the course, midwives click on the “start course” tab, which opens into a new browser and module one commences (Figure 12).

**Figure 12: Example of module one: “Getting Ready for Practice Change”**

Midwives are provided with an overview and set of instructions for each module, which clearly outline the content and tasks required for each step of implementing practice change. The use of a “Toolkit icon” refers midwives to the specific resources needed to complete each step of the implementation process.
These are embedded into each module, which the midwife can access through a hyperlink to complete the implementation activities. (Figure 13).

To progress through each module, midwives must complete a set of core competencies and learning activities (Figure 14). Once this is achieved the midwife can progress onto the next module. It is anticipated this will ensure midwives have the knowledge-base and skills to successfully lead practice change projects. Each module includes practical resources and the information required to implement EBP, while highlighting the barriers and facilitators of evidence-based change. The
concept of ‘on-the run’ was addressed in the sense that midwives can access the eTool(KIT) anytime and from any location, with the option of completing the work asynchronously (i.e. at their own pace and at a time most convenient to them).

<table>
<thead>
<tr>
<th>Activity 1: Create a logic model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating a logic model provides a visual depiction of your planned project, which you can use to share your ideas and plans with key stakeholders (i.e., your manager, other allied health professionals and your midwifery colleagues).</td>
</tr>
</tbody>
</table>

Example of a logic model:

<table>
<thead>
<tr>
<th>WHAT?</th>
<th>HOW?</th>
<th>WHO?</th>
<th>OUTCOMES</th>
<th>IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are you trying to change?</td>
<td>What are the key actions/components of the change project?</td>
<td>Who are the people directly affected by the practice change?</td>
<td>What are the anticipated short, medium and long term effects of this change project?</td>
<td>What is the ultimate goal of the intervention or evidence-based change?</td>
</tr>
<tr>
<td>What do you want to do differently?</td>
<td>How do you plan on initiating this change project?</td>
<td>Who is the change targeted at?</td>
<td>What are the intended outcomes or effects of this evidence-based intervention?</td>
<td></td>
</tr>
</tbody>
</table>

Use the Logic model template (download below) to develop your own logic model specific to the implementation project you are planning for.

![Image of Logic model template](Image)

**Figure 14:** Example of learning activities in module one

Also included in each module is an interactive video, presenting a practicing midwife sharing a personal experience of implementing practice change (Figure 15). This was considered an important feature by all participants, who expressed the value of hearing real-time stories from midwives who had experience in evidence implementation in the workplace.
The final section of each module includes an online quiz to consolidate midwives understanding of the core competencies in the module and includes a print-out option for automated feedback on how successful the learner was in completing each module (Figure 16).

**Figure 15: Example of an interactive video in module one**

Hi, my name is Maree and I’d like to share my experience of trying to change practice at my workplace…It was hard work, but I did it!
Figure 16: A sample question from the online quiz

The module then concludes and the learner progresses through to the next step of the practice change process (Figure 17).

Well done!

Click the continue button to move onto Module 2: Understanding the barriers and facilitators of change
Stages 4 and 5  Reflection and evaluation

The final stage of intervention design was conducted in July 2020. All midwife participants were emailed a copy of the eTool(KIT) content and interface, which broadly outlined all material included in the e-Learning package. Participants were invited to provide feedback or comment on any aspect of the resource, which was taken into consideration during the final stages of intervention development.

Throughout this stage, I reflected on the collaborative working partnership I had developed with midwives, who both inspired and encouraged me to co-create this resource. I know that all midwives are passionate about EBP and developing a tool to support their efforts is a responsibility that I am committed to. Midwives are often misled to believe they don’t have the strength to lead practice change initiatives, but as this study demonstrates, midwives do have the capacity to challenge old practices and update longstanding ways of thinking. However, to accomplish this they require knowledge of implementation processes, collegial support and practical guidance to ensure successful outcomes are achieved. The work conducted throughout the intervention development stage resulted in the development of a blueprint for an eTool(KIT) for midwives, designed to improve processes for midwives wanting to implement new EBPs in clinical areas. It is anticipated this resource will be centralised through a web-based platform and promises to standardise the process for implementing sustained practice change in clinical areas. The course will be accessible online and midwives will be able to download the learning material onto a range of mobile technologies (Figure 18). The end product will provide midwives with a six-step approach to practice change.
Trustworthiness and rigor in qualitative research

Concern for trustworthiness and rigor in qualitative research has been well established by Lincoln and Guba (1986). Trustworthiness is a term that refers to the quality of a study, including assurance that a clear and true representation of the research process has been documented (Liamputtong, 2017). It is acknowledged that the findings of this study were used to inform the development of the blueprint for the eTool(KIT), thus relate to the concept of trustworthiness in this context. Rigour is a term used to articulate the strategies employed to enhance the credibility of the research process, thus when the two are combined, a study should both reflect and articulate a transparent approach to the research process. To optimise the trustworthiness and rigor of this study, Guba’s model of trustworthiness for qualitative research was employed (Guba, 1981). This model is based on the identification of four criterion: Truth value, Applicability, Consistency and Neutrality. These criteria are defined in detail below along with their application to the study.
Truth value

Truth value refers to the believability of findings, questioning whether the findings from which a study was undertaken provides the reader with confidence (May & Holmes, 2012). I was able to achieve this criterion by sharing the data transcripts with my supervisory team, who provided feedback on accuracy of reporting and interpretation of the findings. Similarly, as a form of member-checking, participants were invited to share their view on the findings and discussion generated from this study.

Applicability

Applicability (also known as transferability) refers to whether findings from one study are transferable to other groups, contexts and settings (Schneider & Whitehead, 2014). Guba (1981) suggests applicability in qualitative research “attempts to establish the degree to which findings can be applied to other contexts and settings or with other similar groups” (p. 90). In qualitative research this is not always possible; however, providing in-depth descriptions of the categories and their constituent findings may prove to be beneficial in other similar situations (Lincoln & Guba, 1986). A method for optimising the likelihood of this is to ensure the data provides “a thick description...to enable someone interested in making transfer to reach a conclusion about whether a transfer can be contemplated as a possibility” (Lincoln & Guba, 1986, p. 80). By providing a detailed and clear audit trail, I ensured other researchers and clinicians could determine whether the findings presented in my study resonate with other workplace contexts.

Consistency

Consistency refers to the ability for scientific research to be replicated and produce similar outcomes or results in a similar context (Liampittong, 2017). In qualitative research, consistency “is the criterion concerned with stability, reliability and equivalence” in relation to the transferability of a study (Guba, 1981, p. 76). This provides assurance that the research trail is both accurate and consistent. Throughout this study I maintained a detailed account of the research process through careful record-keeping and regular auditing by my supervisory team.
However, some degree of variability in qualitative data is to be expected, as qualitative research is subjective and may vary depending on individual experience and interpretation (Schneider & Whitehead, 2014). In this context, I approached the research journey with an open mind, listened to the various perspectives of participants and documented an accurate audit trail that I felt confident could be replicated to produce similar findings in another context.

Neutrality

Neutrality suggests there is potential for findings to be shaped by biases, personal or professional, which can alter the fundamental outcomes of research (Guba, 1981). In Guba’s model of trustworthiness (Guba, 1981), neutrality refers to the “degree to which findings are a function solely of the informants and conditions of the research and not of other biases” (p. 77). This was achieved by decreasing the distance between myself and the participants. Guided by the principles of AR, I optimised the collaborative partnership I had formed with midwives, creating a neutral relationship where equity and democracy were prioritised. At times I felt somewhat an ‘insider’ as I am a midwife and the experiences shared by the participants resonated with my own experiences as a midwife and advocate for EBP. Feeling this connection with participants enabled me to enact prolonged engagement, lessening the distance between myself and the participants as the research journey progressed through the various stages of AR.

Ethical considerations

Ethical approval for this study was granted by Edith Cowan University Human Research and Ethics Committee on 30th January 2019 (No. 2018-00007-DELEO) (Appendix H). Only negligible risks to participants were anticipated and none eventuated. Regarding the ethical considerations required for this study, it is important to acknowledge that AR is a process of inquiry founded in human engagement. Consequently, there is a need to follow ethical guidelines to protect participant involvement throughout the research process. These rudiments are underpinned by respect and integrity for human interest and the management of ethically responsible research (McMurray et al., 2004). I was bound by a duty of
care to ensure that the partnerships developed throughout the research process were based on the principles of beneficence, respect for human dignity and justice. These three principles will be briefly discussed.

**Beneficence**

The ethical principles of beneficence are concerned with keeping participants safe and removing potential harm so that the benefits of research outweigh the risks (Schneider & Whitehead, 2014). Before commencing this study, I assessed for risks of potential harm and concluded the benefits of conducting this study were significant and outweighed any potential harm that may occur as a result of participating in this study. The negligible risks identified involved loss of time for participants, possible disclosure of personal identity and a small risk that some participants may experience emotional distress relating to sharing personal experiences. To minimalise the chance of these risks eventuating, I endeavoured to co-ordinate all interviews at a time most convenient for each participant in an environment that was private and comfortable. Where possible, I travelled to meet with participants so they did not have to commute, also offering to collaborate with participants via telephone or Zoom. All participants were assigned a pseudonym to ensure confidentiality during interviews. Data collection, data analysis and safe-keeping of transcripts was completed by myself and shared with permission among members of my supervisory team. Member-checking included only my supervisory team and consenting participants of the study. All participants were updated on the progress of the study and I remained contactable throughout the research process for questions or discussion about the progress of the study.

**Respect for human dignity**

Respect for human dignity relates to participants having the right to make self-determined choices without consequence or being penalised for their actions (Schneider & Whitehead, 2014). Participating in this study was a voluntary action, where participants were provided with an information sheet followed by a consent form if they agreed to commit their time and involvement in the study. All participants were given opportunity to ask questions prior to being interviewed and
were informed they could withdraw at any point of the study if they wished. There were no participant withdrawals.

Justice

In a broad sense, the ethical principle of justice refers to the enactment of sharing the benefits of research with society as a whole, giving all persons opportunity to participate where possible in scientific research (Schneider & Whitehead, 2014). The practice of justice within this research was concerned with safeguarding the privacy of participants to ensure those consenting to participate in the study were not subjected to subsequent inequality or bias. All participants were recruited for their knowledge and expertise in implementing EBP, thus they were able to fulfil the objectives of the study. Following data collection and transcribing, audio recordings were deleted from software. Throughout the study all transcripts and personal information relating to participants, along with their consent forms, hard copy transcripts of their interviews, raw data, memos and notes were locked in a filing cabinet in the School of Nursing and Midwifery that only I have access to. All data will be archived according to the Edith Cowan University Research Ethics Manual (REM)

Summary

This chapter has presented an overview of the methods undertaken for this study and clarified the research aim. The study design and the four AR research stages have been presented to demonstrate their relevance within the study design. The methods used for data collection and analysis were described and the intervention development process clearly outlined. Last, measures for trustworthiness and the ethical considerations used to ensure rigour and confirmability of this study were presented. In chapter five, the findings of this study are presented in detail.
Chapter Five: Findings

Introduction

The information provided in chapter four described in detail the methods used to undertake this study, together with the ethical and trustworthiness measures used. In chapter five, I present the findings of this study, described in a publication titled: “Midwifery leaders’ views on the factors considered crucial to implementing evidence-based practice in clinical areas” and a manuscript currently under review: “Exploring the usability of the COM-B model and Theoretical Domains Framework (TDF) to explore the underlying helpers and hindrances of evidence-based practice in midwifery”. Together these represent the experiences of 17 Australian midwives who shared their personal accounts and views on implementing EBP, reflecting on the helpers and hindrances of evidence-based change in clinical areas.

Paper two: “Midwifery leaders’ views on the factors considered crucial to implementing evidence-based practice in clinical areas”

The second paper was accepted on 1st September 2020 with Women and Birth, articulating midwifery leaders’ views on the factors considered crucial to implementing EBP in clinical areas. The findings were derived from the introductory focus group workshop and face-to-face interviews, which were analysed and grouped into six sub-categories. These were then merged into three major categories, from which one overarching core finding was developed. This is presented as an interpretive statement: “To lead implementation of EBPs, midwives need practical solutions and a map of the process, packaged into a centralised web-based resource”.

Together, these findings depict the overarching experiences and opinions of eight midwifery leaders, who had either overseen or led a practice change initiative in their workplace. The manuscript is provided in full below.

**Abstract**

**Problem:** The evidence-to-practice gap continues to persist in healthcare and midwives report limited knowledge and use of effective intervention strategies to support the implementation of new evidence-based practices in clinical settings. Background: Despite ongoing development and dissemination of high quality research findings, the translation of latest research evidence by midwives into new evidence-based practices remains sub-optimal. This inefficiency places consumers at risk of obsolete or potentially dangerous healthcare interventions.

**Aims:** To explore midwifery leaders’ views on what information and support midwives require to lead practice change initiatives in clinical areas.

**Methods:** The study formed part of a broader Participatory Action Research (PAR) project designed to improve the processes by which midwives implement evidence-based practice change in clinical settings. The study employed a qualitative design and was guided by the methodological underpinnings of Action Research (AR).

**Findings:** The study findings emerged from a multi-level analysis and objectives of the study. To lead implementation of evidence-based practices, midwives need practical solutions and a map of the process, packaged into a centralised web-based resource.

**Discussion:** The findings reported in this study provide valuable insights into the specific needs of midwives wanting to improve the uptake and longevity of new evidence based practices in clinical areas. This includes information specific to evidence implementation, support networks, and knowledge of implementation Science. Conclusions: To lead practice change initiatives, midwives require a web-based resource that standardises the processes of evidence implementation, while providing midwives with clear direction and the support needed to confidently champion for evidence based change in clinical areas.

**Introduction**

There is universal recognition that evidence based practice (EBP) should be the cornerstone of all healthcare services [1]. It is associated with improved health outcomes, the cost-effective use of resources and has significant financial gains for the wider economy [1]. However, the currency of empirical evidence used in clinical settings is varied and the delay between scientific discovery and its translation into day-to-day practice requires...
focused thought [3]. While there is always likely to be inconsistency in the uptake of research into clinical areas, the proportion of consumers receiving non-evidence-based care indicates current variations remain unacceptable [4].

Healthcare systems often experience challenges initiating effective evidence-based change and the process of implementation is reported to be both complex and challenging [5]. Additionally, change initiatives are often implemented haphazardly, resulting in low rates of adoption and workplace resistance to change [5]. There is little agreement on how change in healthcare systems is best implemented and a lack of empirical evidence persists on how to guide the process of initiating effective change [6]. Efforts to improve systems for implementing change largely reflect the seminal work of Kurt Lewin and his three-step model Unfreeze-Change-Refreeze [7,8]. This model has been coined as the fundamental approach to change management, although Lewin’s model has also been criticized for being inflexible and unadaptable in complex environments [8]. Alternatively, behavioral interventions have also been sought to support practice change initiatives, although varied rates of success and the failures of successful implementation remain uncertain [9]. More recently, various models and frameworks have been developed to both inform and improve the process of evidence implementation [10]. For example, an adapted version of the Promoting Action on Research Implementation in Health Service Framework (PARR) has been successfully used to facilitate practice change in nursing contexts [11], however this framework is yet to be tailored in midwifery. The majority of existing frameworks and models are derived from the field of implementation science [15], a relatively new discipline dedicated to addressing the challenges of implementing evidence-based change [3].

Implementation science [15] has emerged in recent years as the scientific study of interventions and processes that maximize the use of knowledge acquired from research in healthcare [12]. Interest in IS is growing primarily in recognition of the complex challenges clinicians face when initiating evidence-based change [13]. The early proponents of IS introduced a range of methodologies and theories intended to support the implementation efforts of both researchers and clinicians, however these have largely been adapted from the field of psychology and although they have been tested in various healthcare settings, definitive indications of what works and in what context have yet to be reported [12]. Debate has ensued over the usefulness of stand-alone evidence implementation resources [14], which highlights the potential for combining key components of these resources together in ‘bundles.’ Collectively, bundling promises a coalition of evidence-based information packaged in a way that is practical and actionable for clinicians on-the-run [15].

The suggestion that implementation bundles may provide a solution to the evidence-to-practice gap reflects a wider recognition of the benefits of bundling in healthcare. Used to solve complex problems, care bundles have been reported as useful to clinicians in delivering a streamlined way of improving processes of clinical care and patient outcomes [16]. Bundles represent a cohesive unit that requires all elements to be deployed in order to attain the intended outcome; the all-or-nothing feature reiterates the necessity of bundles’ effectiveness. On this premise, evidence implementation bundles may be useful to establish best practices through a collection of interventions that midwives can follow in order to implement effective and timely sustained practice change. Care bundles have proven effective for optimizing patient outcomes in a range of healthcare settings [15,17], and it is possible that evidence implementation bundles may have potential for optimizing the uptake of EBP in midwifery services. Similar to bundles, toolkits have also emerged as a means to guide the process of implementation in healthcare [18]. One such toolkit, the UK NHS ‘spread and adopt tool’ has been tested for suitability in Australian midwifery contexts [14], however the use of both bundles and toolkits for evidence implementation in both midwifery and maternity care remains under-reported.

The use of healthcare providers, midwives are both expected and motivated to embrace EBP but acknowledge that latest evidence is not always utilized in day-to-day care [14,19]. Factors that prevent the practice of evidence-informed care include time and budget constraints, a lack of knowledge on implementation processes, resistance towards change and lack of logistical support, all of which contribute to the challenges midwives experience when implementing new practices or policy [20]. The problem of translating research findings into clinical care has been labelled a ‘black box’; it is complex, and midwives are uncertain of the pathway to practicing evidence-informed care [19]. This leads to inconsistency both in the uptake of EBP and the long-term sustainability of change initiatives [21]. Undoubtedly, the discipline of midwifery is committed to ensuring women and newborns benefit from EBP and midwives are well-placed to lead change initiatives [22]. To achieve this, and before evidence implementation bundles or toolkits can be devised and tested, the profession requires knowledge of what tools are needed to support midwives to successfully implement EBP.

Aim and objectives

The aim of the study reported in this paper was to explore midwifery leaders’ views on what midwives need in relation to implementing timely evidence-based change in clinical settings. The objectives of the study reported in this paper were to establish: what tools midwifery leaders with change management experience consider midwives need to confidently and competently implement EBP; and how expert midwifery leaders recommend this resource be packaged for midwives wanting to implement evidence-based change in clinical areas. The objectives were addressed in turn. Hard data emerged from the data collected in relation to objective one that participants felt midwives change leaders needed not to implement EBP; objective two would have been rendered null and void.

Methods

Study design

This study formed part of a broader Participatory Action Research (PAR) project designed to improve the processes by which midwives implement evidence-based change in clinical settings. For the study reported in this paper a qualitative design, specifically Qualitative Description, was employed.

Qualitative description

Guided by the principles of qualitative research, we endeavored to foster an in-depth understanding of the factors considered crucial to implementing evidence-based change in this study. This style of research is often derived from the tacit knowledge and lived experience of participants [23].

Qualitative description (QD) is an approach that is widely used to describe qualitative studies in healthcare, where events or experiences shared provide insight into a poorly understood phenomenon [24]. It is also the approach of choice when "a straightforward description of a phenomenon is desired or sought to develop and refine hypotheses or interventions" (p.2). We took a position of empathetic neutrality to ensure unbiased interpretation and representation of the experiences shared with us in this process [23]. All members of the research team are registered midwives.
with experience in leading or following change initiatives; this meant that the potential for these experiences to influence data collection, analysis and meaning-making existed. Careful critical reflexivity was therefore used at all stages of this study to ensure objectivity was maintained.

Setting

The study was conducted in Perth, Western Australia.

Recruitment

Participants for the study were purposely selected for their experience in midwifery leadership positions from which they had overseen change initiatives. Recruitment was by invitation through all Directors of Midwifery in West Australian public health sector maternity services. Eight midwives in leadership positions were nominated by their Directors, and these midwifery leaders were then sent an electronic invitation to participate in the study. The invitation email included a plain language information sheet outlining the study and a consent form. All midwifery leaders accepted the invitation to participate in the study and consented to participate in either a focus group discussion or face-to-face interview.

Ethics

Approval to conduct the study was granted by the Human Research and Ethics Committee at King Edward Memorial Hospital, Western Australia on 10 January 2019. Vorcons to the participants or the researchers was anticipated and none occurred.

Data collection

Data were collected through two approaches: a single focus group meeting and one-to-one interviews. Author One and Author Two co-facilitated the focus group, and Author One conducted all interviews. The focus group meeting was held in July 2019 with five of the participants who were facilitated to move through four discrete discussion periods focused on midwifery experience of implementing evidence-based change, the information and tools midwives considered important to implementing practice change, other factors that should be included in an implementation resource for midwives (if any), and how these should be packaged and delivered (if at all) to best suit the needs of busy midwives working in clinical areas (Table 1). Nominal Group Technique (NGT) was employed as the method for generating priority information, which is based on ranking ideas or concepts that evolve from group discussion and consensus. This technique employs a four-step protocol that involves introduction and explanation of the problem or issue, generation of ideas, group discussion and prioritising concepts for future action phases [25].

All participants were given equal opportunity to share their professional experience and tacit knowledge of implementing EBPs,

and their ideas on what, if any, should be provided to midwives to facilitate the evidence implementation process. Discussions were audio-recorded with consent and then transcribed for data analysis. The focus group meeting was co-facilitated by Authors One and Two over three hours.

Due to professional commitments, three midwifery leaders who had agreed to participate were unable to attend the focus group meeting. However, these midwifery leaders consented to participate in individual interviews, two of which were conducted in a private workplace setting and one over the phone (25-40 min long). The interviews were guided by the four discussion points explored during the initial focus group meeting (as described earlier).

Data analysis

The transcribed audio-recordings from the focus group meeting and the individual interviews were explored using reflexive thematic analysis as described in Braun and Clarke’s approach [26]. This qualitative technique comprised of preliminary familiarisation with the data, which generated initial codes (level one findings) that were then collated into meaningful groups (subcategories). These were further collapsed into major categories and an overarching core finding. The initial coding and development of categories were discussed by authors One and Two, and thereafter all authors reviewed each stage of thematic analysis and additional refinement of the categories occurred. The final iteration of the findings was unanimously agreed upon by all authors.

Trustworthiness

Trustworthiness is, in essence, the result of the measures qualitative researchers take to demonstrate that a study has been conducted rigorously. Growing in popularity is flexibility for researchers to develop their own list of criteria for trustworthiness that are justified by the research undertaken and other grounds such as the methodology chosen, the researchers’ philosophical position and the phenomenon of interest [27]. Specific to this study, a number of measures were employed to ensure trustworthiness and rigour of the research process. An audit trail was developed from memos and field notes taken during the focus group meeting and individual interviews. This involved carefully recording observations, comments and future action plans. Data validation was also confirmed, where authors individually evaluated the data sets, then worked collaboratively to identify common patterns and themes that emerged from the findings. Lastly, peer analysis was sought, whereby the authors’ academic peers formed a panel of midwifery practice experts to check the data analysis trail and the overall research process. No changes were suggested from these interventions.

Findings

Each participant consenting to partake in this study had extensive experience in leading change initiatives or embedding workplace change within their organisation. One hundred and forty-six level one findings were extracted from the transcribed data between September–October 2019. From these one overarching core finding, expressed as an interpretive statement, emerged that fulfils the aims and objectives of the study. Three major categories underpin this core finding, which were collapsed from six sub-categories (Table 2). The findings draw on the participants’ understanding of the knowledge and skills that are crucial to midwives’ implementation of EBPs in clinical settings.

The findings also highlighted various contextual factors that participants knew would very likely impinge on midwives’ ability...
to implement new EBPs specifically in midwifery practice contexts (reported elsewhere).

Core finding: to lead implementation of EBPs, midwives need practical solutions and a map of the process, packaged into a centralized web-based resource

The essence of the message that participants conveyed about what midwives need to be effective changes of change is a map of the process towards change and a plan for how you implement it (MW7). Further, all participants acknowledged the potential for web-based technologies in midwifery, and that, as characterised by MW9, “to move midwifery forward, midwives must be adequately skilled and equipped to move evidence into practice.” Similarly, all participants agreed that midwives can be champions of change if given, as MW5 put it, “a map of the process” or, as MW9 said, “to reduct tool that shows us black and white what we need to do.” The feelings of all participants were captured in a statement by MW1, who acknowledged that “midwives crave the ingredients, how to successful change but just make it practical for them.”

The core finding is underpinned by three major categories, which explore the factors participants viewed as crucial to the design of an evidence implementation resource for midwives.

Major category 1: consider digital technology and design a resource that’s accessible and practical for on-the-run midwives

This major category was developed from three sub-categories and twenty-five ideas. One finding, which together represent participants’ views about midwives’ use of digital technology in clinical settings and the implications of accessing web-based platforms during work time.

Sub-category 1: midwifery is moving towards a digital era but access to WIFI is not always possible in practice

Accessibility to resources that require internet connectivity was a significant factor explored by participants, who acknowledged both the convenience and limitations of using web-based technologies in clinical settings. MW4, for example, reflected on digital platforms and noted that “not all accessible or compatible with workplace desktops … and organisation firewalls present some platforms from being accessed by staff.”

WiFi connectivity was an issue for one participant, who stated that “access … can be difficult in some clinical areas” (MW1), while in contrast other participants affirmed that “our WIFI is great” (MW4 and MW5). In terms of the ideal device to use, MW8 commented midwives don’t get near desktop computers during work time, so mobile stations are more effective in practice.” The problem with this, though, in the participant’s eyes, was that being on a mobile device while at work was perceived to be unprofessional by some. This issue is outlined in the next sub-category.

There was agreement among participants that midwifery is currently, as one midwife stated, “so far behind in the digital space” (MW4), and agreed with MW5 that “there’s still a lot of work to do to make midwifery fit for digital change.” However, they recognised that there had been progress in recent times, as MW6 noted we’ve come safer in the last few years. Nonetheless, the sample all subscribed to the view that, as MW4 put it midwives “need to be at the forefront of technology, as well as the bedside with women.”

Sub-category 2: staff use work tablets and desktop computers the most; personal devices can be seen as a barrier to care

The use of personal devices in clinical areas was deliberated at some length by participants, with varying sentiments evident in the sample. MW1 suggested that the use of personal devices during work time creates “barriers in multidisciplinary”， MW4 agreed, stating “clients see phones as a barrier,” and went on to share that “access to Mobiles is being withdrawn in many work environments,” which MW2 confirmed when she said “social media issues are the negative perception of service users towards midwives using personal devices during work time, that’s caused access to mobiles being withdrawn in many health services.” During work time, MW3 asserted “staff use work tablets and work on tablets.”

Table 2

<table>
<thead>
<tr>
<th>Core finding: To lead implementation of EBPs, midwives need practical solutions and a map of the process, packaged into a centralized web-based resource</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major category 1</strong>: Consider digital technology and design a resource that’s accessible and practical for on-the-run midwives</td>
</tr>
<tr>
<td><strong>Major category 2</strong>: To lead change initiatives midwives need knowledge of implementation processes, packaged into a centralized resource</td>
</tr>
<tr>
<td><strong>Major category 3</strong>: To firmly embed change, the resource should be placed in a network and linked midwives together</td>
</tr>
<tr>
<td>Sub-categories</td>
</tr>
<tr>
<td>Midwifery is moving towards a digital era but access to WIFI is not always possible in practice</td>
</tr>
<tr>
<td>Staff use work tablets and desktop computers the most; personal devices can be seen as a barrier to care</td>
</tr>
<tr>
<td>We need a standardized, centralised, measured and supporting tool to measure, implement and provide solutions that involve change at midwives and women</td>
</tr>
</tbody>
</table>

Please cite this article in press as: A. De Leo, et al., Midwifery leaders’ views on the factors considered crucial to implementing evidence-based practice in clinical areas, Women Birth (2020), https://doi.org/10.1016/j.wombi.2020.08.013
sion to discern the most.” This comment was offered by MW6, who argued that “mobile stations and mobile computers provide staff with an ideal platform to access evidence-based information.” The majority of participants supported this view and considered web-based technology to be the ideal platform for hosting an implementation resource for midwives.

Sub-category 3: bring it back to a safety and quality perspective: provide midwives with applicable solutions to implementing EBP and factor in more time

When discussing the feasibility of a web-based resource for midwives, consideration of operational factors was considered vital. Budget implications were raised, with MW4 like others, querying “how much will this cost to implement and run?” and “is this going to save us money?” MW7 offered “this is going to save you money” and urged others to “… bring it back to a safety and quality perspective.” Another participant reinforced MW7’s assertion, suggesting the need to invest in a resource that enables midwives to effectively implement evidence-based change: she was very sure that “there would be an upward trend in health statistics for women, and more efficient, effective and high quality midwifery services across the state” (MW5) as a result.

All participants agreed that an implementation resource designed for midwives would need to be, as MW3 said, provided in the form of “practical, applicable information” when working. The participant went on to suggest there is a need to “make something that is readily and easily accessible to midwives who are always on-the-run.” MW6 agreed, and suggested an “on-the-run resource might work best.” Mobile Apps as a platform to access evidence-based information were considered to have potential by several participants, who regarded them as an applicable “solution to midwives” working on-the-run. For example, MW6, whose working day involved being in a clinical setting stated: “I love Apps and use them all the time” and MW8 offered that “there are some amazing Apps as resources for healthcare providers.”

The need to provide midwives with enough time to implement evidence into practice was highlighted as a key factor when considering midwives capacity to implement new EBPs in clinical areas. MW5, for example, acknowledged that “midwives are time poor” and have “no built-in time allocated to implement practice change initiatives.” This was agreed by MW2 who suggested that “for midwives, they’re just so busy delivering direct care, they just don’t have the time to do it-cursive evidence-based change!” MW5 captured the feelings of all participants, asserting that “the current model of practice is not enough time or energy to do the [Implement EBP on demand].” Factoring in more time for midwives to implement new EBPs was considered a key component to the success of translating evidence into EBP as all participants agreed that midwives require more time during work hours dedicated to practice-change initiatives.

Sub-category 4: we need a standardised, centralised resource with step-by-step instructions and practical solutions that involve change leader midwives and women

All participants agreed that to implement practice change midwives require a resource that delivers “simple, clear instructions and implementation strategies for midwives” (MW3 and MW5). MW6 suggested that “having a series of steps that demonstrate the implementation process would be fantastic” for midwives, while MW1 and MW6 agreed the resource should incorporate “a number of domains that provide evidence-based information on how to initiate workplace change” and “visual prompts to map the process.”

It was agreed that a centralised, standardised resource could facilitate midwives’ efforts to initiate evidence-based change in clinical settings, MW1 suggested “put all the components to successful change together in a resource, then put it out to midwives through the Australian College of Midwives.”

Other participants discussed potential design elements. For example, MW6 suggested “by all means develop an online resource, but you could have a resource manual also,” and MW2 voiced “perhaps a standardised policy and learning package to improve practice would be useful” for midwives. However, MW5 highlighted the reality of embedding a new resource into clinical areas, cautioning that “it depends on the resources you’ve already got and the people available to embed the resource into the workplace.”

The consistent factor expressed within this sub-category was participants’ assertion that a resource designed for midwives couldn’t, as MW6 said, “be labour intensive because that’s not feasible for midwives.” MW5, one participant suggested “if we know how to do it, step-by-step, we could do it [Implement EBP].” Another important factor highlighted by MW6 was that “midwives just want instantaneous, tell us what to do without all the frills.” This resonated with MW5 who stated “give us the gist of it without referencing all the minor details.” It was clear that all participants agreed midwives want direct, unambiguous information that is relevant and useful, as MW7 put it, “tell me what I need to know in order to implement a practice change.”

Sub-category 5: midwives need knowledge of the implementation process in the resource: explain the starting point of change and map the process

Every participant suggested that outside of not knowing how to progress practice change, the majority of midwives also, as MW7 said, “don’t even know where to start.” Two participants suggested that “we [midwives] under-estimate the starting point of change” (MW1 and MW4), and MW4 went on to say she was surprised that “more midwives aren’t better at this [implementing change] given that midwifery is a forward thinking profession.” What all agreed on though was that, as MW3 said, “if we really want to use midwives putting evidence into practice… it’s about knowing the process.

In relation to informing midwives about effective implementation processes, participants recognized that there may be lessons to learn from elsewhere. MW2, for instance, queried “what are other hospitals doing nationally and internationally?” MW6 asked “what is happening in similar environments around the world?” and MW2 suggested that providing midwives with “examples of how change processes work elsewhere might be useful.” The approach proposed by MW8, like others, was to provide midwives with “a map of the process” on how change [new EBP] is implemented.

Sub-category 6: change leader midwives and women need to be included in the process of developing the resource because they are central to the success of all change initiatives

An essential step to implementing new EBPs according to the participants, who had all done it, was to recognize that, as MW5 put it, “if you want to firmly embed change, you need to include the midwives.” MW7 supported this and suggested midwife change leaders should “bring everyone together to swap and share notes, because you get better results when you include staff.” MW4 agreed and added “yes involving the staff in everything seems to embed the change more easily.” A consistent view expressed by participants.
was that “we need to have more honest conversations with our midwives” (interpretative statement voiced by a midwife). For example, “what do they need and what will work in practice?” (MW7). MW8 suggested “get some midwives in the room and ask them, what will work for you?” MW1 captured the general feeling from all participants in her closing statement “take it back to the midwives, ask them what they need.”

The majority of participants viewed the woman as the real force behind change initiatives. For example, MW3 noted “the woman is at the centre of all change initiatives.” This view was substantiated by two other midwives who agreed “you must involve the women too” (MW7) and “involving the consumer, because they’re so powerful” (MW5). A final comment by MW3 resonates with the midwifery philosophy and the values midwives place in the partnership between women and midwives: “change is about responding to consumer demand, so we must consider women also when we talk about change.”

Major category 1: to firmly embed change, the resource should help build a network and link midwives together

This major category was derived from twenty-one observations that present midwifery leaders’ views on the mechanisms needed to support midwives leading change initiatives in clinical areas. All participants subscribed to the view that a “how to” evidence implementation resource for midwives should be co-created with midwives. This would provide the tools and information midwives need to bring about evidence-based change in clinical areas. MW5 characterised the sentiment of all when she said “let’s … midwives take ownership of it”. Similarly, MW3 said that a resource designed for midwives “has to be driven by us [midwives] and not the organisation.” MW7 agreed, and voiced “if you want to make a change, there is power in numbers, there is strength in a network and your colleagues are the people who can help” (MW5).

Further to the suggestion that change leaders midwives would benefit from the support of others, creating a hub for midwives to share information relating to implementing EBP was considered by participants to be a key factor in building a supportive network for midwives. One participant suggested “it all comes down to communication,” and “sharing new information builds the connection between midwives, which leads to a network of support” (MW5). MW7 agreed, stating “change is all about communication, finding someone to coordinate the project and be the change agent.” Building was also considered a “shark way for midwives to share information and brainstorm ideas with a colleague” (MW3). MW5 suggested “organising midwives with change leaders might be useful” to improve the confidence levels and knowledge of midwives wanting to implement practice change. MW2 agreed, suggesting meeting midwives with “someone who’s had a positive experience with practice change, so you don’t get all these negative stuff midwives don’t want to hear” may be useful to change leader midwives working in change-resistant settings.

Discussion

This study reflects the professional experience and tacit knowledge of eight midwifery leaders, who collectively identified the factors they perceived were needed to facilitate EBP in clinical areas. The overarching finding, “to lead implementation of EBP, midwives need practical solutions and a map of the process, packaged into a centralised resource,” emerged from three major categories. The resultant six sub-categories collectively addressed the aim and objective of the study.

Change is inevitable in healthcare systems and within maternity services midwives, like other care providers in their own practice environments, are perfectly positioned to lead change initiatives [28]. The implementation of change in complex practice settings such as these wherein midwifery happens requires clear change management processes and leadership to ensure planned initiatives are clearly understood, implemented and effectively embedded in a timely manner [16]. Mapping the implementation process is an integral part of addressing the challenges associated with implementing change [5]. As healthcare organisations face increasing pressure to implement best available evidence in a timely manner, midwives express uncertainty in the implementation process and translation of latest research findings into everyday care [26].

Traditionally, evidence-based improvements in healthcare have largely been assessed to occur through the introduction of Clinical Practice Guidelines (CPGs) [29]. These are intended to offer concise, evidence-based instruction for clinicians working in practice environments and aim to ensure clinicians provide quality healthcare practices based on best available evidence. However, while CPGs offer direction at the point of care there remains limited knowledge of the processes needed to ensure EBP is implemented and consistently performed in clinical environments [51]. Recognition of this problem, advances in mechanisms that support evidence implementation are increasingly sought.

Lewin is widely considered the founding father of change processes and his seminal three-step: unfreeze-change-freeze model is considered fundamental in managing change processes [7]. In recent years, numerous authors have adapted components of this model to address various contextual barriers such as organisational resistance, time constraints and other issues associated with organisational readiness for practice change [5]. However, implementing change remains a challenging proposition for many healthcare professionals [32]. Understanding implementation processes are crucial to resolving the time lag between the synthesis of new evidence and its subsequent implementation into healthcare policy and practice [33]. The findings of this study suggest midwives require knowledge of these processes to effectively embed new EBP into everyday care.

The outcomes of this study resonate with those already reported on the topic of implementing evidence-based change in healthcare. These include time organisational support, interdisciplinary collaboration, planning and focused processes [34]. The absence of these factors has previously been described as barriers to evidence implementation and, as such, evidence-informed care [29]. Midwives are known to value EBP but continue to face challenges when trying leading practice change based on best available evidence [35]. The findings from the study reported herein support this, highlighting the potential for a midwifery specific resource that facilitates the implementation process.

The use of implementation resources, broadly defined as a set of theories, models and frameworks designed to improve the uptake of EBP, are thought to guide practitioners’ implementation efforts by identifying the determinants that action change initiatives [36]. When employed in real-time, implementation resources have been viewed as a practical tool in supporting the scale-up of interventions and their integration into health systems at both a local and organisational level [15]. A limited number of these resources have proven valuable and adaptable to the complex issues associated with healthcare, although the efficacy of using existing implementation resources across practice settings remains unclear [37]. More recently, an iSP project conducted by Australian midwives described the difficulty of embedding change in midwifery contexts, and acknowledged that the success of implementing evidence into practice improves when a robust framework and structured process is applied [38]. This echoes participants views in this study and the subsequent finding that emerged during data analysis. At the time of writing, there has been little reported exploration of the practicality of such tools in midwifery practice and although implementation resources are

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considered useful, midwives lack awareness and knowledge of their value in.Similar practice change [11].
There have been numerous challenges reported by healthcare providers using existing implementation resources to facilitate practice change [39]. These illustrate the incompatibility of such resources with the needs of midwives, being reported as too complicated and lacking capabilities specific to the needs of midwives working in clinical areas [32]. Possibly, this is a reflection of the limited collaboration between clinicians and midwives, which has limited the successful adoption of implementation resources in clinical practice, as they are designed and intended for other contexts. This implies the need for a more tailored approach to improving implementation processes in midwifery and confirms the need for a midwifery-specific resource to support midwives implementing EBPs in clinical areas.
Our participants proposed that a web-based resource would be most useful to midwives to ‘do’ evidence implementation while at work, and evidence suggests that web-based technology may well provide a channel for supporting midwives to embed change in midwifery contexts. While the authors of this study acknowledge that some participants identified potential issues regarding WIFI connectivity and disruption to woman-centred care, this research provides insight into the future integration of better systems that support the use of technology and internet services at the point of care. Mostly, healthcare providers have expressed saturation with digital technology in clinical environments and report many advantages to the user; material can be centralised and accessed from most geographical locations; information can be re-visited at any time, and content can be presented in a format to both engage the user and facilitate the use of evidence-based information in clinical practice [40]. This not only provides prompt access to pertinent information but permits midwives to remain at the bedside with women, where EBPs are critically directed [41].
Collectively, these factors indicate a web-based implementation resource may provide the solution for midwives offering connectivity and support between midwives, access to available information on implementation processes and a step-by-step guide to efficiently implementing EBPs in clinical settings.
Also acknowledged in our study was concern that maternity care consumers’ views are considered. As highlighted, not all participating midwives’ perspectives, is central to all change initiatives and should be the focal point of future discussions relating to practice change. It is overwhelmingly evident that midwives want to provide gold standard midwifery services, but remain limited by many organizational and operational factors that hinder their efforts to translate new evidence into everyday midwifery care [30]. Providing midwives with the tools they require to implement EBPs effectively improve the quality of midwifery services and the health outcomes of childbearing women and their newborns.
The potential for midwives to benefit from the development of an evidence implementation resource is finite and remedial work to address the challenges midwives face in implementing best available evidence into practice in an active manner should be prioritized. This study clearly demonstrates the limited use and knowledge of existing implementation processes in midwifery, and the need for an evidence implementation resource specific to the needs of midwives working in clinical areas. Consideration for a ‘bundle’ approach to the implementation process, utilizing the strengths of multiple existing resources, may provide a pathway for developing an implementation resource appropriate for midwives.

Conclusion
The findings reported and discussed in this study provide valuable insights into the factors, according to expert opinion, considered crucial to improving the uptake and longevity of new evidence-based practices in clinical areas. It is anticipated the development of an evidence implementation resource for midwives will provide the tools needed for midwives to confidently lead practice change projects with confidence. To achieve this, further research is required to confirm what resources and support are required by midwives, and how this information should be packaged to best suit the needs of midwives working in clinical areas.

Ethical approval
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Conflict of interest
None declared.

Conflict of interest and authorship contribution statement
Anna-marie De Leo: Conceptualisation, Methodology, Investigation, Formal analysis, Data curation, Writing - original draft. Sara Bayes: Conceptualisation, Supervision, Resources, Investigation, Project administration, Data curation. Janice Buti: Validation, Investigation, Writing - review & editing, Supervision. Dianne Blazsom: Supervision, Writing - review & editing. Sadie Geraghty: Supervision, Writing - review & editing.

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Appendix A. Supplementary data
Supplementary material related to this article can be found in the online version, at doi:https://doi.org/10.1016/j.wombi.2020.08.013.

References
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Paper three: “Exploring the usability of the COM-B and Theoretical Domains Framework (TDF) to define the helpers of and to hindrances evidence-based practice in midwifery”

The third article was submitted in July 8th 2020 and remains under review with the journal Implementation Science Communications (Appendix F). The manuscript presents new insight into the usability of combining a behaviour change theory with a context assessment tool to diagnose the underling helpers and hindrances of implementing evidence-based change in clinical areas. The findings were derived from the data obtained during the introductory focus group workshop and face-to-face interviews, which were analysed using thematic analysis. One overarching core finding emerged, characterising participants’ views on what factors help or hinder the implementation of EBP in clinical areas. This is expressed and an interpretive statement: “Fear can stop change and midwives lack the confidence and knowledge to implement EBP, however stakeholder buy-in and strong midwifery leadership is advantageous.” This core finding is underpinned by four major categories, three of which represent factors that hinder the implementation of new EBPs in clinical areas, the fourth considers factors that help the process.

These major categories and their constituent categories and findings were mapped to a behaviour change theory (COM-B model) and context assessment tool (Theoretical Domains Framework), which when combined, proved useful for diagnosing the underlying helpers and hindrances of EBP. Together, these tools highlighted potential hindrances for midwives to address before initiating a new EBP, also emphasising the helpers or ‘leveraging factors’ midwives could employ to increase the likelihood of successful implementation outcomes. This manuscript (currently under review) is provided below, with the complete data set attached to Appendix G.
Paper three: Currently under review

TITLE: Exploring the usability of the COM-B model and Theoretical Domains Framework (TDF) to define the helpers of and hindrances to evidence-based practice in midwifery.

Abstract

Background

Despite the advancement of scientific research in the field of maternity care, midwives face challenges translating latest evidence into evidence-based practice (EBP) and express reticence towards leading practice change in clinical areas. This study aimed to explore midwifery leaders’ views on what factors help or hinder midwives’ efforts to translate latest evidence into everyday practice and consider them in relation to both the Capability, Opportunity, Motivation and Behaviour (COM-B) model and Theoretical Domains Framework (TDF).

Methods

This qualitative study formed part of a larger Action Research (AR) project that was designed to improve midwives’ EBP implementation capability. Data were obtained from eight Western Australian midwifery leaders who were employed in either managerial or executive positions within their organisation. Five midwives attended a focus group workshop and three opted for face-to-face interviews. Thematic analysis was used to code the transcribed data and group alike findings into sub-categories, which were collapsed to four major categories and one overarching core finding. These were mapped to a matrix combining the COM-B and TDF to establish the usability of these tools in midwifery contexts.

Results

Four major categories were developed from the data collected in this study. Three reported the hindrances midwives’ experienced when trying to initiate new EBPs: “For midwives,
medical opposition and workplace culture are the biggest challenges”, “Fear can stop change: it’s personal for midwives” and “Midwives are tired of fighting the battle for EBP; they need knowledge and the confidence to bring about practice change.” The other major category highlighted factors midwives’ considered helpers of EBP: “Having stakeholder buy-in and strong midwifery leadership is a huge advantage.” When mapped to the TDF and COM-B, these findings provided valuable insight into the helpers of and hindrances to evidence-based practice in midwifery.

**Conclusion**

Midwives are motivated to initiate evidence-based change yet have limited knowledge of implementation processes or the confidence to lead practice change. Factors such as interdisciplinary buy-in, clear instruction for midwives and support from midwifery leaders were considered beneficial to implementing practice change in clinical areas. The TDF when used in combination with the COM-B was deemed useful to midwives wanting to lead practice change projects in clinical areas.

**Contributions to the literature**

- The benefits of evidence-based practice (EBP) in healthcare are well reported, however low rates of adoption and inconsistent use of latest evidence in clinical areas remains challenging for midwives.

- We found the COM-B and TDF in combination were useful for exploring the hindrances and helpers of EBP in midwifery practice and would be beneficial to midwives wanting to initiate evidence-based change in clinical areas.

- The findings of this study provide empirical evidence about the helpers and hindrances of EBP in midwifery, highlighting the usability of Implementation Science (IS) tools and change theories to address the evidence-to-practice gap problem in maternity care.
Background

The benefits of adopting evidence-based practice (EBP) in healthcare are well reported in the literature (Friesen-Storms, Moser, van der Loo, Beurskens, & Bours, 2015; Waltz et al., 2014). However, after more than two decades of Implementation Science (IS) research and the development of over 60 implementation theories, models and frameworks, the evidence-to-practice gap remains a problem in healthcare (Gallen, Kodate, & Casey, 2019).

The implementation of behaviour changing interventions are recognised to be more effective when implementation theory is used compared with those that lack a philosophical approach (Glanz & Bishop, 2010; Hanbury & Wood, 2018). This is evident in midwifery, where the use of theory has been known to contribute to better understanding evidence implementation processes and projects aimed at behaviour modification (Forster, Newton, McLachlan, & Willis, 2011). One such theoretical framework, the ‘Capability, Opportunity, Motivation and Behaviour’ model (COM-B), also recognised as the ‘Behaviour Change Wheel’ (BCW), is widely used to contextualise individual-level change and the underlying determinants of what must occur in order to achieve organisational change (Michie, van Stralen, & West, 2011). The key premise of the COM-B lies in understanding how Capabilities (an individual’s capacity to engage in behaviour modifications), Opportunity (factors in the environment that influence individual behaviours) and Motivation (the willingness to change) can be used to generate actions that positively impact interventions targeted at behaviour change (Handley, Gorukanti, & Cattamanchi, 2016). These three domains are further divided into six sub-domains (Table 1) that capture the factors known to influence an individual’s capacity to adopt new behaviours (Keyworth, Epton, Goldthorpe, Calam, & Armitage, 2020).
Table 1: The domains of the COM-B, adapted from Keyworth et al. (2020)

Context assessment frameworks derived from IS research may also provide valuable insight into the challenges of implementing EBP. The Theoretical Domains Framework (TDF) builds on the systems identified in the COM-B to further uncover the underlying barriers and facilitators of evidence-based change (Cane, O'Connor, & Michie, 2012). Comprising 14 domains, the TDF provides a comprehensive grouping of the overlapping constructs within behavioural theories (McLellan, O’Carroll, Cheyne, & Dombrowski, 2019). These constructs expand on the 14 domains, providing clinicians with an explanation of the domains and their definition (Table 2).

<table>
<thead>
<tr>
<th>TDF domain</th>
<th>TDF construct examples</th>
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<tbody>
<tr>
<td>1. Knowledge</td>
<td>Knowledge or awareness of a procedure, practice or the existence of new evidence</td>
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<tr>
<td>2. Skills</td>
<td>The skills, ability and competences acquired through practice</td>
</tr>
<tr>
<td>3. Social/professional role and identity</td>
<td>The personal qualities, professional identity and professional role (including leadership) of an individual in a social or work setting</td>
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<tr>
<td>4. Beliefs about capabilities</td>
<td>The self-confidence, perceived competence and belief that an individual has in oneself</td>
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<tr>
<td>5. Optimism</td>
<td>An inner confidence that desired goals will be attained</td>
</tr>
<tr>
<td>6. Beliefs about consequences</td>
<td>Belief in expected outcomes, anticipated regret and the potential for consequences</td>
</tr>
<tr>
<td>7. Reinforcement</td>
<td>The offering of rewards, incentives, reinforcement and sanctions</td>
</tr>
<tr>
<td>8. Intentions</td>
<td>The conscious decision to perform a behavior or a resolve to act in a certain way</td>
</tr>
<tr>
<td>9. Goals</td>
<td>The prioritising of goals, action planning and implementation expectations</td>
</tr>
<tr>
<td>10. Memory, attention and decision processes</td>
<td>The ability to retain information, maintain attention and make informed decisions</td>
</tr>
<tr>
<td>11. Environmental context and resources</td>
<td>Awareness for environmental stressors, organisational culture, barriers and facilitators</td>
</tr>
<tr>
<td>12. Social influences</td>
<td>Awareness of social pressures, social norms and powerplay that can cause individuals to change thought patterns, feelings and behaviors</td>
</tr>
<tr>
<td>13. Emotion</td>
<td>Fear, anxiety or stress towards environmental events</td>
</tr>
<tr>
<td>14. Behavioral regulation</td>
<td>Breaking habits, self-regulations and action planning behavior.</td>
</tr>
</tbody>
</table>

Table 2: The Theoretical Domains framework with exemplar constructs, adapted from Cane et al. (2012)
Both the COM-B and TDF have previously been used in midwifery contexts to better understand the various behaviours of women during pregnancy (Flannery et al., 2018). However, there have been no advances on the usability of these tools with regard to EBP or the implementation of evidence-based behaviours in clinical areas.

Implementation Science knowledge is not commonly taught in midwifery education and although literature on the topic continues to inform midwives of the evidence-to-practice problem, it fails to provide clear direction on how to facilitate practice change activities (Nilsen, Neher, Eistrom, & Gardner, 2017). McLellan et al. (2019) report on midwives’ perceptions of the barriers to enacting EBP (such as increasingly heavy workloads, difficulty accessing appropriate training and lack of support), acknowledging the absence of interventions designed to support midwives’ address the barriers to enacting evidence-based behaviours in practice. There is an established body of literature on the barriers and facilitators of EBP in maternity care (Vogel et al., 2016), although limited literature exists on midwives use of IS resources to facilitate the process (Bayes, Fenwick, & Jennings, 2016). The purpose of this study was to address this uncertainty by exploring midwife leaders’ experiences of implementing EBP and testing the usability of the COM-B and TDF in midwifery contexts.

Methods

Action research (AR) was the underpinning methodology selected for this study. First coined by Lewin (1946), AR is described as a methodology explicitly founded on a partnership approach to problem-solving (Hart & Bond, 1995). Action research involves the simultaneous achievement of positive actions through four distinct stages: planning, action, observation and evaluation (Reason & Bradbury, 2001). Collaboration is fundamental
throughout each stage and participants are encouraged to both partake and contribute to the research process (Meyer, 2000).

**Study design**

This study formed the first phase of a broader AR project that was designed to improve midwives’ capability to lead practice change projects in clinical areas. Qualitative Description (QD) was employed to gain insight into midwives’ information, tools, skills and support needs with regard to introducing new evidence-based interventions or practices in the workplace. Qualitative description is an approach widely used in healthcare where activities or individual experiences provide insight into a poorly understood phenomenon (Kim, Sefcik, & Bradway, 2017).

**Population**

Participants were purposefully selected for their extensive experience in midwifery leadership roles in which they had either overseen or led practice change initiatives.

Recruitment was via an online invitation. Six Directors of Midwifery from six maternity service sites in Western Australia (W.A) were invited to nominate 1-2 midwives holding leadership positions within their organisation. Eight midwife leaders were nominated, and all consented to participate.

**Data collection**

Two methods of data collection were employed for this study: one focus group discussion comprising five participants and three face-to-face interviews for the remaining participants. Both methods of data collection were guided by four discrete discussion points focusing on participants’ experiences of initiating evidence-based change, the information and tools midwives consider important to implementing new EBPs, the factors that should be included in an evidence implementation resource for midwives (if any), and
how these should be packaged and presented (if at all) to best suit the needs of diligent midwives working in clinical areas (Table 3). The focus group workshop was facilitated over three hours and the semi-structured interviews each lasted approximately 60 minutes. All discussions were audio-recorded and additional field notes taken. All Participants were ascribed pseudonyms. What are your experiences of implementing evidence-based change in your organisation?

- What information or tools should be considered when developing an evidence implementation resource for midwives?
- What other factors should be considered when implementing new EBPs in clinical settings?
- How should this resource be packaged to best suit the needs of busy midwives working in clinical areas?

Table 3: Focus group and face-to-face interview discussion points

Ethics

Approval to conduct the study was granted by the Human Research and Ethics Committee at xxxx on 30 January 2019. No risks to the participants or the researchers was anticipated, and none eventuated.

Data analysis

Consistent with the QD approach, audio-recordings and field notes from the focus group workshop and face-to-face interviews were transcribed and coded through a process of parsimonious thematic analysis as described by Braun and Clarke (2006). This comprised generating initial codes that were then collated into meaningful sub-categories. These sub-categories were collapsed into major categories and finally, one overarching core finding emerged. Content analysis was employed to identify and group alike codes together, reducing the volume of text collected while staying true to the transcripts. The major categories and their constituent data were mapped to a matrix comprising the COM-B and
the TDF (Cane et al., 2012; Michie et al., 2011) (Table 4). This process was conducted by authors 1, 2 and 3, both independently and together, through an iterative course until consensus was achieved.

![Diagram of The COM-B and The Theoretical Domains Framework (TDF)]

*Table 4: The COM-B and TDF matrix (Cane et al., 2012; Michie et al., 2011)*

**Results**

There was unanimous agreement by all eight participants that midwives are passionate about EBP yet reticent towards leading change. According to participants, the reasoning behind this was midwives’ limited knowledge of implementation processes, medical opposition and a perceived lack of confidence to lead practice change activities. Seventy-two codes were grouped into initial sub-categories, which were collapsed to form four major categories. These major categories were then further collapsed into one core finding. Three major categories were identified as hindrances of EBP and one represented helping factors (Table 5).
Table 5: Example of the findings, highlighting the hindrances and helpers of EBP

<table>
<thead>
<tr>
<th>Example codes</th>
<th>Sub-categories</th>
<th>Major categories</th>
<th>Core finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>We didn’t think it was going to be an issue, well, the medical director refused to participate; they resisted…”</td>
<td>The stumbling block is medical opposition and workplace culture; they are two of the biggest challenges for midwives</td>
<td>Midwifery, medical opposition and workplace culture are the biggest challenges</td>
<td>Fear can stop change; it’s personal for midwives. Fear can stop change and midwives lack the confidence and knowledge to implement EBP; however stakeholder buy-in and strong midwifery leadership is advantageous.</td>
</tr>
<tr>
<td>‘I’ve received some really good feedback about what I wanted to bring in was actually there was so much resistance which stopped totally stopping the [EBP] project’ (MM1)</td>
<td></td>
<td>Knowledge and confidence</td>
<td>Midwives are tired of fighting the battle for EBP; they need knowledge and the confidence to bring about practice change.</td>
</tr>
<tr>
<td>‘Midwives think it’s too much hassle’ (Implementing new EBP was too much work when they’re in the middle of a busy day) (MM1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘It’s difficult to motivate them [midwives] when there’s so much change that occurs’ (MM1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘It’s hard work’ (Implementing EBP and the criticisms keep coming) (MM2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘We need our midwives to feel confident that they have research evidence to support their practice, and believe in their knowledge base’ (MM2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think because it was a middle-bits initiative we had initial buy-in, and that made a huge difference to the outcome of the project’ (MM2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘The overall midwives were resistant to change, I was about being the catalyst who was going to try to get the people who could actually implement the change’ (MM2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘It was the right stakeholders on board from the start, it’s a huge advantage’ (MM2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘You need buy-in at all levels’ (MM3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The outcomes of the analysis were then mapped to a matrix that combined the COM-B with the 14 domains of the TDF. It was anticipated that combining the behaviour-focused COM-B model with the TDF would result in a better understanding of what needs to occur for midwives to successfully implement new EBPs in clinical areas.

**Capability: physical and social**

Within the Capability system of the COM-B, three of the TDF domains (Knowledge, Skills, and Beliefs about capabilities) were described by participants, who described both physical and psychological capabilities (and limitations) towards implementing EBP. Most participants recognised that midwives have limited time to physically initiate and sustain practice change activities during work time, given their heavy workloads and rostering systems. One midwife voiced “change takes time and you also need to be present with women...you’ve got to manage
both and that’s sometimes not easy’ (MW7). All participants acknowledged the challenges of implementing evidence-based change during work hours, with the consensus being ‘if you’re not physically present, change just doesn’t happen’ (MW2). Similarly, MW7 shared her experience of trying to introduce bedside clinical handover in her workplace, stating midwives ‘seemed keen, but there was an unspoken resistance...and if I wasn’t physically present at handover time...it just didn’t happen.’ MW2 agreed as she recollected the effort required when she tried to introduce ‘peanut balls’ to birth suite midwives at her workplace: ‘we had all the evidence to support this equipment, paid for our midwives to attend workshops...and demonstrated the peanut balls increased our vaginal birth rates significantly.’ She went on to describe the resistance she experienced from staff, voicing frustration at the pace of change in clinical areas: ‘I still see the peanut balls put in the cupboard three months on and question is change actually happening here?...I have to be onto it, physically checking the rooms to make sure the balls are being used, and this equipment is evidence-based.’

With regard to midwives’ psychological capabilities, participants expressed midwives generally express reticence towards leading practice change, as MW6 voiced ‘we want to do it [implement new EBPs]...but can’t do it now.’ MW1 agreed, suggesting ‘it’s difficult...our midwives need to feel capable...that they have the ability and evidence to support new practices...but they don’t believe in themselves’. MW6 concurred, commenting that ‘midwives think it’s too much hassle [implementing practice change] and too much work when they’re in the middle of a busy shift.’ She later continued ‘it’s difficult to motivate them [midwives] when there’s so much change that occurs.’ Together, these sentiments aligned with the TDF domains, which enabled further exploration of midwives’ capabilities in relation to their knowledge, skillsets and behaviours towards implementing EBP.
Opportunity: physical and social

Two of the TDF domains (Environmental context and resources and Social influences) were identified in the codes and sub-categories as being suited to the Opportunity component of the COM-B. This was further explored with regard to the Opportunity sub-domains: physical opportunity and social opportunity. Participants articulated numerous social and organisational hindrances that hindered midwives’ efforts to introduce new EBPs. Social Influences were explored by MW5 who recalled conversations with one midwife who said ‘that sounds like a great idea, and in a perfect world if I didn’t need sleep, have my family and need to pay the bills I would [initiate practice change]...let’s wait till next year.’ Another midwife voiced that ‘midwives feel a lot of pressure to conform to organisational norms, and what’s right for the organisation does not always reflect our midwifery philosophy’ (MW2). Physically, participants expressed several hindrances to EBP, which aligned with the TDF domains that were mapped to Opportunity in the COM-B. For example, MW3 suggested the limited resources at her workplace were the biggest physical hindrance to EBP: ‘We don’t have access to reliable WIFI or a space that’s dedicated to midwives’ working on quality improvement projects.’ MW7 agreed, commenting ‘the success of change efforts largely depends on the resources you’ve got and the people available to embed practice change initiatives into work environments.’ These discussions led to participants identifying other various contextual factors that influenced change efforts, with workplace culture identified as ‘one of our biggest problems’ (MW3). This was exemplified by MW6, who shared her experience of trying to introduce sterile water injections as an option for pain relief in her organisation’s birth suites. She experienced ‘rumour mongering’ from ‘people working in the service who did not trust the evidence...it was a cultural thing.’ This was made more challenging by staff saying ‘I want to do it, but I’m too busy to make it happen (initiate practice change).’ MW1 shared a similar
experience when she tried to introduce water birth facilities at her workplace, disclosing ‘I’ve received hate mail from people thinking what I wanted to bring in was unsafe...there was so much distrust for a practice that is essentially evidence-based.’

The resistance experienced by all participants not only delayed the prospect of initiating evidence-based change but also lengthened the time it took to sustain new practices. This resulted in inconsistency in both the uptake and longevity of practice change projects.

**Motivation: Reflective and autonomic**

When mapped to the COM-B, the TDF domains identified in this system included: Behavioural regulation, Beliefs about consequences, Social/professional role and identity, Emotion, Optimism, and Reinforcement. Significantly, participants expressed reticence towards practice change. This led to aversion by some midwives, who reflected upon the problems and challenges associated with initiating evidence-based change. MW7 recalled a conversation with one of her midwives, who questioned ‘why are we changing things again?...we’re busy enough already...I just don’t have the time now’ (MW7). Participants also reported that many midwives were driven by automatic (emotional) responses to change, which often related to their personal views towards EBP and how practice change would affect their workload and professional responsibilities. One midwife quoted ‘I didn’t say I don’t believe in it [EBP], I just want to know how it’s going to affect my workload and income?’ (MW4). Domain 13 of the TDF (Emotion) provided a platform for participants’ descriptions of stress, fatigue and anxiety towards introducing new EBPs as reflected in a comment by MW8: ‘midwives are worn down, they’re tired and this affects their psyche.’ Another significant finding reported was that midwives’ fear initiating change. Largely this was attributed to the isolation and intimidation midwives experience when trying to introduce evidence-based change. For example, MW5
voiced ‘I’ve felt physically intimidated by colleagues who refused to accept the practice I was trying to introduce...I’ve shed a lot of tears...’ The TDF proved valuable in deconstructing this further, highlighting many midwives feel reticent towards practice change because they’ve observed the challenges other midwives’ experience when trying to introduce new practices into work environments.

Midwives motivation to implement a practice change was explored through domain seven of the TDF (Reinforcement), which also mapped to motivation in the COM-B. MW6 suggested ‘there’s not enough incentive to motivate midwives to change...mostly because there are so many changes occurring...it’s difficult to motivate them [midwives] unless you’re offering some kind of reward...and we can’t afford that’ (MW8). No participants reported reinforcement techniques as articulated within the constructs of Reinforcement (TDF domain 7).

Feelings of Optimism (TDF domain 5) resonated in the views shared by most participants, as exemplified by MW8, who said ‘I think they’ve (midwives) done amazing with embracing change...we can’t lose sight of that’. The constructs within this domain also reflect the Social/professional role and identity of midwives (TDF domain 3), which captures the professional responsibility of midwives to lead change initiatives in maternity care settings. MW3 reflected on these issues, suggesting ‘when we lead initiatives we get things done...and we don’t do things individually, you need buy-in at all levels...and we have to be united...all in or all out’. Arguably, MW4 captured the essence of Motivation in her thinking ‘to get to the point where we could actually introduce change, it was about being the squeaky wheel and getting buy-in from the people who could make a difference.’
Discussion

This study aimed to establish midwives’ views on the helpers and hindrances of EBP and tested the suitability of the COM-B and TDF to further explore the underlying factors that contribute to the timely adoption of EBP in clinical areas. This was achieved, although significantly none of the participants had previously considered or used IS tools to support their implementation efforts. This perhaps reflects the near absence of midwifery research relating to IS and offers an explanation for the persistent evidence-to-practice gap in maternity services. The findings of this study resonate with those reported by Bayes et al. (2016), who acknowledge the limited use of IS tools in midwifery despite their reported value in other healthcare contexts. This view is also consistent with literature reporting on the usability of the COM-B and TDF outside the discipline of midwifery (Asimakopoulou & Newton, 2015; Lynch, Luker, Cadilhac, Fryer, & Hillier, 2017).

In regard to this study, only two of the TDF domains were not identified in the findings: Intentions and Goals (TDF domains 8 and 9). This offers some insight into why participants experienced the challenges they reported and may provide direction for future implementation processes in midwifery. Although all participants set broad goals to implement evidence-based change, none specifically spoke of the processes they used to plan, implement, evaluate and sustain their implementation efforts. We do not assume these steps were not undertaken, rather highlight the need for midwives to consider goal setting and action-planning when implementing EBP. Although ongoing audit and evaluation were reported by two of our participants, none articulated how they intended to address behavioural change or recognised the value of incorporating IS processes in their implementation projects.
We considered this mapping exercise beneficial for diagnosing the underlying factors that both help and hinder midwives’ efforts to lead practice change initiatives in clinical areas. When used in combination, the COM-B and TDF were capable of highlighting where midwives must focus their attention to successfully lead practice change initiatives, while providing insight into what implementation strategies may be needed to address the individual and organisational hindrances of evidence-based change. In this context, the Expert Recommendations for Implementing Change (ERIC) may prove a useful tool for midwives planning to initiate practice change in clinical areas (Waltz et al., 2014). The ERIC tool comprises a compilation of 68 implementation strategies that provide a foundation for constructing intervention strategies aimed to improve to the outcomes of quality improvement projects (for example: Education, Training and Environmental restructuring). These are multi-dimensional and useful for targeting change innovations at both individual and organisational levels (Powell et al., 2015). Although not context specific, the ERIC compilation may be of use to midwives wanting to target intervention strategies specific to the implementation helpers and hindrances explored in this study.

Limitations

This study must be considered within the context in which it was conducted. Although the sample provided sufficient data to generate significant findings in this study, the participants represented a relatively small portion of experienced midwifery leaders from the W.A public health sector and we may have benefited from the inclusion of practicing midwives. Thus, it is possible the findings of this study may not reflect the wider implementation issues of practicing midwives in all maternity care contexts.
Conclusions

The findings of our study are essentially that midwives feel hindered to implement EBP for the following reasons: fear, lack of IS knowledge and confidence to lead practice change, workplace culture and medical opposition. Comparatively, having stakeholder buy-in and strong midwifery leadership were identified as helping factors for midwives wanting to initiate new EBPs in clinical areas. Employing the COM-B and TDF (in combination) to diagnose these hindrances and helpers proved beneficial in exposing the areas of focus midwives must direct their attention to address the challenges associated with initiating practice change activities. The findings of this study also provide valuable insight into how midwives might develop intervention strategies specific to the implementation issues midwives experience in clinical areas. Ultimately, this may lead to the development of evidence implementation processes designed to support midwives’ efforts to lead evidence-based change and address the persistent evidence-to-practice gap in maternity services. Midwives are key stakeholders in this venture, thus should be consulted in future research designed to improve the implementation of EBP in maternity services.

List of abbreviations

Implementation Science (IS), Evidence-based Practice (EBP), ‘Capability, Opportunity, Motivation and Behaviour’ model (COM-B), Theoretical Domains Framework (TDF)

Acknowledgements

The authors would like to thank the midwives’ who participated in this study.

Authors contributions

A.D, S.B, D.B and J.B jointly designed the study, conducted all analyses and drafted the manuscript. A.D, S.B and D.B assisted in data collection and manuscript revisions.
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**Authors contributions**

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**Funding**

No funding was received for this study.

**Ethical approval and consent to participate.**

The Human Research and Ethics Committee at XXXXXX in XXXXXX approved the study. No risks to the participants or the researchers were anticipated, and none eventuated.

**Consent for publication**

Not applicable.

**Availability of data and materials**

The data sets during and/or analysed during the current study are available from the corresponding author on reasonable request.
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Competing interests

The authors declare there are no financial or non-financial competing interests for this study.

Author’s information

Nil disclosed.

Footnotes

Nil.

References


Summary

This chapter has provided evidence of the findings that emerged from data analysis to present the major categories and overarching core findings that were subsequently synthesised. These were presented in paper two: “Midwifery leaders views on the factors considered crucial to implementing evidence-based practice” and a manuscript currently under review: “Exploring the usability of the COM-B model and Theoretical Domains Framework (TDF) to explore the underlying helpers and hindrances of evidence-based change in midwifery”. Chapter six will extend the discussion of these findings from a critical realist perspective, make sense of their meaning and relate the key issues identified to the current evidence-to-practice gap problem midwives’ experience in Australian maternity services.


Chapter Six: Discussion

Introduction

The aim of the study reported in this thesis was to confirm the need for and value of an evidence implementation resource for midwives working in clinical areas. This included the development of a blueprint for that resource in conjunction with end users. The specific objectives set were to explore the views and experiences of midwives who had tried to implement an EBP, establishing key factors that both help and hinder midwives efforts to initiate evidence-based change. This led to the development of a blueprint for an eTool(KIT) for midwives, which clearly outlines the steps needed to implement EBP into clinical areas.

In chapters one to three, I introduced the study and established the context of my thesis. This was demonstrated with a published comprehensive integrative review, highlighting a knowledge gap that justified the need for this study. A detailed explanation of the philosophical and methodological underpinnings of this research was also provided. Chapter four presented an in-depth description of the research process undertaken and a blueprint of the intervention design. The original findings that emerged from data analysis were presented in chapter five in the form of one published paper and one manuscript currently under review. The purpose of chapter six is to discuss the meaning of the findings that emerged from the data collected for this study, considering these findings within a critical realist framework. The chapter will also highlight the unique contribution this research has made to the discipline of midwifery and the wider academic community, which provides the basis for the recommendations made in chapter seven.

To facilitate a deeper understanding of the factors that influence midwives’ efforts to lead practice change in clinical areas, three higher order codes were developed using an analytical process that involved progression from description (wherein the data are organised into patterns or themes) to interpretation, from
which an attempt to theorise the significance of the patterns and their broader meanings or implications is made (Pattern, 1990). These higher order codes, which head the sections of this chapter, make overall meaning of the factors that contribute to the timely adoption of EBP in maternity care. They are as follows: “It’s hard to overcome the resistance towards new EBPs, midwives are passionate yet reticent towards leading practice change”, “Inter-disciplinary collaboration and organisations supportive of change are key to improving implementation processes for midwives” and “To lead practice change initiatives, midwives require knowledge of system-level change and a clear process for evidence implementation”. These higher order codes are discussed throughout this chapter in conjunction with relevant literature within a critical realist framework.

From a CR perspective, reality is a stratified system of objects with causal powers that in effect influence the activities and outcomes of the interactions that occur in the real world. (Mingers, Mutch, & Willcocks, 2013). Pawson and Tilley (1997) describe the interplay between context (C), mechanism (M) and outcome (O), which align with the stratified ontology of CR (the empirical, the actual and the real domains), advocating for more open systems or inter-relationships between these domains. As a novice researcher, I sought a philosophical underpinning that could accommodate the complexity of undertaking an AR study and the problems associated with practice change. Critical realism has proven a perfect fit for exploring these issues. It provided a stratified framework within which I was able to explore the individual, local and system level influences that affect midwives capacity to implement new EBPs. These emerged to reflect factors within the empirical, actual and real domains. In turn, by employing CR, I was able to apply this new knowledge to the co-development of a blueprint for a new process for midwives wanting to initiate practice change in clinical areas, while addressing the three domains of CR. As a reminder, these domains are presented in Figure 19 (also seen in chapter three).
The empirical domain: It’s hard to overcome the resistance towards new EBPs, midwives are passionate yet reticent towards leading practice change

The first and innermost domain of CR is the empirical. The empirical domain is arguably the most observable, reflecting the events and experiences that occur as a result of generative mechanisms that affect the day-to-day activities and interactions of individuals in the real world (Walsh & Evans, 2014). Fundamentally, the empirical domain surmises “what a person perceives from their senses, what they see and feel, and what they experience” (Nairn, 2012, p. 7).

The major categories to emerge from the findings in my study, labelled “Fear can stop change, it’s personal for midwives” and “Midwives are tired of fighting the battle for evidence-based change, they need knowledge and the confidence to bring about practice change”, represent the empirical considerations that influence...
midwives capacity to lead practice change in clinical areas. Although most midwives support and champion for EBP, they express reticence towards leading practice change for four reasons: midwives fear resistance and vilification, they are uncertain of how to lead practice change projects, leadership (of change or otherwise) is not specified as a role expectation in midwifery practice standards, and midwives recognise that support from their own leaders is not always guaranteed.

Change management in healthcare implicates all aspects of practice and in the current study, embarking on practice change emerged as an arduous and at times unrewarding experience. This was the case whether participants were trying to implement practices that were simple but known to be effective, or new system-wide evidence-based policies. Feelings of fear, vilification, uncertainty and ‘battle fatigue’ were expressed by all participants, who described the resistance and ongoing criticism they received from staff at all levels while trying to initiate evidence-based change in the workplace. Several midwives disclosed the only way they were able to successfully implement new EBPs was to ‘be quiet about it’ (MW5). In addition to these sentiments, participants voiced apprehension regarding the seemingly personal costs of leading practice change through their reported concern for its impact on midwives workload, the interruption to midwives work-life balance and on the inter-relationships between medical staff, midwives and management.

Previous literature from both Australia and internationally support the findings reported in this study. Bayes et al. (2019), in their study exploring midwives’ experiences of implementing practice change, reported midwives to have been subjected to fear-mongering, threats and gatekeeping from staff at all levels, as midwives described the frustration and fatigue they experienced while trying to improve midwifery practice or lead evidence-based change. Similarly, work by Toohill et al. (2017) found midwives feared losing their registration or would be blamed for adverse patient outcomes as a consequence of implementing new practices, despite these being based on best available evidence. Collectively, the findings of these studies echo the views and experiences of participants in the
current study, confirming midwives are right to be fearful of leading practice change as there are personal costs associated with doing so.

In addition to fear and the perceived personal costs of leading practice change projects, the findings in this study also confirm midwives are time-poor and have limited opportunities to engage in EBP projects during work hours. This was compounded by the apparent expectation that midwives are obligated to manage increasingly heavy workloads and care for rising numbers of women with complicated health or risk profiles, without adequate time allocated to complete basic midwifery tasks. Subsequently, participants engaged in practice change activities after hours or on rostered days off so their projects did not impinge on the quality of care they provided to women at work. This was the case even when they had been charged to lead a change project by their manager.

Midwives workloads have been extensively reported on in the literature and are considered a significant barrier to implementing EBP. Azmoude, Aradmehr, and Dehghani (2018) found in their study reporting midwives’ attitudes and barriers to EBP that time limitations and insufficient resources limited midwives’ opportunity to implement EBP during work time. Similarly, Fairbrother, Cashin, Conway, Symes, and Graham (2016) found, as I did, that insufficient time and heavy workloads contributed to both midwives and nurses perceived reluctance to initiate practice change projects. Participants rated “time and busyness” as the most prominent barriers to changing practice (Fairbrother et al., 2016). Geerligs and colleagues (2018), through a systematic review of the literature, explored various staff-identified barriers and facilitators of EBP, categorising these into three core domains: system, staff and intervention. Consistent with the findings in my study, participants articulated staff workloads, insufficient time to implement practice change and staff attitudes towards EBP influenced the degree to which new practices were effectively embedded into clinical environments. Additionally, as my own participants voiced, those interviewed by Geerligs et al. (2018) attributed the degree to which their implementation efforts were accepted by colleagues was largely dependent on the level of “staff commitment and their attitudes towards practice change” (p. 17). These studies clearly resonate with the findings of my
study, justifying midwives’ fear of leading practice change as they have limited time or support to undertake these activities. Further to this knowledge, the current study provides new insight into midwives attitudes towards leading practice change: midwives are not resistant to new practices per se, rather they are reticent towards change leadership and are unsure of how to enact it.

In my study, the feelings of uncertainty and doubt expressed by participants in regard to leading practice change was associated with a broader sense of ambiguity regarding midwives professional role as leaders. This was due to a perceived lack of authority to initiate evidence-based change or being able to assert their views in professional forums. These issues are consistent with work by Azmoude et al. (2018), who reported midwives felt inadequate and lacked “the authority to change patient care procedures” (p.124). Similarly, literature within the field of nursing support these findings, suggesting nursing staff express low levels of autonomy and authority to change practices that directly affect clinical care (Williams, Perillo, & Brown, 2015).

In the current study, all participants agreed midwives’ require training in leadership and assertiveness to improve their confidence to lead practice change projects. Significantly, two participants reflected on the perceived sense of control medical staff have over midwives, articulating there was no expectation for midwives to lead practice change projects as current maternity services continue to be dominated by the medical profession. Another participant commented midwives are commonly “ignored or undermined” by obstetricians, suggesting in order to improve midwifery services for women midwives must learn to be “champions of evidence-based change” (MW12).

Throughout the literature various interpretations of the term leadership have been described, reflecting the broad view that leadership is a way of focusing and motivating people to achieve their aims and ideas (Bannon, Alderdice, & McNeill, 2017; Bishop, 2009). Similarly, contemporary perspectives in regard to leadership infer that change leaders enact desired skillsets and behaviours to improve the success rates for evidence-based change (Gill, 2002). These behaviours, according
to Kotter (2012), are associated with strong values, communication and training. Other examples include role modelling positive behaviours, facilitating change efforts and supporting those who are inspired to initiate change (Gilley et al., 2009). All of these definitions characterise what participants in my study voiced, that leading evidence-based change requires strong midwifery leadership and support from all levels.

These sentiments are reiterated in studies that explore the role of midwives and midwifery leadership in the context of maternity services. Hewitt, Priddis, and Dahlen (2019) report the attributes considered essential to hold effective management and leadership positions in midwifery, asserting midwives require education in leadership, mentoring and emotional intelligence to both manage and safeguard midwifery-led services. Consistent with the findings in my study, Hewitt and colleagues (2019) also acknowledged the “invisibility of midwives” (p. 170), which authors attributed to the perceived opinions of medical staff regarding midwives, who reportedly view the profession of lower status in comparison to medicine. Undoubtedly, the medical profession continues to “hold the power” in clinical decision-making and autonomous practices in most clinical areas (Hewitt et al., 2019, p. 171). Carragher and Gormley (2017) highlight the importance of effective midwifery leadership to facilitate implementation of high quality maternity care, however stopped short of making recommendations as Hewitt et al. (2019) did, about how this could occur. Nonetheless, the findings reported by Carragher and Gormley (2017) resonate with the experiences shared by participants in my study and confirm, as do Hewitt and colleagues (2019), the need to invest in more formal processes to support midwives in both leading evidence-based change and working in partnership with the medical profession. This is also reinforced in regulatory guidelines for registered midwives in Australia and elsewhere, where legislation acknowledges the value of inter-disciplinary communication to ensure a partnership approach to woman-centred care (NMBA, 2018).

The Nursing and Midwifery Board of Australia outlines the need for midwives to actively contribute to improving the quality of maternity services through collaborative practice in their daily work (NMBA, 2018). However, no clear insight is
provided in relation to midwives’ role as change leaders or their obligation (if any) to implement new EBPs into routine maternity care. Arguably, this assumes the responsibility of leading practice change activities lies elsewhere, rather than being a responsibility of midwives and midwifery managers. This concept was discussed throughout the current study and participants agreed that although not every midwife will follow a career trajectory in a formal leadership role (for example management or executive positions), all midwives need to feel supported to lead evidence-based change, and as such must be equipped with the knowledge and confidence to implement new practices that are current and based on the highest quality evidence.

As well as reflecting on the regulatory expectation for midwives to contribute to improving the standard and delivery of quality maternity care, participants in this study also considered their duty of care to women, which often conflicted with their professional obligation to practice according to hospital policy and standards. Several midwives voiced that despite knowing of new EBPs they felt mandated to adhere to their hospital guidelines, rather than practice according to best available evidence. For midwives, there is often a tension between wanting to practice evidence-informed care and being required to adhere to policies that may not reflect best available evidence or be harmful if applied routinely (Miller et al., 2016). As exemplified in the findings reported in this study, midwives at times feel challenged to adhere to organisational policy or enact interventions that are increasingly focused on risk aversion or the medicalisation of birth (Miller et al., 2016; O’Connell & Downe, 2009). This may drive midwives to initiate more practice change projects, and if this is the case, effective midwifery leadership may be a key skill required for midwives to efficiently implement new EBPs into clinical areas.

Gaining support from management and midwives holding senior positions was considered advantageous by all participants in this study. These individuals (also labelled “change leaders” or “change champions”) were recognised as instrumental to improving the likelihood of successful outcomes if involved in the process. Participants unanimously agreed that in order to successfully embed new
EBPs into routine midwifery care, managerial support and reinforcement from change leader midwives was essential.

Supporting change across an organisation, whether it be through knowledge-sharing or enacting positive behaviours towards EBP, is generally affiliated with strong leadership and knowledge of how to lead change initiatives (Carragher & Gormley, 2017; Eisenbach, 1999). Although much of the literature surrounding change explores the processual issues of implementing change, there is growing recognition for the role of change champions or change leaders in sustaining evidence-based change (Allen, 2016). As exemplified in the findings of my study, most participants acknowledged the leveraging impact of securing managerial support or a senior midwife to assist with implementing practice change. These findings concur with work undertaken twenty years ago by Kirkham and Stapleton (2000), who reported on change initiator midwives, suggesting the need for “someone with clout” who could advocate for midwives and provide assurance when support was needed (p. 468).

In addition to midwives role as change leaders, participants in my study provided new insight into midwives obligations as change leaders. Participants felt at times they were not only responsible for leading practice change, but were also expected to identify the need for practice improvement and model behaviours that promoted the timely adoption of EBP. However, these expectations were not always realised as several participants recalled feeling isolated or unsupported while trying to implement change. This led to projects losing momentum, which effected midwives’ self-confidence and their perceived competence to lead practice change. Like the findings in my study, a systematic review by Lau et al. (2016) reported support from both colleagues and management were shown to facilitate evidence implementation and clinicians satisfaction in regard to initiating change.

Not unlike other healthcare professionals, the participants in my study expressed the need to feel their ideas were valued in the organisations in which they worked. Williams et al. (2015) confirm this view, suggesting healthcare staff need to feel they have the autonomy and knowledge to initiate practice change in
order to feel supported by their organisation. Additionally, participants spoke of not knowing how to lead practice change projects and were unfamiliar with the process of evidence implementation. To date, work by Bayes et al. (2016) is the only publication to explore the concept of evidence implementation in midwifery. Authors suggest that despite a range of existing implementation tools, largely from the field of IS, none exist specific to the needs of midwives or the issues they encounter while attempting to implement evidence-based change (Bayes et al., 2016). These findings concur with the views of participants in my study, confirming that no literature or tools currently exist on evidence implementation in midwifery. As such, this study is significant in that it promises a solution to the challenges midwives experience when trying to initiate evidence-based change. It is anticipated the eTool(KIT) will provide midwives with the knowledge and confidence needed to successfully lead practice change projects in clinical areas.

Fundamentally, what underpins effective practice change projects is a greater understanding for how local occurrences at the empirical level both help and hinder midwives’ efforts to lead evidence-based change in clinical areas. As the findings of my study demonstrate, consideration for activities within the empirical domain revealed midwives’ perceived fear and reticence towards leading practice change, their uncertainty concerning implementation processes and the value of local and organisational support in regard to leading practice change projects. Significantly, the findings discussed within this empirical domain confirm that midwives have the capacity to both influence and leverage outcomes and decisions regarding practice change. In this context, the eTool(KIT) promises to provide a structured, evidence-based approach to implementing practice change, which is both sensitive and responsive to the context of maternity care and midwives working within clinical areas. However, for this to occur midwives need to feel they have the knowledge and confidence to engage in leadership activities, working in environments supportive of change.
The actual domain: Inter-disciplinary collaboration and organisations supportive of change are key to improving implementation processes for midwives

Within the stratified ontology of CR the actual domain is considered mid-level, consisting of events that may (or may not) occur in response to the activities that eventuate at the empirical level (Walsh & Evans, 2014). Simply, they are the environmental influences and regulatory powers that influence midwives capacity to successfully implement new EBPs.

The major categories to emerge from the findings in my study, labelled “For midwives, medical opposition and workplace culture are the biggest challenges” and “Having stakeholder buy-in and strong midwifery leadership is a huge advantage” represent actual considerations that both help and hinder midwives efforts to lead practice change. Although midwives are motivated to implement new EBPs, they assert two underlying hindrances interrupt their efforts: local resisters and workplace culture. Comparatively, midwives also recognise that inter-disciplinary collaboration and securing strong stakeholder partnerships are beneficial to the process and outcomes of all practice change projects.

In my study, medical opposition was considered the most significant barrier to achieving timely evidence-based change. For many participants, this was articulated as “local resistance”, which described the sabotage and gatekeeping participants experienced when they tried to implement practice change. One midwife, who tried to implement waterbirth facilities in her workplace, recalled observing obstetric “tantrums” and felt intimidated by medical staff who refused to support her and threatened to withdraw obstetric services if practice change occurred. Another participant recalled the resistance she experienced from a medical director, who rejected “buy-in” to an initiative that was essentially midwifery-led.

Like the findings in my study, medical opposition is a well-reported barrier to evidence implementation in maternity care. Azmoude et al. (2018) ranked “lack of co-operation from physicians” (p.124) as one of the most perceived barriers of EBP
by midwives. Likewise, in a study exploring the use of EBP in midwifery, Kennedy, Doig, Hackley, Leslie, and Tillman (2012) reported physicians to be the most likely persons responsible for hindering midwives efforts to implement EBP. Despite these reported setbacks, participants in my study considered medical staff a key factor to successful evidence implementation, acknowledging the benefits of inter-disciplinary collaboration and workplaces supportive of change.

Workplace culture is key to the efficiency of all system-level productivity and the degree of job satisfaction expressed by employees. Within maternity services, one of the most cited barriers to EBP is organisational culture (Toolhill, Sidebotham, Gamble, Fenwick, & Creedy, 2017; Williams et al., 2015). This operates at many sites and levels, and from a critical realist viewpoint is often indicative of the influential mechanisms at play within the wider system (Haigh, Kemp, Bazeley, & Haigh, 2019). Similar to the findings reported in my study issues such as “low morale and inappropriate workplace behaviours” influence midwives’ capacity to care for women and engage in day-to-day midwifery tasks (Catling, Rossiter, & McIntyre, 2020, p. 2). Bloxsome, Ireson, Doleman, and Bayes (2019) explore these findings further, suggesting a correlation between workplace culture, staff attrition and rates of burnout. Coles and colleagues (2020), in their study exploring the influence of contextual factors on quality improvement activities, assert organisational culture is a key consideration to improve workplace efficiency, highlighting that organisational culture can act to both “drive change or undermine improvement efforts, depending on an organisation’s readiness to change” (p. 17). Notably, when the context is receptive to evidence-based change, the process of implementation is more aptly facilitated (Kitson, 2009). These sentiments confirm the findings of this study and demonstrate the relationship between workplace culture and the interplay between individuals, the context and the outcomes of practice change activities.

Participants in my study collectively agreed that feeling supported by midwifery managers and having inter-disciplinary support were leveraging factors to the outcomes of their practice change projects. This was amplified when collaborative working partnerships were formed. Testament to this are reports that
Clinicians are less likely to initiate new EBPs if they feel unsupported by their colleagues and managers (Wallis, 2012). Arguably, solutions to this issue lie in the development of more open systems of communication between midwives, management and other maternity care providers. Consistent with the views of participants in my study, other key strategies include consideration for interdisciplinary partnerships, mentorship programs for midwives and education to better prepare midwives for leadership roles in practice (Hewitt et al., 2019). In this context, the eTool(KIT) promises to provide midwives with knowledge and the skills needed to engage in change leader activities and lead practice change projects with confidence and aptitude.

Collaboration throughout this study was not only considered an important feature of the selected research methodology, but also a constituent part of this study’s underpinning design. While many of the research outcomes presented relate to the process of implementing practice change, a considerable portion of the findings communicate the value of participatory action research and employing a co-operative approach to problem-solving. Similarly, while this study reports on the numerous barriers midwives experience when implementing practice change, what remained central to the solution was the value of stakeholder engagement and the benefits of consulting a broad range of stakeholders to solve complex problems in healthcare. Participants in this study undoubtedly contributed to the successful outcomes generated from this study, illustrating the value of stakeholder engagement and the co-operative working partnership that occurred as a result of this AR study.

There is an abundance of literature describing the meaning of stakeholder engagement, which includes terminologies such as collaboration, alliance and partnership (Leviton & Melichar, 2016; Rycroft-Malone et al., 2016a). However, a simple definition can be expressed as “those with an interest or ‘stake’ in an activity or its evaluation” (Leviton & Melichar, 2016, p. 803). Similarly, stakeholder engagement can be considered a courtship of two or more individuals or organisations, with each party having an investment in the outcomes intended (Esmail, Moore, & Rein, 2015). In midwifery terms, and a variation of the meaning,
engagement is used to describe the movements of the fetal head as it descends into the maternal pelvis during the latter stages of pregnancy (Desurmont, Houzé de l'Aulnoit, Brabant, & Houzé de l'Aulnoit, 2018). What is shared between these definitions is the concept of two objects coming together for a short or long term to achieve a particular outcome. The act of coming together is influenced by the tacit knowledge and personal experience each party brings to the relationship.

Successful engagement relies on the way people work together, how they interact, contribute and make sense of the relationship. Effective engagement activities foster mutuality and respect, much like the partnership between a woman and a midwife, who are both responsive to the needs of each other and build a relationship founded in trust. From a psychoanalytic perspective, effective stakeholder engagement is considered the outcome of a relationship between “the container and the contained” (Billow, 2003, p. 28). The container is the organisation and the process of engagement, which provides boundaries for that which is contained; the contained refers to the persons and context engaging in the process (Zinkin, 1989). The organisation creates the space needed for stakeholders to engage, learn and collaborate. Through its culture and leadership, the organisation acts to support the process of engagement, in effect facilitating localised improvement through change. The outcome is transformative and a result of their co-operative partnership.

Drawing on the experiences described by participants in this study, thought for stakeholder engagement and inter-disciplinary collaboration is essential. All participants identified numerous features for creating meaningful stakeholder partnerships: supportive organisational infrastructure, collaborative working partnerships and the formation of open systems of communication between all levels of the wider healthcare system. These features resonate with the underpinning principles of CR and demonstrate the significance of system-level co-operation between the empirical, actual and the real domain.
The real domain: To lead practice change initiatives, midwives require knowledge of organisational change and a clear process for evidence implementation

The outer most domain, labelled the real, encapsulates the empirical and actual domains of critical realism. This domain consists of generative mechanisms, causal powers or tendencies, which trigger the events that occur in the actual and real domains (Haigh et al., 2019). In midwifery, the real domain is concerned with system-level influences that both affect and contribute to the outcomes of all practice change projects.

The major categories that emerged from the findings in my study, titled “To lead change initiatives midwives need knowledge of implementation processes, packaged into a centralised resource”, “Consider digital technology and design a resource that’s accessible and practical for on-the-run midwives” and “To firmly embed change, the resource should help build a network and link midwives together” represent the underlying factors that impact midwives’ role as change leaders and champions for EBP. The final meaning derived from these findings affirm that midwives require system-level knowledge of organisational change and a clear process for evidence implementation to effectively lead practice change projects.

The participants interviewed in my study recognised the constraints and influence of health organisations on midwives’ ability to lead practice change projects. Also acknowledged is the persistent tension between practice and the priorities of an organisation to meet local state or national policy requirements. All participants agreed that implementing practice change requires organisational commitment and knowledge of change management processes. Additionally, the majority of participants admitted to implementing practice change without considering formal processes. One participant referred to her implementation method as ‘ad-hoc’, acknowledging she knew of no formal process for evidence implementation. Other participants discussed QI policies specific to their health organisation, although did not consider these useful or appropriate for practice.
change projects. In this context, the RE-AIM Framework (Gaglio, Shoup, & Glasgow, 2013) and Plan Do Study Act (PDSA) (Taylor et al., 2014) model were reviewed and all participants unanimously agreed that both tools were too complex and theory focused for midwives wanting to implement practice change.

As described by participants in the current study, most healthcare organisations have a PDSA methodology for QI, as well as reporting systems for sub-optimal health outcomes in regard to clinical expectations. However, these approaches have demonstrated limited effectiveness against the increasingly large scale of change projects and the expected rate of QI outcomes that healthcare systems demand (Baxley, Bennett, Pumkam, Crutcher, & Helms, 2011). The findings of this study concur with existing literature on the usability of various existing QI tools in healthcare organisations. Reed and Card (2016), in their study investigating the issues associated with the PDSA cycle, suggested clinicians require “an extensive repertoire of skills and knowledge” to better understand how to apply or adapt the PDSA cycles to various improvement projects (p. 148). Kennedy et al. (2020) report on the feasibility of another tool, the RE-AIM Framework, which evaluates the reach, effectiveness, adoption, implementation and maintenance of implementation activities within health organisations. These authors reported the tool ineffective when applied to the logistical challenges of clinical environments, asserting a “one-size-fits-all” approach to evidence implementation is not sufficient (p. 9). Kennedy et al. (2020) recommended an approach that meets the needs of the people and their local environment will result in better outcomes. Work by Holtrop, Rabin, and Glasgow (2018) support these findings, reporting the RE-AIM Framework lacked direction on how to approach implementation processes in regard to health programs and policies.

In addition to QI strategies in maternity services, participants in my study expressed concern regarding the increasing focus of healthcare organisations on hospital indicators, statistical trends and outcomes, rather than the needs of women and their maternity cater experience. Although significant considerations, participants suggested priorities for practicing midwives often conflict with the primacies established by high level executives, as midwives prioritise women and
above all else are committed to delivering woman-centred care. This was unanimously agreed on by participants, who voiced women should be the real force behind all practice change projects. Other considerations raised by participants related to three organisational characteristics influential to the outcomes change initiatives: the priorities of the organisation, the resources available within the organisation, and the overarching goals of the organisation. The majority of participants confirmed that in order to achieve sustained practice change, new EBPs had to align with organisational goals, demonstrate cost-effectiveness and be considered a priority focus of the wider healthcare system.

Existing research on evidence implementation in healthcare indicates the need to consider organisational characteristics, consumers and the suitability of research findings in clinical environments in order to effectively change practice (Damschroder et al., 2009; Grol, Bosch, Hulscher, Eccles, & Wensing, 2007). Similar to the findings in my study, Scholl, LaRussa, Hahlweg, Kobrin, and Elwyn (2018), in their scoping review, reported organisational features to be highly influential to implementation activities and decision-making in day-to-day care. These authors emphasised the value of clinicians’ knowledge of organisational systems and the activities needed to improve the uptake and sustainability of clinical innovations in practice. Similarly, Smith, de Graft-Johnson, Zyaee, Ricca, and Fullerton (2015) suggested progress towards improving implementation outcomes is dependent on both horizontal and vertical scale-up, recommending to embed new interventions into routine practice, thought for system and organisational level characteristics should be prioritised (Smith et al., 2015). Significantly, what emerged from the findings in my study was the need to develop a clear process for midwives wanting to implement practice change. Participants broadly described the need for a step-by-step approach, with the key premise being midwives’ require a standardised, centralised process for implementing EBP into clinical areas. This was a key consideration during the intervention development stage of this project (see chapter four), significantly contributing to the development of a six-step approach to practice change as outlined in the modules of the eTool(KIT).
Although one of the objectives set for this study was to develop a blueprint for an evidence implementation resource, which was achieved, as the research process evolved it became evident that the development of this blueprint was secondary to the knowledge gained from the research process and the subsequent findings in regards to organisational change. As participants agreed, development of an evidence implementation resource is only useful if midwives have an understanding of their professional obligation as evidence informed clinicians to practice according to best available evidence, their workplaces’ readiness for practice change and how evidence implementation impacts the larger system in which midwives work. Thus, this study provides not only the blueprint for a six-step approach to practice change, it highlights the need for improved knowledge of organisational change and how EBP is employed and affected by all levels of the wider healthcare system. Employing Lean principles, which are already practiced in many healthcare services, promises an ideal framework for these issues (Mazzocato, Savage, Brommels, Aronsson, & Thor, 2010).

Over the last five decades, a manufacturing philosophy termed the ‘lean’ approach has demonstrated success in establishing progressive change environments and ideal work systems in a range of industries (Scharmer & von Ameln, 2019). Derived from the Toyota Production System (TPS) (Collins & Muthusamy, 2017), the lean approach when applied to healthcare provides a methodology for promoting quality care through training, best practice sharing and in creating ideal systems that distribute responsibility and involvement between employees at all organisational levels (Collins & Muthusamy, 2017). Notably, the lean approach focuses on creating an atmosphere of continuous learning in environments that not only accept, but embraces change (D’Andreamatteo, Ianni, Lega, & Sargiacomo, 2015). This philosophy aligns with the findings of this study, confirming that in order to support midwives efforts to implement EBP, midwives require local, organisational and system level support. Also significant, the lean philosophy indicates a strong focus on efficiency and safety (Dahlgaard, Pettersen, & Dahlgaard-Park, 2011), which captures the priorities of both health organisations and the everyday practice of diligent midwives.
As the participants in this study expressed, evidence-based change calls for participative working partnerships, underpinned by organisations that support midwives to source, appraise and utilise latest evidence as part of their professional role and obligation to women. From a realist perspective, lean healthcare systems assert knowledge creation and knowledge dissemination begins at the empirical level and encourages the contribution of all employees to minimise a sense of “vertical command and control” (Collins & Muthusamy, 2017, p. 44). As a result, principles of the TPS facilitate creative behaviours at the operational level, facilitating communication between employees and managers that reflect the features of a learning environment. In this context, Witcher (2014) suggests the mechanism for achieving better implementation outcomes is in Hoshin planning. As a dimension of TPS, Hoshin planning describes a series of meaningful discussions between managers and employees, to define achievable objectives that align with the organisations goals (Dahlgaard et al., 2011). Professional development is another key focus of Hoshin planning: cultivating capable leaders and providing employees with the necessary tools and workplace culture to reach their full potential.

These concepts all reflect the findings in my study, confirming the need to provide midwives with the organisational support and tools required to lead practice change projects. From a critical realist perspective, while midwives prioritise caring for women and newborns in clinical environments, they may at times have limited awareness of real level activities that influence their capacity to lead evidence-based change. Thus, to ensure implementation efforts are successful, midwives require an effective process for implementing change and acute awareness of the interactions between individuals, the local context and larger system level influences.

The 4P Excellence model (Dahlgaard et al., 2011), has been used effectively in lean healthcare systems to develop high quality outcomes in service delivery, demonstrating potential for improving evidence implementation processes for midwives. The key premise of the 4P Excellence model lies in recognising the value of individuals and the central role they play in improving the partnerships between
people and the processes and practices that lead to organisational excellence (Figure 20).

**Figure 20:** Developing Organisational Excellence through improving processes for EBP, an adaption of the 4P model by Dahlgaard-Park and Dahlgaard (2010)

Consistent with the findings in my study, the 4P Excellence model illustrates that the underpinnings of organisational excellence are people, who have the capacity to be strong leaders and work collaboratively with others to improve processes for implementing EBP in healthcare. Fundamentally, these concepts reflect the needs of both midwives and the larger system in which they work. In this sense, the 4P model promises a process for achieving evidence-informed care and improving the quality of current Australian maternity services. Collectively, each element of the 4P Excellence model reflects the findings of this study, confirming the need for a process for implementing practice change. This will undoubtedly lead to improved partnerships, processes and practices that are derived from the people directly affected by these happenings. In this context, the blueprint for an eTool(KIT) for midwives not only creates a six-step approach for midwives wanting to initiate evidence-based change, but also provides midwives with the knowledge and confidence needed to consider future leadership positions and champion for evidence-base change in Australian maternity services.
Summary

This chapter has synthesised the overall findings of the current study and highlighted how the study contributes to new knowledge in the discipline of midwifery. The discussion points presented have highlighted the three higher order codes developed from the data collected throughout this study: “It’s hard to overcome the resistance towards new EBPs, midwives are passionate yet reticent towards leading practice change”, “Inter-disciplinary collaboration and organisations supportive of change are key to improving implementation processes for midwives” and “To lead practice change initiatives, midwives require knowledge of organisational change and a clear process for evidence implementation.” These higher order codes have been explained, discussed and contrasted against existent literature within a critical realist framework.

Significantly, the findings of my study confirm the majority of midwives value EBP, yet are reticent towards leading practice change. These sentiments can be resolved when the dynamics and sub-cultures within the empirical, actual and real domains are aligned and supportive of midwives wanting to implement evidence-based change. Further, this chapter demonstrates the need for an evidence implementation resource to guide midwives through the process of implementing new EBPs into clinical areas. In the final chapter, recommendations for practice, policy and education are made, the limitations of this study are discussed and proposals for future research regarding EBP in the Australian midwifery context are offered. From there, it is anticipated that processes for implementing sustained EBP in midwifery will be developed and midwives will acquire a clear a six-step approach to practice change.
Chapter Seven: Conclusions, Recommendations and Limitations

Introduction

The preceding chapter discussed three higher order codes that emerged from the findings reported in this study, which were explored through the philosophical lens of critical realism and compared with current and relevant published literature. In this concluding chapter, I summarise the study presented in this thesis, exploring midwives' experiences of implementing practice change, considering the degree to which the study aim and objectives were achieved and the research question answered. I then make recommendations for application of the findings and for future research, before offering a personal reflection of my research journey and how the experience of pursuing a PhD will serve me in the future.

The findings reported and discussed in this thesis make an original contribution to our understanding of the challenges midwives’ experience when trying to initiate practice change, through exploration of the issues surrounding evidence implementation in Australian maternity services. The study also confirms that most midwives value EBP and are motivated to improve the standards of maternity care, yet express reticence towards leading practice change initiatives. This was explored through the personal experiences of 17 midwives who had attempted to implement new EBPs into their workplace, and in doing so identified numerous helpers and hindrances of evidence-based change. The core finding established midwives’ require knowledge of organisational change and a clear process for evidence implementation, which led to the co-development of the blueprint for an eTool(KIT) for midwives, which offers a centralised, standardised process for midwives wanting to implement EBP into clinical areas. Additionally, the study highlighted the value of collaboration and inter-disciplinary partnerships,
offering insight into the benefits of gaining stakeholder buy-in and organisational support (from all levels) to achieve sustained practice change.

My account of this study presents detailed discussions of the factors considered crucial for improving the uptake and sustainability of EBP in Australian maternity services. Additionally, the findings confirm that implementing evidence-based change requires consideration for the inter-relationships between individuals, the local context and the wider healthcare system. At the time of writing, no other research investigating the evidence-to-practice gap problem in midwifery has been conducted, and no other research exists on the specific focus of this study. Therefore, the study presented in this thesis and the findings herein, provide a unique contribution to the body of knowledge in the discipline of midwifery, which I hope will improve the uptake and sustainability of evidence-informed care in Australian maternity services.

Overview of the study

The primary aim of this study was to improve processes for midwives wanting to implement EBP in clinical areas. An overarching research question was developed:

“What factors and other tools need to be considered in the design of an evidence implementation resource for midwives?”

To answer this question, the following four objectives were pursued:

1. To explore the experience of midwives who have tried to implement new EBPs in clinical areas;
2. To establish the key factors that help or hinder evidence-based change in midwifery contexts;
3. To co-develop the blueprint for an evidence-implementation resource for midwives wanting to initiate evidence-based change in clinical areas; and
4. To begin to address the evidence-to-practice gap problem in Australian maternity services.
The intended outcome of this thesis was to develop the blueprint for a midwifery specific evidence implementation resource, co-developed with midwives to improve processes for implementing EBP in clinical areas. This was achieved through the collaborative design of a blueprint for an eTool(KIT) for midwives, which details a six-step approach to implementing practice change in clinical areas.

From the outset of this study, the use of a paradigm that reflected my personal beliefs and worldviews towards EBP and the purpose of this study was essential. I began by exploring the meaning of ontology, epistemology, axiology and methodology, which enabled me to establish my own philosophical position in relation to these (see chapter three). This provided me with a solid foundation to both ground this study and consolidate my understanding of the various approaches I can employ to conduct meaningful research. I reviewed numerous research paradigms, taking time to reflect on how each distinct approach could potentially alter the course and outcomes of the study. What confirmed my own beliefs regarding human existence was that of CR, an alternative approach to the worldviews of positivism and naturalism, which enabled me to formulate a unique approach to the study. Following this, I examined various research methodologies to find a style that I thought would complement the underpinning worldviews of CR. I determined AR would be the most suitable methodology for answering the research question. I studied the numerous sub-sets of AR, concluding that PAR was the perfect fit for this inquiry. Participatory action research advocates for research that prioritises partnerships, collaboration and problem-solving - all of which are led by the people directly affected by the problem (McNiff & Whitehead, 2006). These characteristics not only captured the objectives of my study, but also my ambition to pursue a working partnership with midwives and address the challenges they experience when trying to initiate evidence-based change. The overarching goal of this study was to better understand midwives experience of implementing practice change and use this new knowledge to drive policy, practice and education to improve the implementation of EBP in maternity services. Action research enabled me to achieve this.
The methods used in this study were robust, in that they adhered to the original work of Lewin (1946) and Braun and Clarke (2006), which ensured a clear explanation of the research process, a well-defined audit trail and trustworthiness of the data. My study was overseen by an experienced AR researcher (my principal supervisor) who supported me through all phases of the AR cycle and regularly appraised my work. I was also privy to a second experienced researcher who was able to guide data collection, analysis and the reporting of my findings. This resulted in the synthesis of new and truthful knowledge about midwives’ use of best available evidence in practice, which enabled me to answer the overarching research question.

Review of the theory

The three higher order codes that emerged from the findings in my study articulate the numerous factors that both help and hinder midwives efforts to implement sustained practice change in clinical areas. These factors were explored and then related to the stratified domains of CR: the empirical, the actual and the real. This not only confirmed the existent relationship between the three but also provided an innovative way to consider the issues associated with implementing EBP from a local, organisational and system-level perspective. What emerged from the data was that despite best efforts, midwives report the gap from evidence-to-practice persists and is a priority concern for midwives, who are both committed and mandated to enact evidence-informed care in their day-to-day work. Further, the findings of this study assert that although midwives are motivated to implement EBP, they are reticent towards leading practice change for numerous reasons (see chapter five). This has contributed to inconsistency in the uptake and sustainability of new EBPs in clinical areas. Together, these issues highlight the need for a clear process to support midwives’ lead practice change projects. This can be achieved by improving midwives knowledge of evidence implementation, fostering midwives’ confidence to lead practice change projects and by promoting inter-disciplinary partnerships between midwives, managers and other maternity care providers.
The key outcome of this study was the design of a blueprint for an eTool(KIT) for midwives, which provides a six-step approach to evidence implementation. However, the value of this study lies in the long-term sustainability of latest EBP and the potential for midwives to lead future practice change initiatives in Australian maternity services. The benefits of this study extend beyond the discipline of midwifery and will positively impact the health outcomes of women and newborns, who remain the focus of all change initiatives and will profit from improvements to the quality and standards of evidence-informed maternity care (see chapter two). Additionally, it is anticipated the findings reported in this thesis will be of interest to midwives, maternity care leaders, policy developers and health organisations in which midwives practice. Undoubtedly, this thesis presents a unique contribution to the body of knowledge in midwifery, however it is not without some limitations.

**Limitations**

There are four limitations to this study that must be clarified. First, whilst the midwifery leaders interviewed in this study represented all regions of the Western Australian health sector, it is possible that other midwifery leaders who did not participate may have offered divergent views or further contributed to the findings of this study. Second, this study was grounded in the local context of Western Australia, thus may not represent what resources, skills and knowledge midwives need to effectively implement EBPs beyond this boundary. Third, although the sample provided sufficient data to generate significant findings in this study, it is possible the findings may not reflect the wider implementation issues midwives experience in other midwifery practice contexts. Fourth, no maternity care consumers were included in this study, and in the absence of hearing directly from them, there remains ambiguity about their views on what may help or hinder midwives efforts to translate best available evidence into practice.

It must also be acknowledged that during the recruitment process of this study there was a potential sample bias as participants were recruited via the ACM platform. While a sound strategy for recruitment, the findings of this study may not resonate with the views and professional issues of midwives who choose not to be
a member of the ACM. Similarly, all participants recruited for this study were midwives with experience in trying to implement EBP, therefore it is possible that midwives who have little or no interest in EBP may have been less likely to volunteer to participate in this study.

Despite these limitations, the overarching aim of this research, which was to form a collaborative partnership with midwives and co-develop the blueprint for a resource that provides midwives with the steps needed to implement sustained practice change in clinical areas was achieved. As a result, the findings reported in this study make a valuable contribution to the existing body of knowledge on organisational change in the context of midwifery, providing new insight into the use of theory and other processes to address the evidence-to-practice gap in Australian maternity services.

**Recommendations**

It is anticipated the findings of this study will be of use to midwives, maternity care leaders and researchers who are committed to resolving the disconnection between current maternity practices, high level evidence and processes known to support implementation of EBP in healthcare. The findings of this study may also appeal to professions outside the discipline of midwifery as the evidence-to-practice gap problem is widespread and well reported in literature, both within and beyond the healthcare sector. Recommendations for improving organisational change processes in maternity care should strive towards four primary objectives:

- To identify policies and other regulatory factors that both help or hinder the implementation of EBP in Australian maternity care services;
- To further explore the conditions that are required to support the uptake and sustainability of EBP in Australian maternity care services;
- To develop strong leadership pathways for midwives, who have potential to lead evidence implementation projects if provided with the support and knowledge needed to successfully implement EBP in clinical areas; and
To test the usability of the eTool(KIT) in clinical areas through ongoing collaboration with Australian midwives.

Addressing these objectives will be a crucial step in effecting sustained practice change within Australian maternity services.

**Clinical practice**

Marked variations in the uptake and sustainability of practice change initiatives reinforce the view that workplace culture and organisational receptiveness towards evidence-based change are largely responsible for the outcomes of midwives’ practice change projects. The findings of this study clearly articulate midwives have positive attitudes towards EBP but are reticent towards initiating practice change. Building strong partnerships within organisations conducive to change will facilitate midwives efforts to implement EBP in clinical areas. Similarly, it is essential that midwifery managers and organisational leaders recognise the important role they play in supporting midwives to achieve this.

Strong midwifery leadership also has the potential to transform the way maternity care is delivered in Australia. This study highlights the value of strong midwifery leadership and developing change leaders within the midwifery profession. Change leader midwives are crucial drivers of EBP and will improve the outcomes of practice change projects in clinical areas.

**Education and training**

This study prompts several recommendations for education and training opportunities to further develop midwives’ knowledge and confidence in evidence implementation. First, midwifery managers and maternity service leaders are advised to advocate for activities that develop midwives’ knowledge of organisational change and evidence implementation, providing them with educational support and the resources needed to develop these skills. Second, organisational commitment to implementation of new EBPs and the introduction of implementation strategies to support midwives efforts are strongly encouraged. This includes both inter-disciplinary and organisational buy-in at all system levels.
Third, the value of strong leadership and change leader champions cannot be
understated. Introducing senior leadership and change leader mentoring programs
in maternity care will undoubtedly improve the co-ordination and outcomes of
midwives’ practice change initiatives. Finally, providing midwives with the
resources and time needed to successfully implement new EBPs in the workplace is
central to the success of all practice change initiatives. Midwives require more time
to source, interpret and translate latest evidence into EBP, which should be
incorporated into their daily workload.

Future research
This action research study focused on an area of midwifery that has not been
investigated in any depth previously. Consequently, some recommendations can be
made for further research:

- A study on women’s perspectives of evidence-based care and their views
towards practice change may provide valuable insight into new factors or
processes that may further accelerate the uptake of EBP in maternity
services;

- This study was based in Western Australia and focused on a relatively
small sample of midwifery leaders and practicing midwives, therefore it is
recommended that similar action-oriented research be conducted on a
larger scale to further develop the concept of “practical implementation
science” for midwives;

- The question of how to develop new pathways for developing evidence-
based maternity care policies, based on stakeholder and end user
engagement (ie. midwives, other maternity care providers and policy
makers) is a warranted consideration for future research;

- The implementation of change-leader mentoring programs for midwives
would be beneficial to develop midwifery leadership skills and midwives’
confidence to lead practice change initiatives in maternity care services; and
Further development and evaluation of the eTool(KIT) and its effectiveness in clinical areas needs to be tested empirically.

Concluding comments

Before my candidature commenced, I was involved in a research project that explored midwives’ experience of implementing practice change. I interviewed midwives Australia-wide, listening to their personal accounts of trying to implement evidence-based change. Largely, these conversations exposed the struggles and frustration experienced by midwives wanting to implement new EBPs in clinical areas. The conversations I had with each midwife deeply affected my views on EBP and inspired me to do something about the challenges midwives experience when trying to initiate practice change. The realisation that midwives lack support and clear processes for implementing evidence-based change concerned me enormously and I asked the question: Is there something I can do about this? The simple answer was “yes” and this is how my PhD journey began. Midwives want to provide the best possible care and maternity experience to all women regardless of their geographical location or capacity to afford gold standard maternity care. Concerns regarding the practice of sub-optimal maternity care has been presented throughout this thesis and it is evident that translating evidence into practice remains both complex and uncertain. Action research provided me with a means to explore this complex issue and contribute to improving the quality of midwifery services across Australia. It is important however, that mechanisms are put in place to ensure the outcomes of this study are continued.

Knowledge concerning how to increase midwives confidence in regard to leading evidence-based change in maternity services remains a focus for me. I am committed to partnering with like-minded researchers, academics and midwives to engage in research that seeks to address the broader issues of raising the profile of midwifery as leaders of evidence-based change. Beyond this, it is hoped that collaborations with a global community committed to improving the uptake of EBP in the 21st century will be possible. This thesis is the starting point for another journey which I am both excited and ready to begin.
Final words

In order to consolidate this action research journey, there is a need for reflexivity. The opportunity to engage in action research has provided me with a vehicle for professional and personal development. Professionally, I have developed skills necessary for a lifetime commitment to research, academic inquiry and the midwifery profession. For example, co-ordinating the action research process provided me with an opportunity to develop organisational and leadership skills. Similarly, developing a stakeholder advisory group and facilitating focus group discussions required flexibility and reinforced the value of inclusivity and building strong partnerships with midwives. The process of action research required tolerance and sensitivity, which I feel are both essential characteristics for negotiating life’s journey. I was able to demonstrate this by being approachable and receptive to the needs of both midwifery leaders and the midwife participants who consented to be a part of this study. Finally, my ability to manage family, academic obligations and study revealed an inner strength and capacity to engage in a life that is committed to embracing opportunities and working with midwives to promote midwifery, the services midwives provide and their ongoing dedication to women and their families.

My PhD journey

I can’t imagine life without research: it is my passion. My PhD journey began after the birth of my fourth child when I had a ‘light bulb’ moment and decided I wanted to become a midwife. How hard could it be? I had been cared for by numerous midwives during my childbearing years and they were all efficient, intuitive and caring. I was a Registered Nurse and considered midwifery a natural progression – I wanted to learn a new “trade” and never dreamed it would lead to where I am today.

I have found my PhD experience to be more of a process of contemplation and reflection, rather than a journey. No-one prepared me for how much thinking I would do: I can honestly say I have lived, breathed and thought constantly about my PhD since its conception. I wrote sporadically at times, jotting down notes while
I was making school lunches or watching my children play in our local park. I woke in the middle of the night to furiously scribble down ideas that stirred me from my sleep. I even recall having to park my car on the side of the road when thoughts came while I was driving. My research was an addiction: always on my mind and wanting my attention.

Writing this thesis has been one of the most enjoyable, captivating and challenging experiences of my life. It has led me to examine my own views on research and how I can make a difference to the quality of care women receive and the services midwives provide. There have been struggles and frustrations when the words wouldn’t flow, but as I near the end it is all coming together. I view the world differently now; I ask more questions and welcome challenges. I feel I am more reflective and have grown in my capacity both as a learner and a teacher, which I hope to share with others in the future. Finally, I have been humbled by the candour of all midwives who contributed their time and personal experiences to this study. For me, they confirm that midwifery is a calling, comprising a select group of special people who are dedicated beyond professional expectations to women and the wider community. I am proud to be a midwife and have friendships with some of the most generous and insightful people, which I would never have otherwise made had I not accepted the challenge and joy of undertaking a PhD.
Appendix A: Recruitment Invitation to all Directors of Midwifery Services

April 18th 2019

Dear Executive Director of Midwifery Services

We invite you to nominate a senior midwifery leader in your organisation to participate in a unique Western Australian study:

‘Moving evidence into practice: Development of a midwifery-specific evidence implementation resource for all midwifery contexts.’

This study is being undertaken by Annemarie De Leo, as part of the requirements of a PhD, at Edith Cowan University in Perth.

It is widely recognised that utilising best available evidence in clinical practice improves the quality of care and cost effectiveness of maternity services. Yet, a gap persists in the dissemination-implementation process, with midwives experiencing challenges in not knowing how to efficiently translate best available evidence into everyday care of women and newborns. To address this significant issue this study intends to facilitate midwives efforts to enact Evidence Based Practice (EBP), through the development of a web-based resource that offers both support and clear direction for the implementation process, to achieve sustained evidence-informed change in midwifery practice.

Stage 1 of the study involves the formation of a midwifery Change-leader coalition, in which we invite you to join with other industry change-leaders around Western Australia to participate in this Action Research study. Proceeding this, an introductory one-day workshop is intended to introduce all members to the study and begin planning initiatives to develop a midwifery-specific resource to facilitate midwives efforts to enact EBP in midwifery. From there, it is anticipated that up to three further group discussions will be held. The study will conclude following a formal evaluation process. Of course, I will provide you with a summary of the findings of this study for your interest and further dissemination through your organisation if you wish. It is expected the study will conclude mid-2020.
Ethical approval has been granted for this study (ECU HREC Reference No: 2018-00007-DELEO) and below is a list of the research team supporting the PhD Candidate, Annemarie De Leo. If you have any queries regarding the study please do not hesitate to contact Annemarie, her email is provided below.

Thank you for considering to participate in this study. We look forward to your response within the next two weeks.

Yours sincerely,

Annemarie De Leo
PhD candidate, RN, RM
a.deleo@ecu.edu.au

Principle supervisor
Sara Bayes
Associate Professor of Midwifery and Director of Midwifery studies, ECU.
PhD, RN, RM

Adjunct supervisor
Sadie Geraghty
Associate Professor of Midwifery, Charles Darwin University
PhD, RN, RM

Adjunct supervisor
Ms Janice Butt
Co-ordinator Midwifery & Nursing Staff Development, KEMH
RN, RM, ADM, PGCEA, MA (Ed)
Appendix B: Invitation to Midwives after Directors Nomination

April 18th 2019

Dear

We invite you to participate in a unique Western Australian study.

Moving evidence into practice: Development of a midwifery-specific evidence implementation resource for all midwifery contexts.

This study is being undertaken by Annemarie De Leo, as part of the requirements of a PhD, at Edith Cowan University in Perth.

It is widely recognised that utilising best available evidence in clinical practice improves the quality of care and cost effectiveness of maternity services. Yet, a gap persists in the dissemination-implementation process, with midwives experiencing challenges in not knowing how to efficiently translate best available evidence into everyday care of women and newborns. To address this significant issue this study intends to facilitate midwives efforts to enact Evidence Based Practice (EBP), through the development of a web-based resource that offers both support and clear direction for the implementation process, to achieve sustained evidence-informed change in midwifery practice.

Stage 1 of the study involves the formation of a midwifery Change-leader coalition, in which we invite you to join with other industry change-leaders from Western Australia to participate in an Action Research project. Proceeding this, an introductory one-day workshop is intended to introduce all members to the study and begin planning initiatives to develop a midwifery-specific resource to facilitate midwives efforts to enact EBP in midwifery. From there, it is anticipated that up to three further group discussions will be held. The study will conclude following a formal evaluation process. Of course, I will provide you with a summary of the findings of this study for your interest and further dissemination through your organisation if you wish. It is expected the study will conclude mid-2020.
Ethical approval has been granted for this study (ECU HREC Reference No: 2018-00007-DELEO) and below is a list of the research team supporting the PhD Candidate, Annemarie De Leo. If you have any queries regarding the study please do not hesitate to contact Annemarie, her email is provided below.

Thank you for considering to participate in this study. We look forward to your response within the next two weeks.

Yours sincerely,

Annemarie De Leo
PhD candidate, RN, RM
a.deleo@ecu.edu.au

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Adjunct supervisor
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Associate Professor of Midwifery, Charles Darwin University
PhD, Rn, RM

Adjunct supervisor
Ms Janice Butt
Co-ordinator Midwifery & Nursing Staff Development, KEMH
RN, RM, ADM, PGCEA, MA (Ed)
May 1st 2020

Dear

Thank you for considering to participate in our online focus group discussion on:

Developing a Knowledge Implementation Tool (KIT) for midwives

This focus group is being undertaken by Annemarie De Leo, as part of a PhD, which aims to improve processes for translating latest evidence into midwifery practice.

It is widely recognised that utilising best available evidence in clinical practice improves the quality of care and cost effectiveness of maternity services. Yet, a gap persists in the dissemination-implementation process, with midwives experiencing challenges and frustration when trying to initiate an evidence-based practice change in their workplace. To address this significant issue this study intends to facilitate midwives efforts to provide evidence-based care, through the development of a web-based resource that offers both support and clear direction for the implementation process, so midwives can provide women and their newborns gold standard midwifery services.

The purpose of this online focus group is to share your experience and knowledge of initiating practice change in your workplace. During the session you will be invited to share your views on the following discussion points:

- Your knowledge and experience of implementing an evidence-based practice change in your workplace,
- The tools, information or supportive mechanisms that you feel are needed to bring about evidence-based practice change in your workplace, and
- how these tools and information should be packaged to best suit the needs of midwives working in clinical areas.
You will also be invited to share your views on a range of tools and resources that will be presented to the group during the discussion.

The focus group discussions will be held in early May (depending on midwives' availability to attend). I have allowed for a 1.5hr online discussion and will request your preferences for date and time in the next two weeks. All focus group discussions will be audio-recorded for data collection.

Thank you again for your interest and I look forward to speaking with you soon. In the meantime, if you have any further queries please don't hesitate to contact me.

Kind regards
Anнемarіе De Leo
PhD candidate,
Midwifery Lecturer,
RM, RN
a.deleo@ecu.edu.au
Appendix D: Consent Form

Consent Form
Change-leader Action Research Group (CHARG)
An Action Research Project

I have read the information sheet accompanying this consent form relating to the proposed study and generation of a thesis by PhD candidate A. De Leo.

‘Bridging the gap from evidence to practice in midwifery: An evidence facilitation resource for midwives in all midwifery contexts’

I have been given a copy of the information sheet to keep for my personal records and have been given the opportunity to ask questions. I understand the purpose of this study, extent and possible risks of my own involvement in this project.

I understand that by signing the consent I am agreeing to be an active participant of the Change-leader Action Research Group as outlined in the information sheet provided, and acknowledge this research will lead to the generation of a thesis. I understand that I may withdraw from the study at any time without negative consequence to myself. I understand that if I wish to withdraw from the study the information will still be used as it is de-identified and cannot be withdrawn.

I understand that no information identifying me will be used in published material that may arise from this study and the results. A report of the study will be presented and submitted to Edith Cowan University, but individual participants will not be identifiable in such a report. In addition, I agree not to discuss any information relating to the focus group with participants or individuals outside of the study. I understand that the Edith Cowan University Human Research Ethics committee have approved this study. If I have any further questions I can contact one of the research team members.
Alternatively, should I not wish to participate in this study I am under no obligation to respond to this email or above information.

I __________________________________________ give my consent to participate in the study outlined above.

Please return signed consent form scanned to AJHANNA@our.ecu.edu.au

Thank you for your time.
Appendix E: Resource Manual

The following resources have been packaged for your review. Please work through each step of the implementation process and assess the suitability of the resources in relation to midwives and the varied context in which they work.

Development of a Knowledge Implementation Tool (KIT) for midwives

<table>
<thead>
<tr>
<th>Step</th>
<th>Title</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Getting Ready</td>
<td>Resources include A logic model, CARI tool and Consolidated Framework</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For Implementation Research (CFIR).</td>
</tr>
<tr>
<td>2</td>
<td>Identifying Barriers and</td>
<td>Resources include: The COM-B, The Transtheoretical Domains</td>
</tr>
<tr>
<td></td>
<td>Facilitators</td>
<td>Framework (TDF)</td>
</tr>
<tr>
<td>3</td>
<td>Selecting Change Strategies</td>
<td>Resources include: Examples of implementation strategies</td>
</tr>
<tr>
<td>4</td>
<td>Implementing Change</td>
<td>Resources include: Huddles, One-to-one mentoring, Posters</td>
</tr>
<tr>
<td>5</td>
<td>Planning for Sustainability</td>
<td>Resources include: Sustainability goal-setting tool</td>
</tr>
<tr>
<td>6</td>
<td>Evaluating Outcomes</td>
<td>Resources include: PDSA cycle, RE-AIM framework</td>
</tr>
</tbody>
</table>

At the scheduled Online Focus Group we will invite you to share your views on:

- the usability and suitability of the above resources in relation to midwifery contexts,
- additional resources or other tools you think need to be considered in the design of an evidence-to-practice Toolkit for midwives,
- how this Toolkit should be packaged for midwives wanting to introduce an evidence-based practice change in the workplace; and
- any additional feedback you would like to share with the group.

Thank you for taking the time to review the above information. Your participation in this online focus group discussion is much appreciated and will lead to the development of an evidence-to-practice Toolkit for midwives.
1. Getting ready for practice change

Understanding the problem

Understanding the problem emphasises the importance of knowing the specific problem or practice issue you want to change and identifying its root causes. What is the evidence-practice gap?, and what does the evidence say? Understanding the problem helps you to prepare the evidence you need to bring about practice change.

Creating a logic model provides a visual depiction of your planned project, which you can use to share your ideas and plans with key stakeholders (i.e. your manager, other allied health professionals and your midwifery colleagues).

Example of a logic model

<table>
<thead>
<tr>
<th>WHAT?</th>
<th>HOW?</th>
<th>WHO?</th>
<th>OUTCOMES</th>
<th>IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What are you trying to change?</td>
<td>• What are the key actions/components of the intervention?</td>
<td>• Who are the people directly affected by this EBI implementation project?</td>
<td>• What are the anticipated short, medium and long term effects of this project?</td>
<td>• What is the ultimate goal of the intervention?</td>
</tr>
<tr>
<td>• What do you want staff to do differently?</td>
<td>• How do you plan on initiating this EBI?</td>
<td>• Who is this project targeting?</td>
<td>• What are the intended outcomes or effects of this evidence-based intervention?</td>
<td></td>
</tr>
</tbody>
</table>

Remember:

• Use evidence to understand the problem and identify the evidence-practice gap
• Critically reflect on the problem or practice issue and the applicability of the new EBI in your workplace; and
• Foster trusting relationships to improve the likelihood of implementation success
Assemble an inter-professional implementation team

Teamwork

One of the primary roles of implementation practitioners is to motivate and inspire others to change. Developing an effective Implementation team will help you to operationalise your implementation plans.

Who is involved?

The following individuals may have an interest in being a part of your team:

- senior midwives or midwives in leadership positions,
- clinical managers,
- medical staff, and
- appropriate allied health professionals (i.e. physiotherapists, pharmacists, social workers etc.)

Consider the following questions when selecting team members:

- Is the individual able to attend meetings on a regular basis?
- Does the individual have prior experience implementing an EBI or another similar intervention?
- Does the individual bring a new perspective or skill that is missing from the current team?
- Does the team have a good mix of clinical professions?

REMEMBER

- Promote development of a strong team by encouraging a shared sense of purpose
- Develop and maintain trusting relationships throughout the implementation process
- Manage conflict early
- Practice active listening; and
- Highlight and affirm the strengths and successes of each member of the team

Inspired by The Centre for Implementation: https://thecenterforimplementation.com/core-competencies
Assessing readiness for practice change

Understanding your organisation’s readiness for practice change before you start your implementation project can help you to determine whether your implementation efforts are likely to be successful, or not. The following tools provide you with valid and reliable assessment measures to determine your organisation’s readiness for practice change. Choose the tool that is most appropriate for you.

Option 1: The CARI Tool

The Checklist to Assess Organisational Readiness (CARI) is a tool for individuals who are involved in leading an implementation project. It is designed as a pre-implementation ‘check’ to assess your organisation’s readiness for practice change.

<table>
<thead>
<tr>
<th>Checklist to Assess Readiness for Implementation (CARI)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. SYSTEM CAPACITY</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>A.1. The service funder, i.e., MOPS, recognises the importance of EIP.</td>
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</tr>
<tr>
<td>A.2. The service funder accepts that implementation of EIIs will necessitate affect service provision (e.g., could increase waitlist for services).</td>
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<tr>
<td>A.3. The service funder and/or administrator recognises that EIP implementation may require additional expenditures, requiring additional budget and/or shifting existing budgets.</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>A.4. Technical assistance (e.g., EIP training, coaching; ongoing support) is available during the EIP being implemented.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.5. All stakeholders having a role to play have been consulted about their views of the EIP implementation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B. ORGANISATIONAL CAPACITY</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>B.1. There is leadership support from top management in the form of a designated person responsible for implementation.</td>
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</tr>
<tr>
<td>B.2. This organisation’s mission reflects a commitment to being a learning organisation and a supporter of EIP.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.3. Human resources are adequate and available to introduce and sustain the EIP. This means:</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>i. You intend to select only those that match the competency levels of your staff</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>ii. You are prepared to deal with changes to job requirements and staffing</td>
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<td></td>
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<td></td>
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<tr>
<td>iii. You are prepared to deal with union issues</td>
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<tr>
<td>iv. You are prepared to formally recognize the EIP training/practice change accomplishments of your staff</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>B.4. Financial resources are adequate and available to introduce and sustain the EIP. Consider the costs of ongoing training (new staff), sustainability/re-invention, and monitoring of fidelity to the EIP, in addition to initial training. Costs may also be related to policy, system, or software changes.</td>
<td></td>
<td></td>
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<tr>
<td>B.5. Change at this time is appropriate and feasible in the life of the organisation. Consider competing priorities and their timelines (e.g., accreditation demands)</td>
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<td></td>
</tr>
</tbody>
</table>

Sub-Total: |
Total for A: |

Sub-Total: |
Total for B: |
### C. FUNCTIONAL CONSIDERATIONS

**To what extent do you think:**

| C1 | There is an outcome management system in place that will enable the organization to monitor client outcomes with the new EIP against preceding outcomes. |
| C2 | There is a system in place to share client outcomes with staff, boards, and clients. |
| C3 | There are the physical spaces required to practice the EIP selected (e.g., space for group session). |
| C4 | There is mentor to use outcome data to inform service delivery. |
| C5 | The organization will consider whether policies or service/vendor contracts require revision for the implementation of the EIP(s). |

Sub-Total:  
Total for C:

### D. ORGANIZATIONAL CULTURE/CLIMATE

**To what extent do you think:**

| D1 | Generally speaking, staff understand the mission and goals of this organization relate to evidence informed practice. |
| D2 | Generally speaking, staff in this organization understand what evidence-based practices are and hold positive attitudes toward their use. |
| D3 | Staff in this organization are given high levels of autonomy in their work and encouraged to ask questions. |
| D4 | There are open lines of communication in place in this organization. |
| D5 | Innovation is rewarded. |

Sub-Total:  
Total for D:

### E. SENIOR LEADERSHIP

**To what extent do you think:**

| E1 | Senior leadership considers that the EIP selected for implementation address an important problem / issue / gap in service delivery. |
| E2 | Implementing the selected EIP is aligned with organizational, regional, or system goals. |
| E3 | There are financial (e.g., cost effective) and/or mental health (e.g., better outcomes, meeting client needs) and/or safety reasons to implement this EIP. |
| E4 | Senior leadership is convinced of the value of this EIP. |
| E5 | Senior leadership is willing and able to lead and shape the implementation. |

Sub-Total:  
Total for E:
### F. STAFF CAPACITY

<table>
<thead>
<tr>
<th></th>
<th>Not even close</th>
<th>Some way to go</th>
<th>Nearly there</th>
<th>We're there</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**To what extent do you think?**

F1. Professional growth and development are desired by staff in this organization.

F2. Staff preferences for learning and practice change are taken into consideration when selecting the EIP and developing the implementation plan.

F3. Staff demonstrate readiness for practice change and a commitment to use the new EIP.

F4. There is a rationale for the selection of staff that will be trained on the EIP.

F5. Staff demonstrate evidence-based practice skills (e.g., client engagement, critical thinking, use of positive reinforcement, analytical thinking)

Sub-Totals:

Total for F:

<table>
<thead>
<tr>
<th></th>
<th>Not even close</th>
<th>Some way to go</th>
<th>Nearly there</th>
<th>We're there</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

### G. IMPLEMENTATION PLAN

**To what extent do you think?**

G1 There is a comprehensive implementation team in place (e.g., representatives from multiple areas of the organization).

G2 There is an implementation framework selected to guide the implementation process (e.g., MIBN model).

G3 There is time and means within the implementation plan to select an EIP provider that meets the organization’s needs, e.g., within budget, considers learning styles of practitioners, willing to work with you to ensure fidelity to the EIP and to provide ongoing support and coaching.

G4 There is a communications plan to share progress of the implementation plan with multiple stakeholders, regardless of their direct involvement (e.g., consider communication to your funder, board of directors, clients, community partners).

G5 There is intent to monitor fidelity of the EIP.

Total:

Total for G:
Sum the totals for each section and plot them with an X along the appropriate line. Then, connect the dots. Higher scores are good. The 'web' will highlight which areas require work within your organization.

**Option 2: Consolidated Framework for Implementation Research (CFIR)**

The CFIR is a context assessment tool that provides specific reasons for why change may or may not be happening in your workplace. Knowing where these are before you start your project enables you to address them so your implementation efforts are more likely to be successful.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Short Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. INTERVENTION CHARACTERISTICS</strong></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Intervention Source</td>
</tr>
<tr>
<td>B</td>
<td>Evidence Strength &amp; Quality</td>
</tr>
<tr>
<td>C</td>
<td>Relative Advantage</td>
</tr>
<tr>
<td>D</td>
<td>Adaptability</td>
</tr>
<tr>
<td>E</td>
<td>Trialability</td>
</tr>
<tr>
<td>F</td>
<td>Complexity</td>
</tr>
<tr>
<td>G</td>
<td>Design Quality &amp; Packaging</td>
</tr>
<tr>
<td>H</td>
<td>Cost</td>
</tr>
<tr>
<td><strong>II. OUTER SETTING</strong></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Patient Needs &amp; Resources</td>
</tr>
<tr>
<td></td>
<td>Cosmopolitanism</td>
</tr>
<tr>
<td>---</td>
<td>-----------------</td>
</tr>
<tr>
<td>C</td>
<td>Peer Pressure</td>
</tr>
<tr>
<td>D</td>
<td>External Policy &amp; Incentives</td>
</tr>
</tbody>
</table>

### III. INNER SETTING

<table>
<thead>
<tr>
<th>A</th>
<th>Structural Characteristics</th>
<th>The social architecture, age, maturity, and size of an organization.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Networks &amp; Communications</td>
<td>The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization.</td>
</tr>
<tr>
<td>C</td>
<td>Culture</td>
<td>Norms, values, and basic assumptions of a given organization.</td>
</tr>
<tr>
<td>D</td>
<td>Implementation Climate</td>
<td>The absorptive capacity for change, shared receptivity of involved individuals to an intervention, and the extent to which use of that intervention will be rewarded, supported, and expected within their organization.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>Tension for Change</th>
<th>The degree to which stakeholders perceive the current situation as intolerable or needing change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Compatibility</td>
<td>The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals’ own norms, values, and perceived risks and needs, and how the intervention fits with existing workflows and systems.</td>
</tr>
<tr>
<td>3</td>
<td>Relative Priority</td>
<td>Individuals’ shared perception of the importance of the implementation within the organization.</td>
</tr>
<tr>
<td>4</td>
<td>Organizational Incentives &amp; Rewards</td>
<td>Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary.</td>
</tr>
</tbody>
</table>
and less tangible incentives such as increased stature or respect.

5 Goals and Feedback  The degree to which goals are clearly communicated, acted upon, and fed back to staff, and alignment of that feedback with goals.

6 Learning Climate  A climate in which: a) leaders express their own fallibility and need for team members’ assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process; c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation.

E Readiness for Implementation  Tangible and immediate indicators of organizational commitment to its decision to implement an intervention.

1 Leadership Engagement  Commitment, involvement, and accountability of leaders and managers with the implementation.

2 Available Resources  The level of resources dedicated for implementation and on-going operations, including money, training, education, physical space, and time.

3 Access to Knowledge & Information  Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks.

IV. CHARACTERISTICS OF INDIVIDUALS

A Knowledge & Beliefs about the Intervention  Individuals’ attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.

B Self-efficacy  Individual belief in their own capabilities to execute courses of action to achieve implementation goals.

C Individual Stage of Change  Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention.

D Individual Identification with Organization  A broad construct related to how individuals perceive the organization, and their relationship and degree of
<table>
<thead>
<tr>
<th></th>
<th>Commitment with that organization.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Other Personal Attributes</td>
</tr>
<tr>
<td>V. PROCESS</td>
<td>Planning</td>
</tr>
<tr>
<td></td>
<td>Engaging</td>
</tr>
<tr>
<td></td>
<td>Opinion Leaders</td>
</tr>
<tr>
<td></td>
<td>Formally Appointed Internal Implementation Leaders</td>
</tr>
<tr>
<td></td>
<td>Champions</td>
</tr>
<tr>
<td></td>
<td>External Change Agents</td>
</tr>
<tr>
<td></td>
<td>Executing</td>
</tr>
<tr>
<td></td>
<td>Reflecting &amp; Evaluating</td>
</tr>
</tbody>
</table>

Dreyhouser et al. (2003); fostering implementation of health services research findings into practice. A consolidated framework for advancing implementation science. Implementation Science 4(30).
2. Identifying barriers and facilitators

We know that workplace culture can significantly affect your efforts to introduce an evidence-based innovation. It is also important to recognize that other barriers or facilitators may exist within your organization. If identified, these can be used to develop action strategies that address the barriers and leverage the facilitators of change.

Throughout this step continue to use theory and evidence to guide your implementation project. Identify, engage and mobilise champions who have influence at multiple levels within your organization. Motivate your team to stay focused and actively involved in the process.

The following tools will help you to identify the likelihood of your EBI being adopted, as well as your ability to implement and sustain it.

- Use evidence and theory to guide your implementation efforts
- Address resistance to change
- Develop an action plan to resolve challenges
- Identify champions of change

Inspired by the Centre for Implementation: https://thecenterforimplementation.com/core-competencies
Resource 1: The COM-B

The COM-B is designed to be used as an individual barriers and facilitators assessment tool. The tool outlines that in order for a person to change they need to have three things in place:

- They need to be capable of change
- They need to have the opportunity to change, and
- They need to be motivated to change

Knowing the individual barriers and facilitators of change can help you to select specific implementation strategies that target the behaviours you want to change.

Resource 2: The Transtheoretical Domains Framework (TDF)

The TDF can be used alongside the COM-B to investigate potential implementation problems and support intervention design. The TDF is a framework that consists of 14 domains, which expands on the COM-B to further breakdown the underlying barriers and enablers of change.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge</td>
<td>Knowledge (including knowledge of condition / generic rationale), procedural knowledge of task environment</td>
</tr>
<tr>
<td>2. Skills</td>
<td>Skills, Skills development, competence, ability, interpersonal skills, practice, skill assessment</td>
</tr>
<tr>
<td>3. Professional Role and Identity</td>
<td>Professional identity, professional role, social identity, identity, professional boundaries, group identity, leadership, organisational commitment</td>
</tr>
<tr>
<td>4. Beliefs about Capabilities</td>
<td>Self-confidence, perceived competence, self-efficacy, perceived behavioural control, beliefs, self-esteem, empowerment, professional confidence</td>
</tr>
<tr>
<td>5. Optimism</td>
<td>Optimism, persimmon, dispositive optimism, identity</td>
</tr>
<tr>
<td>6. Beliefs about Consequences</td>
<td>Beliefs, outcome expectancies, characteristics of outcome expectancies, anticipated regret, consequences</td>
</tr>
<tr>
<td>7. Reinforcement</td>
<td>Rewards (proximal / distal, valued / not valued, probable / improbable), incentives, punishment, consequences, reinforcement, contingencies, sanctions</td>
</tr>
<tr>
<td>8. Intentions</td>
<td>Stability of intentions, Stages of change model, Transtheoretical model and stages of change</td>
</tr>
<tr>
<td>9. Goals</td>
<td>Goals (distal / proximal), goal priority, goal / target setting, goals (autonomous / controlled), action planning, implementation intention</td>
</tr>
<tr>
<td>10. Memory, Attention and Decision Processes</td>
<td>Memory, attention, attention control, decision making, cognitive overload / tiredness</td>
</tr>
<tr>
<td>11. Environmental Context and Resources</td>
<td>Environmental stressors, resources / material resources, organisational culture / climate, salient events / critical incidents, person x environment interaction, barriers and facilitators</td>
</tr>
<tr>
<td>12. Social influences</td>
<td>Social pressure, social norms, group conformity, social comparisons, group norms, social support, power, intergroup conflict, alienation, group identity, modelling</td>
</tr>
<tr>
<td>13. Emotions</td>
<td>Fear, anxiety, affect, stress, depression, positive / negative affect, burn-out</td>
</tr>
<tr>
<td>14. Behavioural Regulation</td>
<td>Self-monitoring, breaking habit, action planning</td>
</tr>
</tbody>
</table>
You can use either of these tools to assess the barriers and enablers of change OR map the COM-B directly onto the TDF. In other words, you can plot your identified barriers and facilitators to the specific component they relate to – and target implementation strategies that address these issues.

Inspired by the Centre for Implementation: [https://thecenterforimplementation.teachable.com/courses/666495/lectures/1207730](https://thecenterforimplementation.teachable.com/courses/666495/lectures/1207730)
3. Selecting change strategies

The following resource provides you with a tool for mapping your barriers and facilitators, and linking these with effective change strategies. Change strategies help to overcome and/or leverage facilitators. The purpose of their use is to help people to change.

Resource 1: Selecting useful implementation strategies

The COM-B and TDF have been linked to implementations strategies that you might find useful to help initiate evidence-based change. The following table provides a template for how you might select implementation strategies that target your identified barriers and facilitators) change.

<table>
<thead>
<tr>
<th>COM-B</th>
<th>TDF Domain</th>
<th>Competence</th>
<th>Education</th>
<th>Enabling</th>
<th>Environmental restructuring</th>
<th>Incentives</th>
<th>Reinforcement</th>
<th>Role modeling</th>
<th>Persuasion</th>
<th>Restriction</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability</td>
<td>Knowledge</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Skills</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Opportunity</td>
<td>Memory, attention and decision processes</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Social influence</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Motivation</td>
<td>Professional role/identity</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Beliefs about motivation</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Optimism</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Goals</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Beliefs about consequences</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Reinforcement</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Emotion</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

There is no right strategy for all barriers and facilitators, so when selecting implementation strategies, choose the best-fit solution for your EBI and be ready to adapt your strategies if required. Often strategy selection is a combination of theory and common sense!

You may need to explore additional resources to provide you with a specific list of strategies, such as ERIC (Expert Recommendations for Implementing Change).

Table inspired by the Centre for Implementation: https://academic.reteimplementationtoolbox.com/sources/05663571/d2877039
Refining your list of strategies

There are other considerations that can help you select and refine your list of potential integration strategies.

Questions that you can ask when selecting integration strategies include:

- What is the level of evidence for this strategy?
- Is it feasible to develop this implementation strategy?
- Is this intervention strategy acceptable in this environment?
- Do you have the resources to operationalise the integration strategy and implement it?

Selecting 3-5 implementation strategies is ideal, but this is not a hard rule. Focus not on the number of strategies you are using but rather on their quality and how well they address barriers and facilitators. Remember, multiple barriers and facilitators can be targeted within one implementation strategy.

At the end of the process of selecting your integration strategies, you will have your WHAT and your HOW, linked together through theory and your barriers and facilitators assessment.

Image inspired by the Centre for Implementation: https://thecenterforimplementation.im statistics.com/resources/516413/?source=12897725
## 4. Implementing change

The process of implementing change requires changes at multiple levels: individual, local and organisational. Developing implementation strategies aimed at each of these levels will help the implementation process. The following tools are examples of common strategies used to bring about change in practice.

### Resource 1: Huddles

Huddles are quick stand-up meetings that can take place either before a shift change or at an allocated time that suits most staff at your place of work. The aim of the Huddle is to quickly review the process of the project and share success stories, as well as help each other with immediate challenges that are hindering the implementation process.

To conduct a huddle:

- Choose how frequently the huddles will be conducted
- Choose how long the huddles will be (we recommend allocating 15 minutes)
- Decide where the huddles will occur
- Make a regular announcement for when the scheduled huddles will occur
- Immediately prior to commencing a huddle, assemble as many midwives as possible to join in the session
- Start the huddle by thanking everyone for taking time out of their busy schedule and promise to keep the huddle short and focused
- Remember the guiding principle for the huddle is to determine how staff are responding to the practice change or intervention, providing opportunity for staff to express their concerns, queries or successes
- Seek feedback on how staff are doing and take notes of any barriers or improvement ideas that are shared by staff
- At the conclusion of the huddle you may find there is a "wish list" or list of "things we need to fix" that will need to be addressed before the next huddle.

Inspired by: [https://www.marescarede.co.uk/resourcesformidwives/Implementing-change/](https://www.marescarede.co.uk/resourcesformidwives/Implementing-change/)
Resource 2: One-to-one mentoring

One-to-one mentoring is a relationship that is designed to support people develop professional skillsets and confidence in their professional role. Leading practice change initiatives can be challenging for midwives, and having the support of an experienced change leader midwife is a valuable resource for midwives wanting to initiate an EBI. One to one mentoring benefits both the mentor and mentee and helps to build strong professional relationships within the profession.

The benefits of Mentoring

<table>
<thead>
<tr>
<th>For the Mentor</th>
<th>For the Mentee</th>
<th>For the Department/ Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Job satisfaction from seeing others develop</td>
<td>• Increased self confidence and motivation</td>
<td>• Increased levels of motivation from those involved</td>
</tr>
<tr>
<td>• Increased recognition from peers</td>
<td>• Support and challenge in formulating a clear sense of personal direction</td>
<td>• Employees who have a clear direction and clear objectives</td>
</tr>
<tr>
<td>• Challenge and stimulation</td>
<td>• Understanding of the formal and informal culture and structures at KMEU</td>
<td>• Improved communication at all levels and across levels</td>
</tr>
<tr>
<td>• Having identified future potential of the person they are mentoring</td>
<td>• An opportunity to develop skills by observing others</td>
<td>• Sharing of knowledge and experiences and best practice as standard working practice</td>
</tr>
<tr>
<td>• Learning and developing yourself from the process</td>
<td>• A source of knowledge and experience to tap into</td>
<td>• Thoughts and reasonable gains if work tasks and projects are used as a development tool</td>
</tr>
<tr>
<td>• Satisfaction at the success of the mentee</td>
<td>• A sounding board to discuss ideas and approaches before action is taken</td>
<td>• Innovation and continuous improvement in the way that employees approach their work</td>
</tr>
<tr>
<td>• Recognition of your mentoring skills by the Department and the University</td>
<td>• An opportunity to think about things in a different way</td>
<td></td>
</tr>
<tr>
<td>• Motivation from self development and responsibility</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Different roles a Mentor may be required to take

Inspired by: [https://www.mpermasita.net/mobilization/](https://www.mpermasita.net/mobilization/)
Resource 3: Visual reminders: Posters

Posters are a great visual tool that can be used to remind staff about a new EBI or practice change that is being implemented into your clinical area. For example:

Your 5 Moments for Hand Hygiene

**1. BEFORE TOUCHING A PATIENT**
- **WHEN**: Clean your hands before touching a patient/area/vehicle/apparatus/... 
- **WHY**: To protect the patient against harmful germs carried on your hands.

**2. BEFORE CLEAN ASEPTIC PROCEDURE**
- **WHEN**: Clean your hands immediately before performing aseptic or sterile procedures.
- **WHY**: To protect the patient against harmful germs, including those present on your hands.

**3. AFTER DECON TOWARDS ROOM**
- **WHEN**: Clean your hands immediately after entering an occupied or newly made patient room.
- **WHY**: To protect yourself and the healthcare environment from harmful patient germs.

**4. AFTER TOUCHING A PATIENT**
- **WHEN**: Clean your hands after touching a patient and his immediate surroundings, when leaving the patient's side.
- **WHY**: To protect yourself and the healthcare environment from harmful patient germs.

**5. AFTER TOUCHING PATIENT SURROUNDINGS**
- **WHEN**: Clean your hands after touching anything on the patient's immediate surroundings, or anything the patient has not touched.
- **WHY**: To protect yourself and the healthcare environment from harmful patient germs.

5. Planning for sustainability

The ultimate goal of implementation is to create sustainable change. Planning for this encompasses way in which you can plan for, and support, sustainability.

It is important to think about sustainability early in your implementation project and refer back to it often throughout the stages of implementation. Consider the following questions when you are planning for, and implementing, an evidence-based practice change in your workplace:

- How are you going to sustain the changes that people are making?
- How are you going to sustain the implementation strategies you apply?
- How will you consider to deliver these over time?
- How are you going to capture outcomes and maintenance of those outcomes over time?

It is crucial to be proactive in how you plan for sustainability and the adaptations required during the sustainability phase.

- Build capacity for sustainability
- Assess factors that influence sustainability, spread and scale-up
- Establish a sustainability plan from the outset of your project

Inspired by The Centre for Implementation: https://thecenterforimplementation.com/core-competencies
## Resource 1: Sustainability goal setting table

<table>
<thead>
<tr>
<th>Sustainability Component</th>
<th>Key questions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>When will sustainability start for you? Have this timeframe in mind as you think about the remaining components below</td>
<td></td>
</tr>
<tr>
<td>Individual practices</td>
<td>What new can do you want to become an everyday practice? Think about feasibility and what you realistically hope to sustain.</td>
<td></td>
</tr>
<tr>
<td>Organisation activities</td>
<td>What change strategies will continue to be delivered in the long term?</td>
<td></td>
</tr>
<tr>
<td>Adaptability</td>
<td>What aspects of your project can be adapted in response to staff feedback? Plan ahead so you can easily revise the format your you implementation process.</td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td>What benefits will continue for patients and the health system?</td>
<td></td>
</tr>
</tbody>
</table>

Inspired by NHS Online library of Quality, Service Improvement and redesign tools: [https://www.google.com/search?q=Friday%20Firebox%20Implementation%20Guide](https://www.google.com/search?q=Friday%20Firebox%20Implementation%20Guide)
6. Evaluating Outcomes

How to Conduct an Effective Post Event Evaluation

Implementation leaders are not always responsible for evaluating the success of their implementation efforts but should at a minimum understand and apply the fundamentals of planning, monitoring and evaluating implementation projects. The following tools may be used to help you evaluate the success of your implementation project.

Plan, Do, Study, Act (PDSA) cycles and the model for improvement

![PDSA cycles diagram]

The model for improvement provides a framework for developing, testing and implementing changes that lead to improvement. Like sustainability, the evaluation process ideally begins from the outset of the project and includes three key questions:

- What are you trying to accomplish?
- How will you know the change is an improvement to practice? What measures of success will you use?
- What changes need to be made to ensure your implementation project will result in an improvement to practice?
The four stages of the PDSA cycle are:

Plan: the change to be tested or implemented.

Do: carry out the implementation project.

Study: based on the measurable outcomes agreed before starting out, collect data before and after the change and reflect on the impact of the change and what was learned.

Act: Plan the next change cycle or upscale the implementation project.

Continue with the PDSA cycles until practice change is embedded into everyday care interventions.

- Use one of the resources below to guide your evaluation
- Evaluate the overall success of your implementation project
- Include your implementation team throughout the process
- Continue to engage with your key stakeholders
- Continue to communicate and collaborate with those most affected by the change
**Resource 1: PDSA template**

<table>
<thead>
<tr>
<th>TEAM:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AIM</strong></td>
<td>What evidence-based innovation you aim to implement into your workplace?</td>
</tr>
<tr>
<td>Describe your first (or next) test of change</td>
<td>Person responsible</td>
</tr>
<tr>
<td><strong>PLAN</strong></td>
<td></td>
</tr>
<tr>
<td>List the tasks needed to set up this test of change</td>
<td>Person responsible</td>
</tr>
<tr>
<td><strong>DO</strong></td>
<td>Implement the evidence-based innovation into practice environments</td>
</tr>
<tr>
<td><strong>STUDY</strong></td>
<td>Describe what actually happened when you ran the test</td>
</tr>
<tr>
<td>Describe the measured results and how they compared to the predictions and what you learned from the cycle</td>
<td></td>
</tr>
<tr>
<td><strong>ACT</strong></td>
<td>Describe modifications for the next cycle based on what you learned</td>
</tr>
</tbody>
</table>

Example inspired by: [https://www.google.com/search?q=implementation+of+pdca+framework](https://www.google.com/search?q=implementation+of+pdca+framework)
DEVELOPING AN EVALUATION PLAN

The RE-AIM framework can be used to guide evaluation planning. The framework guides you in selecting the types of indicators that you may want to include in your evaluation plan.

**Reach** is defined as the absolute number, proportion and representativeness of individuals who are willing to participate in a given initiative. This is a process outcome. As such, you might want to include outcomes related to the WHAT and outcomes related to the HOW if assessing Reach.

**Effectiveness** is defined as the impact of an intervention on important outcomes, including potential negative effects, quality of life, and economic outcomes. Effectiveness relates to the short-, medium- and long-term outcomes you want to reach through your implementation efforts. Be sure your outcomes are well-defined and realistic to achieve.

**Adoption** is defined as the absolute number, proportion and representativeness of settings and intervention agents who are willing to initiate a program. Adoption is a relevant indicator when there are multiple implementation settings.

**Implementation** refers to the intervention agents' fidelity to the various elements of an intervention's protocol. This captures outcomes related to the implementation process. Therefore, there are relevant indicators related to the WHAT and the HOW. Note, indicators related to the HOW tell you what happened during implementation and cannot be overlooked.

Implementation is also known as implementation quality. There are specific indicators available to help you measure this, including: 1) dose; 2) reach; 3) adaptation/fidelity; 4) participant responsiveness; and 5) quality of delivery.

**Maintenance** is defined as the extent to which the intervention becomes institutionalized or routine practice. This tells you about sustainability.

Example inspired by: https://thecempm.implementationtraining.com/courses/9955473/lectures/129077770
“Exploring the usability of the COM-B model and Theoretical Domains Framework (TDF) to define the helpers of and hindrances to evidence-based change in midwifery.”
Appendix G: Paper Three – Data Set

The complete data set for paper three: “Exploring the usability of the COM-B and Theoretical Domains Framework (TDF) to define the helpers of and to hindrances evidence-based practice in midwifery.”

<table>
<thead>
<tr>
<th>Codes</th>
<th>Sub-categories</th>
<th>Major Categories</th>
<th>Core finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘We didn’t think it was going to be an issue, well…the medical directors refused to participate…they resisted and they weren’t going to let it go’ (MW2)</td>
<td>The stumbling block is medical opposition and workplace culture; they are two of the biggest challenges for midwives</td>
<td>For midwives, medical opposition and workplace culture are the biggest challenges</td>
<td>Fear can stop change and midwives lack the confidence and knowledge to implement EBP, however stakeholder buy-in and strong midwifery leadership is advantageous</td>
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<tr>
<td>‘[implementing] water birth was more difficult, primarily because of medical opposition’ (MW6)</td>
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<tr>
<td>‘The obstetrician’s threw tantrums…literally stormed out of rooms and threatened to withdraw their services…’ (MW3)</td>
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<tr>
<td>‘Medical directors were bypassed to get [new EBPs] it across the line’ (MW5)</td>
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<tr>
<td>‘Obstetricians are one of our biggest problems…they constantly challenge us’ (MW2)</td>
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<tr>
<td>‘Why do we need medical approval for implementing something that is essentially midwifery led and entirely within our scope of practice?’ (MW6)</td>
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<tr>
<td>‘We didn’t think it was going to be an issue, well...the medical directors refused to participate ‘there is no evidence to support this practice’...we need more evidence...they resisted and they weren’t going to let it go’ (MW6)</td>
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<tr>
<td>‘Midwives were keen, but the stumbling block is medical opposition. We had to work around them [medical directors], and I think still today they don’t know that it is in practice’ (MW6)</td>
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<tr>
<td>‘Culture is one of our biggest problems’ (MW3)</td>
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<tr>
<td>create a positive culture’ (MW1)</td>
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<td>‘Keeping people in the loop so there is no rumour mongering, which can cripple a project’ (MW4)</td>
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<td>Codes</td>
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<tr>
<td>‘I want to do it but can’t do it now’ (MW4)</td>
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<tr>
<td>‘People working in the service did not trust the evidence...that was the culture’ (MW2)</td>
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<tr>
<td>‘It’s a double edged sword...midwives saying ‘I want to’, and saying all the things the executives want to hear them saying, agreeing with them that the evidence is great...then when they actually come to do it, it’s like ‘I want to do it, but I can’t do it now...’’ (MW5)</td>
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<tr>
<td>‘The obstetrician’s threw tantrums...literally stormed out of rooms and threatened to withdraw their services...’ (MW3)</td>
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<td>‘I have received hate mail from people thinking what I wanted to bring into practice was unsafe’ (MW5)</td>
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<tr>
<td>‘Behind closed doors all the midwives were saying ‘look we can’t do it now, let’s start it next year’ (MW5)</td>
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<tr>
<td>‘Resistance from all of those who say that sounds like a great idea, and in a perfect world if I didn’t have my family, need sleep, all of that...’ (MW5)</td>
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<td>‘Our midwives don’t necessarily want it’ [practice change] (MW3)</td>
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<td>‘Medical directors were bypassed to get [new EBPs] across the line’ (MW5)</td>
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<td>‘Obstetricians are one of our biggest problems...they constantly challenge us’ (MW2)</td>
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<tr>
<td>‘It’s difficult to motivate them especially when there is so much change that occurs...’ (MW7)</td>
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<td>‘Midwives think it’s too much hassle and too much work when they’re in the middle of a busy shift’ (MW7)</td>
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<tr>
<td>‘I think that’s why we get things done at, all regions are engaged...we don’t do things individually, we’re all in or all out’ (MW8)</td>
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<td>Codes</td>
<td>Sub-categories</td>
<td>Major Categories</td>
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<tr>
<td>‘I’ve received hate mail from people thinking what I wanted to bring in</td>
<td>Fear</td>
<td>Fear can stop</td>
<td>‘Fear can stop change: it’s personal for midwives’</td>
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<td>was unsafe…there was so much distrust, which stopped basically</td>
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<td>change: it’s</td>
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<tr>
<td>stopped the [EBP] project’ (MW3)</td>
<td></td>
<td>personal for</td>
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<tr>
<td>‘Midwives’ didn’t have an understanding for it [water birth] and</td>
<td></td>
<td>midwives</td>
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<td>that brought about fear, and when there is fear that stops change’</td>
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<td>(MW1)</td>
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<td>‘Fear came in…and some of that was personality, which was what I</td>
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<td>really believe held up the process’ (MW7)</td>
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<td>‘When there’s a perceived threat to midwives’ family time or</td>
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<td>income…there’s distrust, and fears come in’ (MW4)</td>
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<td>‘Part of the fear was not understanding it [new EBP] operationally</td>
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<td>as in, how that would affect what midwives had to do and how it</td>
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<td>would affect their personal lives’ (MW5)</td>
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<tr>
<td>‘When we went to do it [implement practice change], even though</td>
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<td>midwives were saying ‘we want this, this is the way to go’ when it</td>
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<td>would come to actually signing up for MGP, fear came in’ (MW5)</td>
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<td>‘Midwives want to know ‘why?’ even when they’ve been shown the</td>
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<td>evidence…they want to know how it effects them on the floor’ (MW7)</td>
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<tr>
<td>I’ think there is distrust ‘why are we changing things again?’ ‘does</td>
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<td>this mean more paperwork?’ (MW7)</td>
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<td>‘Some of its personality...’ (MW7)</td>
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<tr>
<td>‘It’s also depends where the change is coming from…if it’s something</td>
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<td>we’ve thought of [midwives]... so it is driven by us…there’s usually</td>
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<td>less fear of change’ (MW7)</td>
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<tr>
<td>‘Some midwives look at the evidence but don’t apply the evidence’</td>
<td>Knowledge and</td>
<td></td>
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<tr>
<td>(MW1)</td>
<td>confidence</td>
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<tr>
<td>‘Midwives think it’s too much hassle [implementing new EBPs] and too</td>
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<td>Codes</td>
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<tr>
<td>much work when they’re in the middle of a busy shift’ (MW7)</td>
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<tr>
<td>‘They [midwives] need praise and reassurance to let them know they’re initiatives are noticed’ (MW7)</td>
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<tr>
<td>‘It’s difficult to motivate them [midwives] when there’s so much change that occurs’ (MW6)</td>
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<tr>
<td>‘It’s hard work [implementing EBP] and the criticisms keep coming’ (MW4)</td>
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<td>‘We need our midwives to feel confident that they have the ability…and the evidence to defend their practices…and believe in their knowledge-base’ (MW3)</td>
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<td>‘We had the evidence we just needed to remove the fear and play it out’ (MW6)</td>
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<tr>
<td>‘How do we translate something that we [midwives] can’t interpret?’ (MW3)</td>
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<tr>
<td>‘Some [midwives] don’t even know where to go to source good evidence’ (MW3)</td>
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<tr>
<td>‘Midwives need to know they have the ability and the evidence to defend their practice and challenge others practice…to believe in their knowledge’ (MW1)</td>
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<tr>
<td>Midwives want to know ‘why?’ even when they’ve been shown the evidence…they want to know how it effects them on the floor (MW7)</td>
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<tr>
<td>‘There are still a lot of midwives who are unsure of how to read the evidence, they’re not confident with the interpretation, despite doing research units at university’ (MW3)</td>
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<tr>
<td>‘How do we translate something that we [midwives] can’t interpret?’ (MW3)</td>
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<tr>
<td>‘Some midwives don’t even know where to go to source good evidence’ (MW3)</td>
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<tr>
<td>‘We can’t move forward if our midwives don’t have the confidence to change’ (MW7)</td>
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<tr>
<td>Codes</td>
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<tr>
<td>‘Link change to good evidence, arm midwives with the knowledge-base to initiate evidence-based change.. (MW3)</td>
<td></td>
<td></td>
<td>Stakeholder buy-in and strong midwifery leadership</td>
</tr>
<tr>
<td>‘To get to the point where we have actually introduced changes – like midwifery led care – it’s being a squeaky wheel and getting the buy-in from the people who can actually implement the change’ (MW4)</td>
<td></td>
<td></td>
<td>Having stakeholder buy-in and strong midwifery leadership is a huge advantage</td>
</tr>
<tr>
<td>‘Midwives are tired of fighting the battle for ‘normality’” (MW2)</td>
<td></td>
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<tr>
<td>‘Midwives and managers are flat strapped, we’re tired of fighting a constant battle for our women’ (MW6)</td>
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<tr>
<td>‘Midwives don’t have the time or energy to introduces new practices’ (MW6)</td>
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<tr>
<td>‘The average midwife tends to give up because it is too hard, there are too many barriers’ (MW6)</td>
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<tr>
<td>‘Our obstetricians often fight against the evidence ... midwives get worn down by that...it effects their psyche and the culture (MW1)</td>
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<tr>
<td>‘Even now, the criticisms still comes...10 years on’ (MW3</td>
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<tr>
<td>‘The evidence is everywhere but has been resisted by medical clinicians...it’s exhausting for midwives’ (MW3)</td>
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<tr>
<td>‘Our midwives are fatigued, there have been so many changes and innovations ‘(MW7)</td>
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<tr>
<td>‘It’s very difficult, midwives are tired and they work hard’ (MW7)</td>
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<tr>
<td>‘I think because it was a midwife-led initiative we had instant buy-in...and that made a huge difference to the outcome of the project’ (MW6)</td>
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<tr>
<td>‘Getting the right stakeholders on board or having broader consultation’ (MW4)</td>
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<tr>
<td>Codes</td>
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<td>outcomes of your service...if midwives are able to practice according to latest evidence’ (MW6)</td>
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<tr>
<td>‘To get to the point where we actually introduced change...it was about being the squeaky wheel and getting buy-in from the people who could actually implement the change’ (MW4)</td>
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<tr>
<td>‘Getting the right stakeholders on board from the start is a huge advantage’ (MW1)</td>
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<td>‘Have a midwife at the top level, a driver of change’ (MW8)</td>
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<tr>
<td>‘You need buy-in at all levels’ (MW6)</td>
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<tr>
<td>‘you need an operational midwife who can physically take anyone and give them the direction’ (MWS5)</td>
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<tr>
<td>‘You really need someone who is articulate and knows the evidence, a midwife who communicates well with everyone (MW5)</td>
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<tr>
<td>‘Having somebody to keep on driving the initiative, so it’s not allowed to go backwards because things do’ (MW3)</td>
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<td>‘We’ve lead initiatives and had high level midwives on our board...this assisted change...’ (MW3)</td>
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<tr>
<td>‘Changes take time and sometimes you need a visible presence...you’ve got to drive it and sometimes that’s not easy (MW7)</td>
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<tr>
<td>‘Midwives are too busy, we don’t do change well...this is a huge barrier and midwives don’t have the confidence to do it [initiate practice change]’ (MW6)</td>
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<tr>
<td>‘Have a midwife at the top level, a driver of change’ (MW8)</td>
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<tr>
<td>‘Having high levels midwives in leaderships roles is a huge advantage...and buy-in at all levels’ (MW1)</td>
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<tr>
<td>‘You need a champion at the top level, a driver for change’ (MW8)</td>
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<td>‘You need an expert in what you are trying to implement (ie a clinician</td>
<td></td>
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<tr>
<td>Codes</td>
<td>Sub-categories</td>
<td>Major Categories</td>
<td>Core finding</td>
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<td>experienced in the change you want to implement) someone who’s had a positive experience so you don’t get all that negative stuff that people don’t want to hear…’ (MW5)</td>
<td>‘Change initiatives have to be endorsed at the top level’ (MW6)</td>
<td></td>
<td>‘If we want to really see midwives putting evidence into practice…it’s about managing change and having leaders support the change’ (MW2)</td>
</tr>
<tr>
<td>‘I find our biggest challenge is the change management aspect’(MW3)</td>
<td>‘Management is nursing focused and doesn’t understand midwifery…it’s a small cog in a big machine…and the big machine is nursing’ (MW1)</td>
<td></td>
<td>‘How do you get important midwifery evidence into the world with executives that are mostly nurses?’ (MW3)</td>
</tr>
<tr>
<td>‘We have a very supportive nursing and midwifery co-director who is focused on making the best service for women’ (MW7)</td>
<td>‘You need organisational support…’ (MW7)</td>
<td></td>
<td>‘It actually needs a top-down approach – so I think from my perspective what you need to do is have buy-in at the executive director level’ (MW4)</td>
</tr>
</tbody>
</table>
Appendix H: Ethics Approval from Edith Cowan University

29 March 2019

Mrs Annemarie DE LEO

Dear Mrs De Lao,

I am pleased to write on behalf of the Associate Dean Research who has approved your PhD research proposal: Mobilizing evidence to practice in midwifery: Development of a web-based evidence implementation resource for midwives in all midwifery contexts.

I also wish to confirm that your research project complies with the provisions contained in the University’s policies for the conduct of ethical research, and you have met your ethics requirements by submitting either an ethics application or declaration. Your ethics approval number is 2018-00097-DELEO and the period of approval is 30 January 2019 to 30 November 2020.

Approval is given for your supervisory team to consist of:

Principal Supervisor: Associate Professor Sara Bayes – ECU
Adjunct Supervisor: Associate Professor Sadie Geraghty – CDU
Adjunct Supervisor: Mrs Janice Butt – WA Health

The examination requirements on completion are laid down in Section 6 of The University (Admissions, Enrolment and Academic progress) Rules for Courses Requiring the Submission of Theses.

Additional information and documentation relating to the examination process can be found at the Graduate Research School website: http://research.ecu.edu.au/hrs/

Please note: As a guide, the maximum number of words in the text, excluding references and appendices, for a doctoral thesis is, 100,000 words.

I would like to take this opportunity to offer you our best wishes for your research and the development of your thesis.

Yours sincerely

Shelley Huts
Senior Student Transaction Officer
Student Administration
Edith Cowan University
International: +61 8 9304 0000
CRICOS Institution Provider Code: 00275B


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