MONASH University

Midwifery telephone triage: A mixed methods study.

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Abstract

Background:

Midwives use telephone triage to evaluate childbearing women's concerns and determine a need for advice or further assessment. Calls are made to individual maternity units rather than to general call centres or triage services. Skilful assessment via the telephone is an important practice in the provision of appropriate and timely healthcare for childbearing women. Despite the importance of telephone triage in maternity care, the experiences, practice and viewpoints of midwives' have rarely been examined.

Aim:

This study aimed to explore the views, experiences and practices of midwives in their management of telephone triage in Victoria, Australia.

Design:

Using a two-phase sequential explanatory mixed method design study, currently practising midwives (*n* = 230) completed an online survey which explored their telephone triage practises. One-to-one interviews with midwives (*n* = 14) was undertaken in phase 2 to further explore midwives' experiences of telephone triage and to expand understandings of the survey findings.

Results:

Telephone triage is frequently managed in environments with distractions, and most midwives (84%; *n* = 177) report receiving no training in this skill. Most midwives (83%) respond to 2-5 telephone calls per shift, with only 11.7% (*n* = 24) reporting that this is included in their workloads. However, midwives report they are confident in performing telephone triage, with higher confidence levels related to midwives' increased years of experience ($p < 0.05$) and age ($p < 0.01$). Anxiety related to managing telephone triage has been experienced by 73% (*n* = 151) of midwives. Comparative analyses illustrate there are differences in level of anxiety based on years of experience, or location of midwifery practice. Practice is guided by a variety

of standards and aids, and calls are documented in a range of ways. Thematic analysis of the interviews revealed four themes and subthemes: *Workplace complexity* (consists of workplace environment, telephone triage processes, workloads and allocating resources), *The emerging practitioner* (perceptions of getting it right, and meeting expectations), *Ask the midwife* (communication, interpersonal skills, individual knowledge and experience, and training), and *Risky business* (types of risk, sources of risk, and managing risk). These themes provide in-depth descriptions about midwives management of telephone triage and the influencing factors surrounding this practice.

Conclusion:

This study highlights the variations in practice, service provision and management of telephone triage in midwifery practice. Midwives respond to a large volume of calls, therefore needing considerable time to provide care to women via the telephone. Environmental concerns can impede information gathered and decisions made. High-level communication and interpersonal skills along with empathy are needed.

Implications for practice:

Training and support to develop midwives' telephone triage skills is recommended. As communication platforms and technologies evolve, these findings provide a foundation for consideration when providing midwifery care at a distance.

Publications during enrolment

Bailey, C.M., Newton, J.M. & Hall, H.G. (2018). Telephone triage and midwifery: A scoping review. *Women and Birth*, 31(5), 414-421.

Bailey, C.M., Newton, J.M., & Hall, H.G. (2019). Telephone triage in midwifery practice: A cross-sectional survey. *International Journal of Nursing Studies*, 91, 110-118.

Thesis including published works declaration

I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

This thesis includes two original papers published in peer-reviewed journals. The core theme of the thesis is midwifery telephone triage. The ideas, development and writing up of all the papers in the thesis were the principal responsibility of myself, the student, working within the School of Nursing and Midwifery under the supervision of Associate Professor Jennifer Newton-Weller and Associate Professor Helen Hall.

(The inclusion of co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research.)

In the case of chapters two and four, my contribution to the work involved the following:

Thesis Chapter	**Publication Title**	**Status** *(published, in press, accepted or returned for revision, submitted)*	**Nature and % of student contribution**	**Co-author name(s) Nature and % of Co-author's contribution***	**Co-author(s), Monash student Y/N***
2	Telephone triage and midwifery: A scoping review.	Published	70% concept, development, writing draft, editing and submission.	1) Assoc. Prof Jennifer Newton-Weller, input into manuscript 15% 2) Assoc. Prof Helen Hall, input into manuscript 15%	No No
4	Telephone triage in midwifery practice: A cross-sectional survey.	Published	65% concept, data collection & analysis, writing draft, editing and submission.	1) Assoc. Prof Jennifer Newton-Weller, input into manuscript 20% 2) Assoc. Prof Helen Hall, input into manuscript 15%	No No

I have not renumbered sections of submitted or published papers in order to generate a consistent presentation within the thesis.

Student signature: *Carolyn Bailey* **Date:** 29/04/2020

The undersigned hereby certify that the above declaration correctly reflects the nature and extent of the student's and co-authors' contributions to this work. In instances where I am not the responsible author I have consulted with the responsible author to agree on the respective contributions of the authors.

Main Supervisor signature: *Jennifer Weller-Newton* **Date:** 29/04/2020

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There are a number of people who have assisted me throughout this PhD journey to make the experience rewarding. I have been encouraged, supported, led along, and nudged or gently pushed at times when I needed it most.

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To my amazing family, husband Stuart, sons Matthew, Joshua and Callum, I offer my heartfelt thanks. Your love, support, patience, encouraging words, and endless cups of tea have meant more than you know, I love you all. I hope that I have in some small way inspired you to continue to achieve your own dreams and goals.

Dad and Mum, you have always given me your unwavering love, support and encouragement, and instilled in me that I could achieve anything that I set my mind to as long as I worked hard and believed I could do it. I love you and thank you for all that you have done for me. As well as wonderful parents I am lucky to have friends, siblings, nieces and nephews who are equally supportive. In particular my sister Sharyn who has provided me with practical support and comic relief when I needed it most.

My thanks must go to the midwives who participated in this study. Midwives through the work they do, and their innate attributes give a lot of themselves to others. Very often the work they do is unseen and therefore not always publicly acknowledged. Through the work of

this thesis further light is now shed on one aspect of midwifery practice and I give my gratitude to these midwives for generously sharing their experiences.

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CHAPTER ONE – INTRODUCTION

Chapter One – Introduction

1.1 Introduction

"Hello, can I speak with a midwife please?" "Certainly, I am a midwife, how can I help"

Midwives across the world receive telephone calls every day from childbearing women. For some women it is their first contact with a midwife, for others it is not. For midwives, they may or may not know the woman they are speaking with on the telephone. Together midwives and women navigate their way through these telephone calls. It would appear these calls have been happening for as long as households and clinicians have had telephone access. This thesis presents a study, which explored telephone triage in midwifery practice in the state of Victoria, Australia. This introductory chapter provides some context to the study, including the background, significance, and my particular professional interest in the topic. In addition, chapter one presents the research problem, the research questions and scope, and finally the overall outline of this thesis.

1.2 Historical perspective of telephone triage

From an historical perspective triage is a practice dating back to the early battlefields where soldiers were categorised based on chance of survival. Huibers, Smits, Renaud, Giesen and Wensig (2011) describe triage as the process to determine level of urgency and type of health care required during requests for help, and requires the caregiver to ask questions to estimate urgency, appropriate advice and need for referral. High patient volumes presenting to emergency departments during the 1950s and 1960s prompted the emergence of triage systems in healthcare (Angelini & Menihan, 1996). Triage is recognised internationally as a means for managing access to healthcare, and to efficiently manage the demands on the health service (Knight, Endacott, & Kenny, 2010). There are various types of telephone triage services that have emerged in response to increased healthcare needs.

Telephone triage services have been increasing locally and internationally in response to demand for unscheduled health care throughout the early part of the 21st century (Blank et al., 2012; Kaminsky, Röing, Björkman, & Holmström, 2017; Knight, Kenny, & Endacott, 2015; Varley et al., 2016). In particular workloads in primary health and emergency care are managed using the strategy of telephone triage services (Murdoch et al., 2015; Varley et al., 2016). These services may be National triage call centres, such as the National Health Service Direct in the United Kingdom, Health Direct in Australia, or Swedish Healthcare Direct, or locally based within individual health services (Kaminsky et al., 2017; Knight et al., 2015). There are also informal triage services, particularly in rural Australia where residents are more likely to call their local health service for care rather than a National call centre (Knight et al., 2015). The aim of the telephone triage is to determine clinical urgency of the caller, and direct them to the most appropriate healthcare (Ernesäter, Engström, Winblad, Rahmqvist, & Holmström, 2016; Holmström, Gustafsson, Wesström, & Skoglund, 2019; Huibers, Keizer, Giesen, Grol, & Wensing, 2012; Kaakinen, Kyngäs, Tarkiainen, & Kääriäinen, 2016; Kaminsky et al., 2017; Murdoch et al., 2015). This sorting of caller's needs, and directing to more appropriate healthcare is an attempt to lessen the burden of inappropriate presentations to general practitioners or urgent care settings such as emergency departments (Kaakinen et al., 2016; Kaminsky et al., 2017; Lake et al., 2017). However, an overview of evidence from systematic reviews conducted by Lake et al., (2017) found that the effect of telephone triage on reduction in demand for primary healthcare or emergency care services has not been established. The aims of telephone triage appear universal; however, it appears that telephone triage may not be a standard term used for this healthcare service.

The terminology for telephone services is inconsistent in the literature. There are interchangeable terms used, for example telephone triage and telephone consultation. However, there appears to be a variance in meaning of these terms (Blank et al., 2012). Whilst telephone triage is a sorting mechanism based on urgency of clinical need, telephone

consultations are focussed on outcomes such as treatment, health advice, and self-care where appropriate (Blank et al., 2012). The variances in terminology used may be generated from the health disciplines describing the service. Telephone triage has been performed by medical practitioners, nurses and non-clinicians or lay operators, with descriptions of the service provided in the literature from each group.

Triage services can be managed by various call takers including clinicians, e.g. nurses and general medical practitioners, or non-clinicians (Murdoch et al., 2015). Several studies have compared different types of call takers against outcomes of the service, accuracy of decisions, and caller compliance and satisfaction (Blank et al., 2012; Huibers et al., 2012; Lake et al., 2017; Varley et al., 2016). Each of these studies are varied and use different definitions to describe outcome measures that make comparisons between studies challenging. However, these studies do conclude that the evidence base thus far is small and it is therefore difficult to draw conclusions (Blank et al., 2012; Huibers et al., 2012; Lake et al., 2017). The reports of services with lay operators indicate the widespread use computerised decision support software (CDSS) to assess, diagnose and triage callers (Murdoch et al., 2015). Similar CDSS may be used by clinicians, or they may use their own clinical assessment and judgement (Ernesäter et al., 2016; Kaakinen et al., 2016). Recent studies of nurses and their use of CDSS indicate that nurses use a mix of their own clinical expertise and the CDSS for assessing callers, with the CDSS confirming decisions in a complementary manner, or disregarded if conflicting with the nurse's professional judgement (Holmström et al., 2019; Kaminsky et al., 2017; Kirkley, 2019; Murdoch et al., 2015). The process of telephone triage is diverse and multifaceted requiring specialised knowledge and skills.

When clinicians triage, they are not just looking to assess, diagnose and direct callers to the most appropriate healthcare, they also provide support, and educate callers on self-care measures (Holmström et al., 2019). These types of activities over the telephone are complex

to manage, particularly as the clinician is reliant upon the caller's descriptions, and with the absence of visual cues inherent risk compared to in-person assessment is amplified (Holmström et al., 2019; Huibers et al., 2012; Johnson, Wilhelmsson, Börjeson, & Lindberg, 2015). Throughout the telephone triage literature specific skills and expertise of the triageur are recognised to manage the complexity of triaging. These skills include the ability to communicate over the telephone, specifically the ability to listen for verbal and non-verbal cues, questioning to obtain a focussed history, shared decision-making with the caller, and an ability to remain person-centred throughout are deemed important (Ernesäter et al., 2016; Huibers et al., 2012; Johnson et al., 2015; Kaminsky et al., 2017). Sound communication skills have been found to be the main variable for caller satisfaction and acquiescence with decisions in several studies (Ernesäter et al., 2016; Johnson et al., 2015; Kaminsky et al., 2017). Other characteristics of the triageur deemed important are a broad clinical knowledge base and being experienced, with several studies finding that years of experience and level of qualifications are positively associated with improved triage outcomes such as accuracy (Kaminsky et al., 2017; Varley et al., 2016). Accuracy of telephone triage decisions will likely benefit the caller as well as improving flow of patients appropriately through health services. Additionally, there are other benefits of telephone triage.

1.2.1 Benefits of telephone triage

There are numerous benefits of telephone triage in a country with vast geography such as Australia. Telephone triage is useful for both the caller and the health service when distances are significant, particularly when the caller is from a rural location. The caller can more easily access healthcare, and be directed to the most appropriate service, thus avoiding presentation to a service that does not have the capability to manage their needs (Kirkley, 2019; Knight et al., 2010). The caller may be known to the local health service, which may assist in determining the urgency or care required (Knight et al., 2015). Other benefits identified are effective management of demand for healthcare, as there are estimates that

more than half of out of hours calls could be managed with advice alone (Lake et al., 2017). If this is the case, then there is potential to reduce workloads for general practitioners and emergency departments, thereby reducing healthcare costs to both patient and health services (Kirkley, 2019). Patient safety has also been recognized with this type of care provision in studies of nurses (Huibers et al., 2012). Safe decision-making in low urgency cases has been identified, together with high patient satisfaction with telephone triage services (Turner et al., 2015). Whilst there are many benefits of telephone triage, there are limitations that need to be considered.

1.2.2 Limitations of telephone triage

Equally, there are identified limitations to telephone triage. The telephone itself limits the interaction between caller and clinician to audio only and a lack of visual cues. The caller must be able to describe and communicate what is happening and the clinician needs to interpret this information and determine the appropriate level of response (McKinstry et al., 2010; Palma, Antonaci, Colì, & Cicolini, 2014). If the caller is not the direct recipient of care, for example the partner, this may restrict the information the clinician receives, the caller may not accurately relay information, or additional questioning needed to gather information may not be undertaken (Palma et al., 2014). Furthermore, a narrative literature review found that nurses view talking to a third party as an ethical dilemma when discussing another person's personal details with a caller whose identity they cannot verify (Kaminsky et al., 2017). A further concern is that rapport building can be constrained during telephone calls, which may also influence the amount of information shared by the caller (McKinstry et al., 2010). Safety of telephone triage has been established related to low urgency cases, however, safety decreases in high urgency cases (Turner et al., 2015). Errors in decision-making are attributed to incorrect or incomplete patient assessment (Palma et al., 2014; Turner et al., 2015). Currently the research on telephone triage has been conducted from different perspectives including the caller, the triageur, organisations adopting the service, and include topics such as

clinical outcomes, decision-making, safety and quality (Lake et al., 2017). Despite the limitations, telephone triage is used for assessing the needs of all types of callers. It is not limited to urgent healthcare needs and has been established as a midwifery practice in the maternity setting.

1.3 Maternity telephone triage

Whilst there are many depictions and definitions of telephone triage related to other areas of healthcare in the literature, there are limited descriptions of telephone triage in the maternity setting. Most literature on the topic is dated from the 1990's to early 2000's. Maternity telephone triage has been described as the process where a health care practitioner communicates with a woman via telephone, assesses her concerns, develops a working diagnosis, and determines a plan of management (DeVore, 1999). Devore (1999) further proposes that midwives perform a degree of triage whenever a woman telephones with a concern outside a scheduled visit. She also suggests that telephone triage is not new to midwifery and has long played a role in providing midwifery care. A goal of maternity telephone triage is not necessarily to diagnose. Conversely, it can be used to determine if the woman requires face-to-face assessment or referral to a more appropriate service (DeVore, 1999; Janssen et al., 2006; Kennedy, 2007). Unlike other areas of healthcare, telephone triage in the maternity setting in Australia occurs within individual health services rather than centralised call centres. Midwives themselves may not refer to these telephone consultations with women as triage by its purest definition. There is the question of whether the profession of midwifery views this practice as telephone triage or telephone consultation, a hybrid of the two, or something different again. There is limited primary research about midwives' practice of telephone triage across the full childbearing continuum, with research mainly focussed on early labour care.

A significant number of women in early labour use telephone triage to access midwifery advice and care (Cherry et al., 2009). There are many studies to support improved early labour care to prevent intervention and promote normality during labour and birth, as it is a concern of midwives that early admission to labour ward may result in higher rates of intervention (Davey, McLachlan, Forster, & Flood, 2013; Janssen et al., 2006; Spiby, Green, Richardson-Foster, & Hucknall, 2013; Weavers & Nash, 2012). Hence, telephone triage has been recorded as a commonly used strategy for improving early labour care by providing support to women at home, with the aim of reducing unnecessary admissions of women not in established labour (Janssen et al., 2006; Spiby et al., 2013). Women throughout pregnancy and the postnatal period also access telephone triage. A literature search discovered only one paper on maternity telephone triage that included reasons, other than early labour that women telephone the health service. These reasons were bleeding from the genital tract, nausea and vomiting, urinary tract symptoms, decreased foetal movement, preterm uterine activity, and rupture of membranes (Barnes & Dossey, 1999). More recent literature regarding development of obstetric triage decision support tools shows the inclusion of similar anticipated reasons for women calling telephone triage (Santos et al., 2015). Whilst the literature is mainly limited to studies of early labour care that include a component of telephone triage, some of these studies have specifically sought women's views of these services.

Women seeking midwifery care in early labour have been the focus of several studies. A Norwegian qualitative study explored nulliparous women's experiences of contact with midwives prior to admission in labour either in person or via the telephone (Eri, Blystad, Gjengedal, & Blaaka, 2010). Women in this study described needing to negotiate and answer set questions about their experiences of early labour rather than tell their own story, which they explained was demanding over the telephone. Further, Eri et al. (2010) suggest midwives need to use various ways to ask questions if they wish to gather all information from the

woman, and that standard questions may not meet women's needs. This is supported by a mixed methods study in Wales where women reported satisfaction when telephone advice was individualised and met their needs (Green, Spiby, Hucknall, & Richardson Foster, 2012). Further satisfaction was reported from women in this study when midwives were friendly and gave clear instructions. Whereas dissatisfaction was reported from women in this same study when they did not feel respected, the midwife's manner was poor, instructions were not clear, and the telephone call was reported as being short (Green et al., 2012). Canadian researchers compared telephone assessment and support with home visit assessment and support for early labour care in a randomised controlled trial (Janssen & Desmarais, 2013). Women's experiences of care in each arm of the study were gathered from questionnaires, with those receiving home support recording substantially more positive experiences compared to telephone assessment and support. Studies of women's experiences are important for understanding how midwives can better meet women's needs. This is important in any setting, however, would be beneficial in a setting such as Australia where the population is vastly spread geographically.

Maternity care in Australia is provided in metropolitan, regional, rural and remote area settings. Mapping of maternity services across these locations is shown in figure 1. However, in recent years the country has seen more than half of its small (<500 births) maternity units closed (Kildea, McGhie, Gao, Rumbold, & Rolfe, 2015). The rationale for these closures are unclear, with many reasons postulated such as rurality, lack of skilled staff, higher cost, and purported safety concerns (Kildea et al., 2015; Longman et al., 2014). The resultant impact has been twofold: a) cost to women travelling and being away from their families, and b) to residual health services, whose demand for services increased because of these closures (National Rural Health Alliance, 2012). The capability of Australia's health services varies by location. Large urban hospitals that have a higher number of births have a greater capability, whilst more remote services with lower birthing numbers have the capacity to care of low risk

women and their babies. Settings with low risk capabilities manage higher risk presentations with assessment, stabilisation and transfer (Longman et al., 2014). The closure of smaller rural health services, positions women in challenging circumstances as they may need to leave their usual place of residence for appropriate care. In view of these closures, benefits of telephone triage could include effectively directing women to appropriate healthcare, assisting health professionals to coordinate care between services, and ability to provide support to the woman to reduce anxiety (Kildea et al., 2015). The tyranny of distance poses a problem for some childbearing women in Australia, however, no studies to date have explored the impact of distance on women's use of telephone triage.

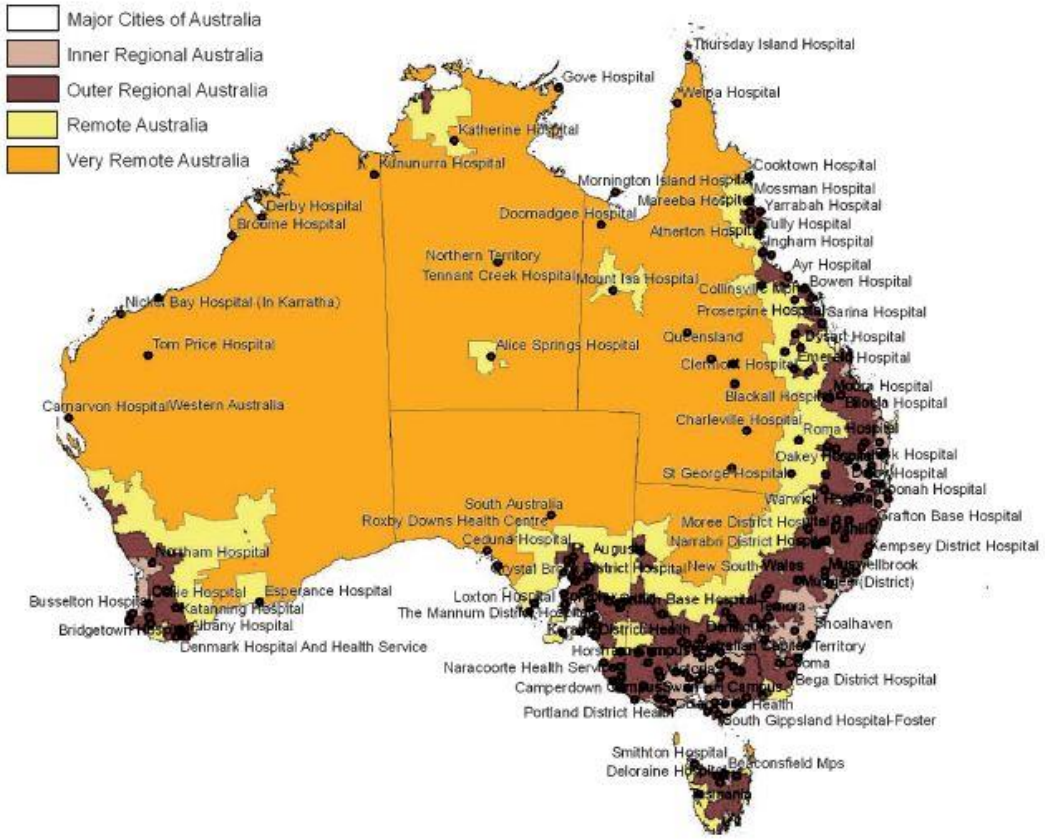

Figure 1: Map of Australian maternity service locations (Longman et al., 2014, p. 341)

The majority of previous studies in maternity care settings have included telephone triage as a component of the study rather than the primary focus, and have provided valuable

insights (Davey et al., 2013; Eri, Blystad, Gjengedal, & Blaaka, 2011; Janssen & Desmarais, 2013; Spiby et al., 2013). However, the studies are primarily limited to midwives' practice of telephone triage in relation to early labour care, rather than midwives' practices of telephone triage across the childbearing continuum, or studies of women's experiences of care. Most notably, there are gaps in the literature regarding; how midwives view this component of their practice, the contextual factors that may influence practice, individual experiences of telephone triage, common presentations, challenges faced, and strategies used to manage telephone triage. Maternity telephone triage has been established as a significant service for women accessing care, it is also important for the midwives providing the service.

1.3.1 Importance of telephone triage in maternity care

An understanding of how midwives accomplish telephone triage is particularly significant as miscommunication may result in untimely admissions of women to the health service, or inaccurate decisions made during triage (Huibers et al., 2011). It is undetermined whether there are specific skills required by midwives to perform accurate telephone triage. A study of nurses determined that the assumption of face-to-face assessment skills were transferrable to the telephone was not supported, and that training in specific telephone skills was needed (Purc-Stephenson & Thrasher, 2010). There are limitations to telephone triage such as no visual cues, distractions, missing vital information, fear of liability, and challenges to documenting calls (Manning, Magann, Rhoads, Ivey, & Williams, 2012). These limitations have been shown to be associated with increased cost to women and the health service if women are asked to attend the health service unnecessarily, dissatisfaction of callers and clinicians, and potentially raising maternal or perinatal risk (Huibers et al., 2011; Manning et al., 2012; Purc-Stephenson & Thrasher, 2010). The potential risks of telephone triage are important to understand in order for midwives to provide care that is appropriate and centred on the woman.

Most studies of triage undertaken to date have been conducted within the disciplines of nursing and medicine, in both emergency and primary healthcare. Few of these studies look specifically at telephone triage in maternity care settings or by midwives. To date there has been insufficient research that examines skills, processes, consumer satisfaction, professional views, and educational preparation of midwives for telephone triage (Bailey, Newton, & Hall, 2018). Exploring viewpoints and current practices of Australian midwives will provide a perspective that will inform the safety and quality of maternity care in Victoria. Further, an understanding of how midwives manage telephone triage will contribute new knowledge that can be used by educators and organisations to develop strategies that strengthen midwifery practice and enhance services for women.

1.4 The study plan

In order to generate this new knowledge for midwifery practice, the study plan outline is provided. This includes the research aim, research questions, scope and significance of the study to midwifery.

1.4.1 Study Rationale

Midwives are expected to be competent, possess sound clinical knowledge and skills and provide woman-centred care, even when that care is via the telephone. Midwives provide care to women using the telephone everyday as an integral component of their practice. Therefore, it is essential they have the necessary knowledge and skills to provide this service for women. If not performed well, telephone triage has the potential to affect maternal and infant outcomes, and not meet women's expectations of care. For the purposes of this doctoral study, this research project focussed on increasing knowledge of midwives' current practice of telephone triage. In particular, midwives' preparation for telephone triage, specific skills required, and identifying any variables that may influence practice.

1.4.2 Research Aim

The overall aim of this study was to explore registered midwives' practises of telephone triage across all practice settings in Victoria, Australia. For the purpose of this study, telephone triage is defined as *the process of screening and collecting information from a woman telephoning the maternity service to establish the urgency of assistance the caller requires, and to determine the most appropriate advice and management*.

1.4.3 Research Questions

The following research questions were used to achieve the aim:

1. Are midwives specifically prepared for telephone triage through education or training?
2. Are midwives confident in telephone triage?
3. What variables affect midwives' management of telephone triage?
4. What particular skills does the midwife use during telephone triage?

1.4.4 Scope of Study

The scope of this study was to investigate views, attitudes and perceptions of practising midwives regarding telephone triage management. This included all settings where midwives work and all telephone call types the midwife receives for any reason, rather than specific telephone call types, e.g. early labour calls.

1.5 Significance of the study

This study provides unique insight that advances knowledge in this field. It is the first study to explore midwives' practises of telephone triage using a mixed methods approach. Further, this study provides an improved understanding of telephone triage beneficial for informing future educational strategies and guidance for midwives and student midwives with the potential to improve maternity outcomes for women and their babies. Australia's population experiences a birth every 1 minute and 46 seconds (Australian Bureau of Statistics, 2019) and a birth rate that increased by 13% between the years 2015 and 2016 and is

sustained at this higher rate (Australian Bureau of Statistics, 2018). During the same period the midwifery workforce decreased by 5.1% (Australian Institute of Health and Welfare, 2018). In this challenging workforce environment midwives need to be supported to provide responsive care for women, and streamlined processes, including telephone triage in order to facilitate this care. The findings of this research are relevant to healthcare organisations, midwifery education providers and professional midwifery organisations to ensure midwives are adequately supported to provide telephone triage services. The findings will also support the safety of women and their babies who rely on health professionals who are sufficiently prepared and competent to provide care that is accurate, timely and responds to individual women's needs.

1.6 Impetus for the study

The motivation for this study came from personal experiences' of telephone triage as a midwife, and from observing over many years the individual way in which other midwives approach telephone calls from childbearing women. Interestingly, there appeared to be two extremes in practice, for example the midwife could appear to purposely discourage women from being admitted, whilst another will invite women into the health service regardless of the reason for the call. With these extremes at opposite ends creating a range between them, other midwives appeared to sit somewhere along this spectrum. I wondered whether my observations of practice were consistent with other midwives. I also admire the work individual midwives put into these telephone calls to support women, even when they are managing periods of high activity in the maternity setting.

During my career, I have held many roles. It was when I was a midwifery clinical educator that I experienced another view of telephone triage. When working with midwifery students or newly graduated midwives, I witnessed these many graduates and students, express unease at providing advice or care to women over the telephone. This same unease

was not as apparent or as frequently reported during direct clinical care of women. Looking for information to support these new midwives I discovered that the unique practice of telephone triage that midwives provide childbearing women is largely undocumented in the literature even though it is a long-standing practice.

1.7 Structure of the thesis

The thesis consists of six further chapters. Following on from this introductory chapter, Chapter 2 situates the current study in the literature that guided the inquiry. Presented as a published scoping review paper, a critical review of the literature outlines current knowledge on the topic of telephone triage and midwifery practice, gaps in this knowledge and propositions for areas requiring further research. Chapter 3 outlines the research design including philosophical foundations, and descriptions of procedures to collect, analyse and report data in this study. Chapters 4 and 5 present the findings from both phases of the study. Chapter 4 provides the quantitative findings from the cross-sectional survey of midwives included as a published paper, together with further findings of relevance. Chapter 5 contains the qualitative findings that emerged from interviews with midwives. Chapters 6 and 7 provides the discussion, recommendations for midwifery practice, limitations, and conclusions of the current study. Chapter 6 integrates the findings of both phases of the study and provides a discussion of key findings and concepts. From this, implications for midwifery practice and recommendations are drawn and presented in chapter 7, together with further research agendas.

1.8 Conclusion

This chapter has presented an introduction to the topic of telephone triage and midwifery. A background to the topic assisted in determining a rationale for the study, and significance to midwifery practice. The study's aim and questions were provided along with an outline of the thesis structure. The impetus behind the topic choice was identified through a

personal reflection of practice. The next chapter explores the research literature in respect to current understanding about midwives' telephone triage practice to determine any important knowledge deficits on the topic.

CHAPTER TWO – REVIEW OF THE LITERATURE

Chapter Two – Review of the literature

2.1 Introduction

This chapter provides a review and critique of the literature on telephone triage and midwifery practice. The purpose of the review was to both ascertain existing contributions on the topic, and to determine aspects requiring investigation. A publication entitled '*Telephone triage and midwifery: A scoping review*' is presented; this is the substantial literature review that identified gaps in understanding of the topic and informed methodological decisions. The scoping review method allowed incorporation of a variety of published papers reporting a broad range of evidence.

2.2 Published scoping review

Bailey, C., Newton, J., & Hall, H. (2018). Telephone triage and midwifery: A scoping review. Women and Birth, 31(5), 414-421. DOI: https://doi.org/10.1016/j.wombi.2017.12.002

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Telephone triage and midwifery: A scoping review

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ABSTRACT

Background: Midwives use telephone triage to provide advice and support to childbearing women, and to manage access to maternity services. Telephone triage practises are important in the provision of accurate, timely and appropriate health care. Despite this, there has been very little research investigating this area of midwifery practice.
Aim: To explore midwives and telephone triage practises; and to discuss the relevant findings for midwives managing telephone calls from women.
Methods: A five-stage process for conducting scoping reviews was employed. Searches of relevant databases as well as grey literature, and reference lists from included studies were carried out.
Findings: A total of 11 publications were included. Thematic analysis was used to identify key concepts. We grouped these key concepts into four emergent themes: purpose of telephone triage, expectations of the midwife, challenges of telephone triage, and achieving quality in telephone triage.
Discussion: Telephone triage from a midwifery perspective is a complex multi-faceted process influenced by many internal and external factors. Midwives face many challenges when balancing the needs of the woman, the health service, and their own workloads. Primary research in this area of practice is limited.
Conclusion: Further research to explore midwives' perceptions of their role, investigate processes and tools midwives use, evaluate training programs, and examine outcomes of women triaged is needed.

Statement of significance

Problem or issue

While there is a body of knowledge related to nursing practise and telephone triage, little is known about midwives' practises of telephone triage.

What is already known

Midwives use telephone triage to assess women's concerns and to determine if they need face-to-face assessment.

What this paper adds

This review identifies factors that positively and negatively influence midwives' practice of telephone triage, and subsequently highlights the need for further research into the most effective interventions to promote consistency and quality of midwives' telephone triage, including training programs, processes, clinical outcomes, and workload management.

1. Introduction

Triage was introduced into hospital settings during the 1950s and 1960s due to high patient volumes in emergency departments.[1] Triage is defined as the process to determine level of urgency and type of health care required.[2] It requires the caregiver to ask questions, assess urgency, and make clear decisions regarding appropriate advice and referral.[2] Recognised

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internationally as a means for managing access to health care, triage aims to reduce the demands on the health service.[3] Triage via the telephone has developed as access to telephones became prolific in households throughout the twentieth century.

In maternity care, the telephone is a means for a woman to establish contact with a health care provider. Bunn et al.[4] describe telephone triage as the process where a health care practitioner receives a telephone call, assesses the caller's concerns, and determines a plan of management. The goal of maternity telephone triage is not to diagnose, but to identify if the woman requires face-to-face assessment or referral to a more appropriate service.[5] Midwives perform a degree of triage whenever a woman telephones with a matter outside of a planned appointment. However, midwives themselves may not refer to this function as triage in its purest sense.

Whilst much has been written about triage in other disciplines such as nursing, predominantly in emergency departments[6,7] and primary care settings,[8,9] less is known about the practice of telephone triage by midwives. There are many factors to consider in relation to telephone triage, including whether there are specific skills or knowledge required; core competencies; transferrable in-person assessment skills; importance of consistency of advice; purpose of telephone triage in the maternity setting; clinical outcome measures; legal considerations; managing risk; if specific education or training is required; workload impacts; and relevance of experience[8,10–12].

Poor quality telephone consultations may lead to inappropriate admissions associated with increased health care or maternal costs, dissatisfaction from women, decreased job satisfaction for midwives, and raised maternal or perinatal risk.[2,5,8,13] Considering the importance of midwives' ability to perform telephone triage, this scoping review explores midwives current practice of telephone triage with the purpose of informing future research, midwifery education and the health care industry.

2. Methodology

A scoping review is '*a form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in the research related to a defined area or field by systematically searching, selecting, and synthesizing existing knowledge*'.[14, p. 1292] The opportunity to capture a wide range of study designs and as a technique to map the literature makes the scoping review suitable for exploration of midwifery and telephone triage. A preliminary review of the literature examining midwifery telephone triage indicated there was very limited primary research therefore the scoping review was considered ideal to establish the current understanding of the topic.

This review utilises the methodology for a scoping review as suggested by Arksey and O'Malley[15] and further developed by Levac et al.[16] There are four reasons for conducting a scoping review: (1) to examine the extent, range and nature of research activity, (2) to determine the value of undertaking a full systematic review, (3) to summarise and disseminate research findings, and (4) to identify research gaps in the existing literature.[15] The aim of this review was firstly, to examine the extent, range and nature of research activity; and secondly to identify research gaps in the existing literature.

The stages performed in this scoping review consisted of: (1) identifying the research question; (2) identifying relevant studies; (3) study selection; (4) charting the data; and (5) collating, summarizing and reporting the results.[15]

Stage 1: identifying the research question

This review specifically aimed to address the following questions: what is known about telephone triage and midwifery practice? What are the key recommendations of existing research investigating this topic?

The purpose of this scoping review was to identify and determine the nature and degree of literature on midwives' practice of telephone triage to inform future educational strategies and practice, and to identify any gaps in the literature to guide future research in this area.

Stage 2: identifying relevant studies

A three-step search strategy was utilised. The first step involved a limited search of CINAHL plus, Ovid MEDLINE, and Embase to allow analysis of the text words contained in the title and abstract, and of the index terms used to describe the article. The initial search terms entered were 'telephone triage', 'telephone triage AND midwifery', and 'midwifery telephone advice'. The second step involved using all identified keywords and index terms across all included databases. The following databases were searched CINAHL plus; Ovid MEDLINE; Cochrane; Embase; Scopus; Informit; TRIP; and grey literature. Search terms were refined depending on the database. Thirdly; the reference list of all identified reports and articles were searched for additional studies. The identified search terms and truncations were Telephone triage; midwifery telephone advice; telephone triage AND midwifery; telephone triage AND education/training/preparation; unscheduled consultations; pregnancy; labour; skills; competence. A spreadsheet designed specifically to track the search process included each database searched; search terms used and any modification to search terms; and duplicates tracked and removed.

Eligibility criteria comprised studies in which participants are midwives, student midwives or nurse-midwives working in health services providing antenatal, intrapartum and postnatal care, and studies that had a primary focus of midwives providing telephone triage. Telephone triage is a relatively new term in the midwifery setting, and as such, any article that included a study of midwives and telephone assessment, formal or informal triage, or telephone conversations or consultations whether scheduled or unscheduled were included. No limits were imposed on the date of publication to ensure as comprehensive a review as possible. The review covered dates up to and including June 2017. The review included local and International literature and was limited to publications in English. Studies investigating triage methods that did not utilise the telephone, which focused only on women's experiences of telephone triage, or the telephone used for interviews for data collection only were excluded from this review. Whilst women's experiences specifically were not a focus, some papers included in this review discuss this and are included.

Stage 3: study selection

The search identified 238 articles. After removal of duplicates and screening of titles for relevance 133 records remained. Further screening of title and abstract resulted in 23 records for full text review. Two reviewers (CB, JN) screened the title and abstract of all articles for inclusion criteria, developed initially as broadly as possible, and then refined through an iterative review process. Full text studies were retrieved and reviewed independently by two team members (CB, HH) based on eligibility criteria. Discussion between the two reviewers ensued until consensus reached; or the third reviewer's opinion sought. A further 12 records were removed at this point as they did not meet inclusion criteria, leaving 11 articles for the final review. Fig. 1 provides a flow chart of the literature search process.

Stage 4: charting the data

Data from the 11 papers were extracted to include key criteria such as study location, study population, purpose/aims of the study, methodology, and significant findings/recommendations (Table 1). Two authors independently recorded the information, and then compared the extracted data. The authors agreed on their findings. Consultation between the three researchers ensued until

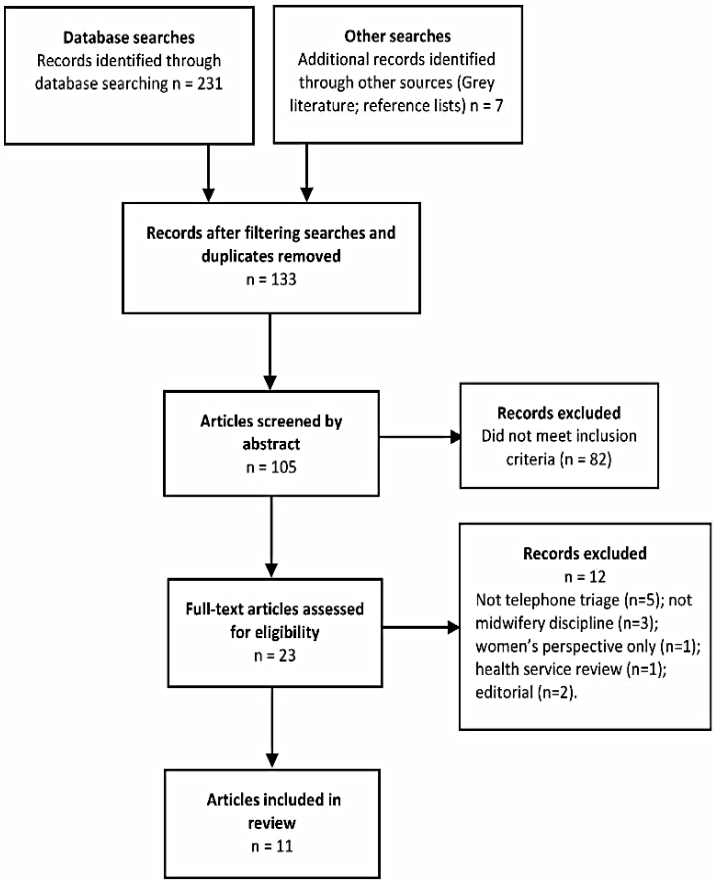

Fig. 1. Flowchart of literature search process.

all content were analysed and organised into key emergent themes.

Stage 5: collating, summarizing and reporting the results

Consistent with Levac et al.[16] we conducted a three-phase approach to collate, summarise and report results. Firstly, descriptive numerical analyses are provided that includes the number of articles, years of publication, and study types. Secondly, strengths and gaps in the literature identified through the thematic analyses of the included studies are reported. The final phase of this stage involved reviewing the implications of the findings in relation to future research, practice and policy.[16]

3. Findings

3.1. Descriptive summary and thematic analysis

The review revealed articles published between 1999 and 2014. Authorship of the papers is dominated by the United Kingdom (n = 8) then the United States (n = 3). The three US based publications occurred from 1999 to 2000, whilst all other publications were UK based from 2004 to 2014. No other countries were identified in the search on this topic in the discipline of midwifery. Four papers were quality improvement (QI) projects, four were discussion papers, two papers are clinical audits, and one study was qualitative.

All of the QI projects were conducted in the UK, between 2007 and 2013. Three involved the development of a type of discrete telephone triage and assessment area, to better manage demand and workload, avoid unnecessary travel and admissions for women, and improve the quality of the service for women.[17–19] The fourth QI project examined innovative ways to improve quality and consistency of care in telephone triage, with options implemented including training for registered and student midwives, development of a national telehealth document, and signposting for women on the appropriate caregiver to contact.[20] All four of the QI projects additionally used clinical audits either pre, post or pre and post implementing service changes.

The qualitative study was the only research study that specifically aimed to explore midwives' views of telephone conversations with women in early labour. The findings revealed that midwives balance gatekeeping labour ward with individual support for women, which is often in conflict.[21] Clinical audits were used to gather information on the volume, type, clinical content and presentation of telephone calls coming into triage, along with women's experiences and midwives workloads.[22,23] The audits identified the need for a local definition of purpose and function of telephone triage, the difficulties of triage, specific triage guidelines, training for midwives, improvements in documentation, and the legal responsibilities of midwives.[22,23] Three articles relate to US practices and were discussion papers on the topics of

Table 1
Literature included in scoping review.

Author, year, title	Setting	Purpose (aims of the study/paper)	Methodology	Key findings/highlights
Ament, L. (1999). Quality management activities in the obstetric triage setting.	US	To describe the functions of a quality management program in obstetric triage (includes telephone) and the relationship to risk management.	Discussion paper	• Common pitfalls of telephone triage discussed, such as failing to evaluate correctly the nature or urgency of the situation, failing to speak directly with the woman, and failing to document the call. • Quality improvement strategies to manage pitfalls, e.g. accurate documentation in the woman's health record.
Cherry, A. et al. (2009). Managing demand: telephone triage in acute maternity services.	UK	Development of a telephone triage service to manage demand and reduce unnecessary admissions to labour ward.	Quality improvement project	• Demand and patient flow better managed with the telephone triage service. • Detailed assessment provided during telephone triage reduced inappropriate admissions. • Greater opportunity for one-to-one care in labour and more support for junior midwives due to reduced labour ward workload. • Staff providing telephone triage service need to be of sufficient clinical experience to enable sound decision-making. • Educational programmes can enhance the safety of telephone triage.
Clarke, P. et al. (2012). Call the midwife: an audit of a telephone triage service.	UK	To audit telephone calls for both clinical content and quality of call. The objectives of the audit were to determine the amount of calls received, why, information obtained and given by midwives, and dialogue quality.	Clinical audit	• High level of ward activity not always conducive to woman-centred call management. • Calls often hurried and interrupted. • Women who were invited into the health service unnecessarily, had long waiting times and an increased likelihood of hospital admissions. • Inconsistency in care needs improving through clear clinical guidelines. • There is a need for guidance and specific training in telephone triage. • Documentation needs to be timely, accurate and in the woman's notes. • Women need to be involved in any service review.
DeVore, N.E. (1999). Telephone triage. A challenge for practicing midwives.	US	To discuss the problems encountered, knowledge and skills required, and legal issues faced by midwives when handing telephone calls from women.	Discussion paper	• Midwives need a solid knowledge base, be adept in communication, have resources available to manage the call, and document telephone contact thoroughly and accurately.
Finlay, D. and Brown, S. (2013). Maternity telehealth: ringing in the changes.	UK	To improve the quality and consistency of care given via the telephone.	Quality improvement project and evaluation	• The development of a national call structure increased effectiveness and efficiency, consistency, mitigating clinical risk and encourages good practice. • Training in telephone triage is required for both student and qualified midwives.
Kennedy, S. (2007). Telephone triage in maternity care.	UK	Development of a telephone triage service that aims to avoid unnecessary hospital admissions and travel for women, and to reduce telephone calls to ward areas.	Quality improvement project	• Reduction of face-to-face assessments achieved, resulting in a decrease in unnecessary travel for women, decreased cost to the service, and decrease in workload pressure on midwives. • Telephone calls to in-patient clinical areas decreased. • Experienced midwives found an increase in job satisfaction, particularly when using clinical judgement to make decisions and plan care with women. • Women had improved continuity of care, as the midwife on telephone was the admitting midwife.
Mahlmeister, L. and Van Mullem, C. (2000). The process of triage in perinatal settings: clinical and legal issues.	US	To discuss US specific legal requirements and their bearing on clinical management of perinatal triage (both in-person and via telephone).	Discussion paper	• Outlines the process and legal obligations of triage in any setting. • Core competencies, triage policies and protocols, training, and specific documentation are recommended for risk management and improve quality.
Nolan, S. et al (2007). Delivery suite assessment unit: auditing innovation in maternity triage.	UK	To audit a Delivery Suite Assessment Unit (DSAU) established to reduce labour ward admissions.	Clinical audit	• The audit demonstrates that the DSAU has decreased delivery suite workloads and increased user satisfaction. • Telephone triage is fraught with difficulties for the midwife. • Midwives require training to develop telephone triage skills.

Table 1 (*Continued*)

Author, year, title	Setting	Purpose (aims of the study/paper)	Methodology	Key findings/highlights
Spiby, H. et al. (2014). Midwives' beliefs and concerns about telephone conversations with women in early labour.	UK	To explore midwives concerns, experiences and perceptions of the purpose of telephone contacts with women in early labour.	Qualitative; interpretive phenomenology	• Midwives try to reconcile two conflicting priorities of responding to women's needs and protecting labour ward from inappropriate admissions. • Women and midwives may not have a shared view of the purpose of phone calls. • Early labour triage should be a discrete service staffed by midwives trained for the service, working separately to labour ward workloads.
Weavers, A. and Nash, K. (2012). Setting up a triage telephone line for women in early labour.	UK	To implement a dedicated telephone triage service for women in labour that provides consistent advice and enable women to feel confident coping at home in early labour.	Quality improvement project	• Women felt reassured and confident, they valued quality information from midwives, and the ability to speak with the same midwife. • Midwives perceived an improved labour ward workload due to reduced telephone calls and admissions. • Telephone triage requires a dedicated team of experienced midwives, and consistent use of a telephone proforma underpinned with quality standards of care.
Webb, S. (2004). Is there are role for triage in midwifery?	UK	To discuss the role of the midwife in maternity telephone triage.	Discussion paper	• Telephone triage for the midwife is both demanding and rewarding. • Telephone triage can reduce unnecessary attendance at hospital, low-risk women avoid receiving high-risk care, and women receive detailed individualised care. • The midwife requires excellent communication and midwifery skills, and needs the ability to prioritise and multi-task.

quality management of triage, challenges of telephone triage for the midwife, and clinical and legal issues related to triage.[24–26] The fourth discussion paper considered telephone triage in maternity services in the UK as a midwifery function rather than it being obstetrical nursing.[27]

3.2. Themes from the data

Extracted data from the articles in this review are organised into themes. These themes are: purpose of midwifery telephone triage, expectations of the midwife, challenges of telephone triage, and achieving quality in telephone triage.

3.3. Purpose of midwifery telephone triage

Papers were examined for examples of the purpose of telephone triage as described by midwives. All of the included articles had some discussion of the purpose of telephone triage or the changes to purpose if a dedicated service was being established or evaluated.[17–27] Most articles describe the purpose as a robust means for women to have 24-h access to maternity services where the midwife listens to the woman's story, an assessment is performed, advice given, resulting in the woman attending or not attending for in-person assessment. Further, the papers stated that diagnosis is not the aim but rather determining if a more comprehensive assessment is needed, and when or where this should take place.

The main aim as described by all papers is to avoid unnecessary hospital admission; to use experienced midwives; avoid unnecessary travel for women; reduce phone calls to ward areas; and decrease interruptions to midwives caring for women already admitted.[17–27] For those services with a dedicated telephone triage service the purpose included having a named midwife to take calls, manage admissions to labour ward, and provide continuity of care to women.[17–19,23] Many papers report telephone triage as a protective factor for both midwives and women. The protection occurs by filtering out those women not requiring immediate admission, thus protecting midwives' workloads (often described as gate keeping labour ward), and protecting women from unnecessary interventions if admitted in active rather than latent labour.[17,21–23] One paper described the purpose in further detail. The description includes telephone triage as being an integral role responsibility for midwives, with the process often informal and managed by busy labour ward midwives who answer calls in a random fashion, e.g. it is your turn to answer the call.[26] They further state that calls are often undocumented, with competence in telephone triage not evaluated, and many health services not having protocols to guide practice. It emerges from the literature that even though there is an agreed purpose, there may not be formal processes in place to support the practise.

3.4. Expectations of the midwife

The majority of included papers discuss the expected attributes of the midwife performing telephone triage. Two papers specifically discuss the need for an experienced midwife or expert as described by Benner[28] in her seminal work on skill acquisition from novice to expert. These papers state that for safe and effective telephone triage a high degree of clinical expertise and sound judgement is required.[23,26] Further proposed is for novices assigned the role of telephone triage to be mentored by skilled clinicians, as not all clinicians will be competent to perform the role of triage in labour and delivery for the first 18 months to 2 years of practice.[26] Additionally, nine papers identify the following attributes necessary for successful triage: being experienced, confident, excellent communication skills, a solid clinical knowledge base, good interpersonal and counselling skills, highly developed clinical decision-making skills, maintain confidentiality, and good telephone etiquette.[17,19,21–27] Two studies found that there is an absence of these skills in professional textbooks,

suggesting telephone triage skills are taken for granted and not taught formally. Moreover, midwifery students are seldom exposed to the safe and effective management of telephone calls.[22,25] With regard to skill development, it is suggested by six of the included papers that training or education specific to telephone triage should be available for midwives and student midwives.[17,20,22,23,25,26]

3.5. Challenges of telephone triage

There were many challenges of telephone triage for the midwife discussed in nine of the reviewed papers.[18,20–27] The challenges are numerous and varied and generally relate to workload and environment, experience, competing interests, disposition of the woman, limitations of the telephone, and processes or legal concerns.

The largest concern identified was workload. Implications include telephone triage increasing workloads, high levels of activity in the health service affecting midwives' ability to provide support to women on the telephone, and workload stresses influencing decisions made.[18,21,22,25–27] Midwives described the volume of calls interrupting clinical care as a key workload stressor, resulting in conflict for the midwife between the woman on the telephone and women in the midwives care.[22,23] This is explained as impacting the provision of one-to-one care for women in labour, midwives inviting women in unnecessarily which may further increase workload, documentation not completed, and suboptimal advice to women over the telephone.[22,23]

High levels of activity in the department affect telephone triage, as it is not conducive to providing personalised support for women on the telephone.[22] Calls are often hurried and interrupted in the context of a busy department that may result in decisions to invite the woman in for assessment which can lead to long waiting times, increasing the likelihood of admission and potential for unnecessary interventions and poor maternal experience.[22] The environment also featured as telephone calls are often taken in public spaces such as the midwives' station, may result in a sense of surveillance of the responses given to the woman and the time the call takes. This may exert pressure on the midwife to ask standard questions and give standard advice rather than address individual women's concerns.[21] Midwives in the study by Spiby et al.[21] stated that labour ward workloads should not take precedence over supporting women telephoning.

Workloads can also influence decisions made, as the needs of women telephoning have to be balanced with responsibilities of those women already admitted. Handled incorrectly calls can have a negative impact on midwives already busy workloads.[27] Regulating workload was important to midwives.[21,26,27] Busy midwives may be reluctant to resolve issues over the telephone. This may be due to a less experienced midwife taking the call, lack of experience in antenatal problems, medico-legal worries, lack of awareness of other resources available to women in the community, or the midwife may feel it is safer to invite women into the health service rather than make decisions under pressure.[18,27] Competing interests of being in-charge of the department, allocated direct patient care and being responsible for managing telephone triage as happens in many health services, was also cited as influencing decisions made.[26] The potential problem of competing interests, the organisations needs are prioritised over the woman's needs.[25] Telephone triage was also identified as an area of care that is not specifically funded.[22] The one study recommends that telephone triage requires additional resourcing, be acknowledged as an important component of service provision, and that it should be set up independently from labour ward, hence removing any influence from workload pressure.[21]

Limitations of the telephone also pose a challenge to the midwife and woman. Telephone assessment is limited to the one sense, hearing and further limited by the inability to see the woman.[22,25] The caller is often unknown to the midwife and the medical record may not be immediately available to the midwife.[24,25] History taking may be further complicated if the woman is frightened or anxious, English is not her primary language, or through a third party such as her partner.[22–25] Anxiety is described as affecting the woman's ability to either provide her history, or communicate important clinical data, which may result in inaccurate decisions, or incorrect evaluation of the nature or urgency of the situation.[23–25] Two papers address this challenge by stating that if the woman is anxious or distressed, the woman has called three times, or the midwife is not easily able to identify the problem then the woman should be seen in person.[21,25]

Legal issues are a featured challenge in three articles.[24–26] The absence of a systematic approach to telephone triage and advice is proposed as a problem that may lead to challenges to legal responsibility.[24] Issues that may arise are failure to identify the nature, urgency and acuity of the problem, failure to provide the most appropriate response, failure to determine the disposition of the caller, failure to speak directly to the woman, poor telephone procedures, poor documentation of the call, and breaches of confidentiality.[24–26] Recommendations to improve service provision include development of standardised documentation; training in processes, enhanced communication and decision-making; and development of a risk assessment tool to ensure consistency and to assist students and newly qualified midwives in developing triage skills.[20,22,23]

3.6. Achieving quality in telephone triage

Achieving quality was seen as important across all papers. There were various methods to achieve this including: training and education, specific policies or guidelines, documentation or tools for telephone triage, time to triage effectively, and environmental considerations. More than half of the papers (n=6) discuss the need for formal education or training in skills associated with telephone triage.[17,20,22,23,25,26] Following an audit and benchmarking exercise, Finlay and Brown[20] found that midwives managed approximately 250,000 telephone calls per year. However, midwives do not undertake any formal training in the handling of calls, which Finlay and Brown[20] propose could result in a lack of consistency and quality. Benefits of training included enhancing safety, furthering communication and decision-making skills, accurately determining acuity and disposition of the woman, improved documentation, and managing anxious callers.[17,22,25,26] In particular, communication was mentioned throughout all papers, with the need for midwives to be adept in a variety of communication techniques and have sophisticated communication abilities. However, in the only study that specifically asked midwives if they thought training in telephone triage necessary, midwives stated it was not, as midwives should know the skills already.[21] Midwives, in this study, thought training might lead to a tick-box approach, and suggested that an important factor to teach was nuances and how to pick these up on the telephone.[21]

Seven of the papers also discuss the need for appropriate documentation to support telephone triage.[19,20,22–24,26,27] This included tools such as purpose made proforma's, policies or guidelines, and that any documented call should be recorded in the woman's notes. In four papers, a proforma was developed to assist midwives with telephone triage.[19,20,26,27] The reasons described for developing the proforma were to: guide communication to capture all necessary information in a logical and useful manner, improve

consistency of care, mitigate clinical risk, encourage good practice, outline acceptable standards of care, improve decision-making, advice, and support to women over the telephone.[19,20,26,27] Clinical guidelines and policy strengthening were suggested strategies to minimise legal implications, and for managing the woman whose first language was not English.[22,26] The final component regarding documentation noted in three papers is the importance of recording discussions directly in the woman's health record rather than a shared telephone triage record book.[22–24]

Three papers specifically addressed environment as a major consideration to the quality of care provided via the telephone.[19,22,26] Reasons for a private area to be established include to maintain confidentiality, minimalise distractions, and to have women's records easily accessible via computer.[19,22,26] In addition to a private area, these papers and a further two discussed the need for the midwife to have adequate time to acquire the necessary information from the caller, complete a thorough assessment and enable sound decision-making.[18,19,22,25,26] Time allows the midwife to listen to the woman's words, tone of voice, rate of speech, pauses and breathing pattern, in order to compensate for the lack of other senses.[25]

4. Discussion

This scoping review identified 11 relevant publications spanning 15 years, involving work on the topic in the UK and US. This scoping review was conducted to examine what is known about telephone triage and midwifery practice, and the key recommendations of research into this midwifery practice. Findings suggest there are many positive aspects to having telephone triage available to childbearing women, both for the woman and the midwife. However, findings also reveal the many challenges faced by midwives to perform this function.

Across the two countries where work on telephone triage were undertaken, descriptions of the purpose of telephone triage are comparable. The purpose of telephone triage was agreed as a way of managing flow of women into the health service whilst providing support to women. However, the main aim identified by all papers of using an experienced midwife in this process was not fully explored and no definition of experience is given. There is also an expectation that the midwife will be confident, have excellent communication, interpersonal and counselling skills, be clinically knowledgeable, have highly developed decision-making skills, maintain confidentiality and have good telephone etiquette. In determining nurse preparedness for telephone triage, Varley et al.[9] found both training and experience as important factors. No comparative studies on the effectiveness of preparation or training for midwives to competently perform this role were identified in this review. This is concerning since the midwife is responsible for affording women the most appropriate care whilst managing finite health care resources.

The largest area discussed in the included papers were the many challenges the midwife faces in performing telephone triage. These include providing quality care, workload implications, environmental distractions, limitations of the telephone itself, and legal concerns. The challenge for telephone assessment includes overcoming lack of physical presence e.g. only having hearing to guide assessment, no visual cues available, and the woman is often unknown to the midwife. This is consistent with findings in the nursing literature, where reliance on tone of voice, breathing sounds, and background noise assisted to build a picture of the caller and situation.[8] Effective communication techniques were identified as important in this scoping review, with some papers suggesting that these need to be sophisticated and the midwife needs to be adept in a variety of techniques. This too is consistent with studies in nursing, particularly active listening and the development of new communication skills for the task.[6,8,29] It is suggested that to develop these skills, continuous training opportunities are required, whilst maintaining telephone triage skills and expertise requires continuous practice.[6] More than half of included articles in this scoping review discussed the need for training or education in telephone triage. This is consistent with a review of nurses and telephone triage, where it was found that specific training in telephone consultation, assessment and decision-making skills should be provided.[8] Kaakinen et al.,[6] who conducted an intervention study using training in telephone triage with nurses found that training improved both the quality of telephone triage, and nurses' knowledge, skills and attitudes.

Professional and workload implications challenge midwives during telephone triage. Tensions exist between providing care to women, gate keeping labour ward, and managing professional and legal obligations. This is consistent with findings from a literature review on nurses and telephone triage that found that nurses have a conflict of being a carer and gatekeeper to scarce healthcare services.[8] The impact of the working environment, which may be a public space, busy area with multiple distractions or a designated private area are identified as influencing telephone triage. This concern is also raised by nurses managing telephone triage, who identify that a proper space and sufficient time lead to higher quality telephone triage.[6,8] With these tensions, there is potential for inaccurate decisions being made that may result in increased midwife workloads, inappropriate use of resources, or negatively affecting the woman and her family. This emphasises that decision-making may be influenced by factors related to the midwife, the woman telephoning, or the health care organisation. Future research is necessary to explore these factors to determine how these tensions are managed and how best to resolve them.

Improving consistency in care and quality was found important in this review. Papers included suggest the use of improved documentation, standardised call structures, and using experienced midwives as solutions to improve consistency. Studies in the nursing discipline have found a need for improved documentation, and that there is a positive relationship between nurses years of experience and improved accuracy of telephone triage.[9] Additionally, lack of consistency during telephone triage is recognised as a challenge in nursing studies, and has been associated with clinician background and length of experience.[6,9] Further, Kaakinen et al.[6] found that there is no commonly accepted definition of quality for telephone triage. However, evaluation of telephone triage quality assists to advance this area of care. Research to appraise these strategies in terms of service improvement in midwives practice needs to be conducted. One area of telephone triage that we expected to see was the use of computer-assisted algorithms or other software to aid the process. This is well described in nursing and primary health care literature and a systematic review conducted by Bunn et al.[4] found all studies in their review of the nursing discipline used computer algorithms. No studies assessing the effect of midwives' telephone triage with or without computer assisted processes were found. It is not clear if midwives use computer software or their own clinical expertise to assist them with telephone triage, hence there is a need for research into the processes that midwives use to enhance quality and consistency.

5. Strengths and limitations

This topic area suited the scoping study methodology as there were limited experimental studies identified.[15] This review has allowed us to investigate what is currently known about midwives and telephone triage and what factors influence safe and effective practice. However, as with all reviews some limitations need to be acknowledged. Only English language papers were included that

may have resulted in relevant studies missed. A limitation that we anticipated was the volume of evidence that may not be conventional research based literature. No comparisons can be drawn from the included papers; however, consistent conclusions drawn from the authors have been presented. Of the included papers, only one had a rigorous research design with all other papers being QI projects, clinical audits, or discussion papers. These articles, however, are still useful in describing key factors in midwives' management of telephone triage, and indicates where future research is needed. Another limitation recognised is that the papers are predominantly from the UK and US, results may not be generalizable to other countries. The strength of this review is that it provides information about midwives practice of telephone triage, therefore filling a significant gap in the literature.

6. Conclusion

Telephone triage by midwives is a necessary component of maternity care, and midwives face similar challenges to other health professionals providing this service. The findings from this review establish that telephone triage from a midwifery perspective is a complex multi-faceted process influenced by many internal and external factors. There are important implications for midwives, women and health services if not performed effectively. Available research suggests that strong communication skills, a sound clinical knowledge base, and experience are necessary attributes of the midwife managing telephone triage. Education and training, standardised processes, and an environment that facilitates woman-centred care are suggested as methods to promote quality and consistency in service provision. Further research needs to investigate specific processes midwives use; evaluate education or training programs, risk management tools, and clinical outcomes of women triaged; and explore midwives' perceptions of their role.

Author agreement

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Ethical statement

Not applicable for a literature review.

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2.3 Key findings and implications

The findings from the literature review established that telephone triage from a midwifery perspective is a complex multi-faceted process influenced by internal and external factors. Education and training, standardised processes, and an environment that facilitates woman-centred care are suggested as methods to promote quality and consistency in service provision. Providing this service to women is an important role of the midwife. With an expectation for midwives to have many attributes, such as clinical expertise, sound judgement, excellent communication and counselling skills in addition to experience, it is important to have an understanding of how this is achieved. Numerous gaps in the current literature were identified and include: evaluation of education or training programs; how midwives develop the skills needed; whether there are specific processes to guide telephone triage; if clinical outcomes of women triaged are measured; or risk management tools utilised; and midwives' perceptions of their role.

2.4 Conclusion

Telephone triage is clearly a component of midwifery care. This scoping review has determined the purpose of midwifery telephone triage, revealed the expectations of the midwife, along with the challenges of telephone triage and how quality in telephone triage has been achieved to date. However, there is a lack of high-level research evidence supporting this practice, and midwives' roles and responsibilities are largely unclear. Subsequently, information that is not based on sound evidence but instead reliant on clinical improvement activities and discussion papers are currently used to inform telephone triage in midwifery practice. The following chapter describes the theoretical framework, and methodological approach used in this study.

CHAPTER THREE – METHODOLOGY

Chapter Three – Methodology

3.1 Introduction

Given the identified challenges in chapter 2 in relation to midwifery telephone triage and the dearth of empirical studies in this field this chapter outlines the research approach, theoretical framework and rationale for the study. The aim of the present study was to increase knowledge of midwives' practises of telephone triage in an Australian context. The theoretical framework that underpins and informs the researcher's view of the topic, and the rationale for choosing a mixed methods approach is detailed. An explanation of how the theoretical framework is linked to the phases of the study is offered. Further, a discussion of the philosophy underpinning mixed methods research, a description of the explanatory sequential design, the advantages and disadvantages of the design, and ethical considerations are specified. Next, the chapter reports on the research design approaches to recruitment, together with development of data collection tools, data analysis procedures, how data are integrated, and limitations of the study are provided.

3.2 Research approach

The research approach for this study required time to deliberate due to the many aspects to consider. Firstly, the topic itself previously had not received much attention, therefore generating numerous areas to explore. Additionally, there were many research question types driving the inquiry about telephone triage. These proposed questions include those that ask what, how, and why, representing both quantitative and qualitative aspects. This required particular attention to determine the best methodology that can address all of the research questions. Further, the philosophical position or worldview of the researcher needs to be established in order to demonstrate the epistemology, ontology and axiology that underpin the study.

The philosophical stance of the researcher is an important aspect of any study. It provides reviewers of the research with an understanding of how choices were made by the researcher, as personal contexts are an inescapable component of research (Plano Clark & Ivankova, 2016). Every researcher brings with them their own prior experiences and expertise related to the study topic. This influences how the study is shaped and the paradigm chosen for the study (LoBiondo-Wood & Haber, 2018). The research approach specified in the following sections includes a discussion of underlying philosophical assumptions, an overview of various methodologies, and rationale for the chosen approach.

3.2.1 Philosophical assumptions

There are several philosophical positions a researcher can take. These philosophies are distinguished by their underlying ontology or nature of reality, epistemology which are beliefs about how knowledge is gained, and axiology or values for learning about reality (Plano Clark & Ivankova, 2016). Three main philosophies (also referred to as worldviews or paradigms) positivism, constructivism, and pragmatism, are usually associated with quantitative, qualitative and mixed method research methodologies respectively (Liamputtong, 2017; Polit & Beck, 2017). An overview of each of these methodologies and allied philosophies provides an important beginning step in the process for deciding the most suitable for the present study.

The philosophical assumption of quantitative research is generally from a positivism perspective, where reality is viewed independently from our experiences of it and can therefore be measured objectively (Bryman, 2016; Liamputtong, 2017). Epistemology, relates to knowledge, how knowledge is obtained, and what is acceptable knowledge in a discipline (Liamputtong, 2017). From an epistemological position, positivism is based on the view that reality can be verified through experimentation, measurement or observation, and the researcher is independent from it (Liamputtong, 2017; Polit & Beck, 2017). The ontological

perspective of positivism is objective detachment in order to see what is real (Liamputtong, 2017). This perspective places the researcher at a distance observing and recording, generating and testing hypotheses. Quantitative research methodologies facilitate positivist standpoints by using specified actions that are controlled to gather empirical evidence that can be generalizable rather than being based on researcher beliefs, findings are based in reality (Polit & Beck, 2017). Criticism of positivism is that it is narrow in focus, inflexible and does not capture human experience in its full breadth (Polit & Beck, 2017). Positivism directly contrasts with the assumptions of constructivism.

Qualitative research is a research approach that aligns with a constructivism or interpretivism epistemology, where reality is socially constructed with multiple truths (Bryman, 2016; Liamputtong, 2017). Epistemologically, constructivism is concerned with representing multiple truths and individually constructed realities, that reality exists within a context, knowledge is constructed and a product of our own making, particularly when the distance is minimalised between researcher and those under inquiry (Liamputtong, 2017; Polit & Beck, 2017). The ontological viewpoint is rejection of being objectively detached, as researchers need to acknowledge their own beliefs, emotions and values if others experiences and realities are to be understood (Liamputtong, 2017). The advantage of constructivist studies are gathering of in-depth evidence from people with knowledge and real-life experiences of the phenomena of interest (Polit & Beck, 2017). Limitations of constructivism are associated with using humans as an instrument of research as they are fallible, small participant numbers are used, thus generalizability of findings are questioned (Polit & Beck, 2017). Whilst constructivism is at the opposing end of the continuum to positivism, between these sits a third paradigm titled pragmatism.

Mixed methods research is typically associated with the pragmatism paradigm that is based on both objective and subjective experiences of reality, and the joining of beliefs and

actions in a process of inquiry (Liamputtong, 2017; Morgan, 2014). Pragmatism represents a distinct set of philosophical principles where knowledge is constructed and based on reality of experiences (Tashakkori & Teddlie, 2016). Further, inquiry is viewed as occurring in research as it does in everyday life, where people test their beliefs and theories through experiences and experimenting (Hesse-Biber & Johnson, 2016; Liamputtong, 2017; Polit & Beck, 2017; Tashakkori & Teddlie, 2016). For pragmatists, epistemological issues are seen as a continuum rather than on two opposing poles of objectivity and subjectivity (Hesse-Biber & Johnson, 2016; Tashakkori & Teddlie, 2016). Morgan (2014) describes this as the pragmatist focussing on the approaches to inquiry and an emphasis on experience as the interaction of beliefs and actions to acquire knowledge. Pragmatists need to be inclusive that all types of knowledge assist the goal to understand a problem, and neither quantitative nor qualitative methodologies should be considered superior to the other in a mixed methods approach (Florczak, 2014). Further, pragmatists propose that the research question(s) should dictate the research design and methods (Creswell & Plano Clark, 2011; Morgan, 2014). Pragmatist researchers reject the notion that there should be a forced choice between the traditional modes of inquiry of positivism or constructivism (Polit & Beck, 2017). Pragmatism offers a third choice where ideas are gleaned from both traditional paradigms through interaction with the research question and real-world (Hesse-Biber & Johnson, 2016; Tashakkori & Teddlie, 2016). Having reviewed the three main research paradigms of positivism, constructivism and pragmatism, the decision for this study was to use a mixed methods research approach.

3.3 Mixed method research design

Examining how midwives manage telephone triage utilising both qualitative and quantitative approaches allows the construction of a more detailed understanding of the phenomena of interest. Therefore, mixed methods was an attractive option as it offers a more comprehensive analysis of the problem with multiple perspectives (Tashakkori & Teddlie, 2016). Often referred to as the third research paradigm (Johnson & Onwuegbuzie, 2004),

mixed methods provides the opportunity to use numbers (quantitative) and words (qualitative) as approaches to address the research problem (Creswell, 2015). The phases of research design allows mixing at one or several points in order to develop a deeper understanding and validation of the phenomena (Fetters, Curry, & Creswell, 2013). In a study where little has been documented on the topic, the use of only one data source would limit understanding of the topic, as a single set of results cannot be corroborated (Johnson & Onwuegbuzie, 2004). Credibility of research findings are also enhanced when convergence from various data sources occurs (Hesse-Biber & Johnson, 2016). The mixed methods approach has many advantages and purposes.

Mixed methods research has been an evolving paradigm since the late nineteenth century (Morgan, 2014). Defined as an approach to research where the researcher "combines elements of qualitative and quantitative research approaches for the broad purposes of breadth and depth of understanding and corroboration" (Johnson, Onwuegbuzie, & Turner, 2007, p. 123). Further, within a single study the researcher collects and analyses data, integrates findings and draws conclusions from both quantitative and qualitative methods (Tashakkori & Creswell, 2007). This second definition includes the important component of integration of both types of data that sets it apart from a 'multiple method' study that uses multiple methods to address the same question rather than multiple methods to answer different questions in the same study (Schneider, Whitehead, Lobiondo-Wood, & Haber, 2016). Additionally, the main attention of this research design are the research questions.

In mixed methods designs, the priority is given to the research question rather than the methods (Hesse-Biber & Johnson, 2016). Allowing the aim of the research study to determine the research design reinforces the importance of these questions and prevents researcher bias toward one method or another. This research approach provides a means to understanding the broader context of the problem and the ability to contextualise people's

experiences within one study (Hesse-Biber & Johnson, 2016). The rationale for mixing two types of data within one study is justified by the position that neither quantitative nor qualitative methods are adequate by themselves to capture the information required, and in combination, the strengths of each approach complement one another (Ivankova, Creswell, & Stick, 2006; Polit & Beck, 2017). This places the problem or phenomena of interest as the focus rather than the methods used, and enabling use of more than one method to understand a complex and poorly understood problem (Hesse-Biber & Johnson, 2016; Tashakkori & Teddlie, 2016). Pragmatism is not just about finding the appropriate methods to answer the research questions; rather the goal of pragmatism is resolution of a problem through all types of knowledge generation (Florczak, 2014). There are many mixed methods research designs that achieve these goals of pragmatism and these are further strengthened when a study is underpinned by a theoretical framework.

3.4 Theoretical framework

Philosophical assumptions are inclusive of the researchers personal context, background knowledge and theoretical models used (Plano Clark & Ivankova, 2016). Personal contexts shape research, as prior experiences and background knowledge and expertise of the researcher influences design decisions (Plano Clark & Ivankova, 2016). In particular, the researcher may have a specific theoretical model that informs their approach to the research topic. A theoretical model or framework guides the researcher on the structure of the research based on key concepts and their relationships within the theoretical model to the phenomena of interest (LoBiondo-Wood & Haber, 2018). The theoretical framework is a formal lens that the researcher views the topic under investigation, which can be implicit or explicit in the reporting of a study (Green, 2014; Tashakkori & Teddlie, 2016). Theoretical frameworks differ to the underpinning philosophy of the research methodology. The theoretical model may be used in one of three ways: (i) for use as an overarching position to approach the topic, (ii) to deductively test theory, or (iii) to inductively generate theory (Plano

Clark & Ivankova, 2016; Polit & Beck, 2017). The theoretical frameworks purpose in the present study was to provide an overarching position about midwifery practice. This study has used the *Midwifery Partnership Model* (Guilliland & Pairman, 1995) for inquiry of telephone triage and midwifery practice, to make connections between each phase of the study, and to assist to interpret and integrate findings from both phases. This particular model has components derived from both objective and subjective knowledge of midwifery, which reflects how knowledge is derived when using a mixed methods approach. The *Midwifery Partnership Model* is discussed in the next section to establish its importance for linking each phase, and to the interpretation and integration of findings of this study.

3.4.1 Midwifery Partnership Model

As acknowledged in the literature review chapter there is limited research about telephone triage, with theories and frameworks on the topic not identified. However, there are assumptions made about midwifery practises that can be borrowed and applied as a theoretical frame of reference to assist in understanding study outcomes (Schneider et al., 2016). The theoretical framework that underpinned this study is one of *Midwifery Partnership* (see figure 2) developed by Guilliland and Pairman (1995). As midwifery care is provided in a variety of settings and both in-person or from a distance, the integral principles of the partnership model reflect the many facets of this care.

The *Midwifery Partnership Model* first described by Guilliland and Pairman (1995) is offered as a framework that a midwife can work within to enable individualised woman-centred care, based on a continuity of caregiver foundation. This model proposes particular components that are essential to both the establishment and maintenance of a successful midwife-woman partnership. These components include equality and reciprocity, negotiation, trust and time, sharing power and responsibility, empowerment and emancipation, and professional friendship (Pairman, Tracy, Dahlen, & Dixon, 2019). The partnership model is one

of equal status between the woman and midwife. The International Confederation of Midwives (2017) include in their definition of a midwife that the "midwife works in partnership with women to give necessary support, care and advice during pregnancy, labour and the postpartum period" (p.1). Benefits of working in partnership for the woman include facilitated decision-making, confidence and a positive birth experience, whilst midwives benefit as it is motivating and a contributor to resilience and sustainability in the profession (Bradfield, Duggan, Hauck, & Kelly, 2018). This model has specific philosophical beliefs as a basis.

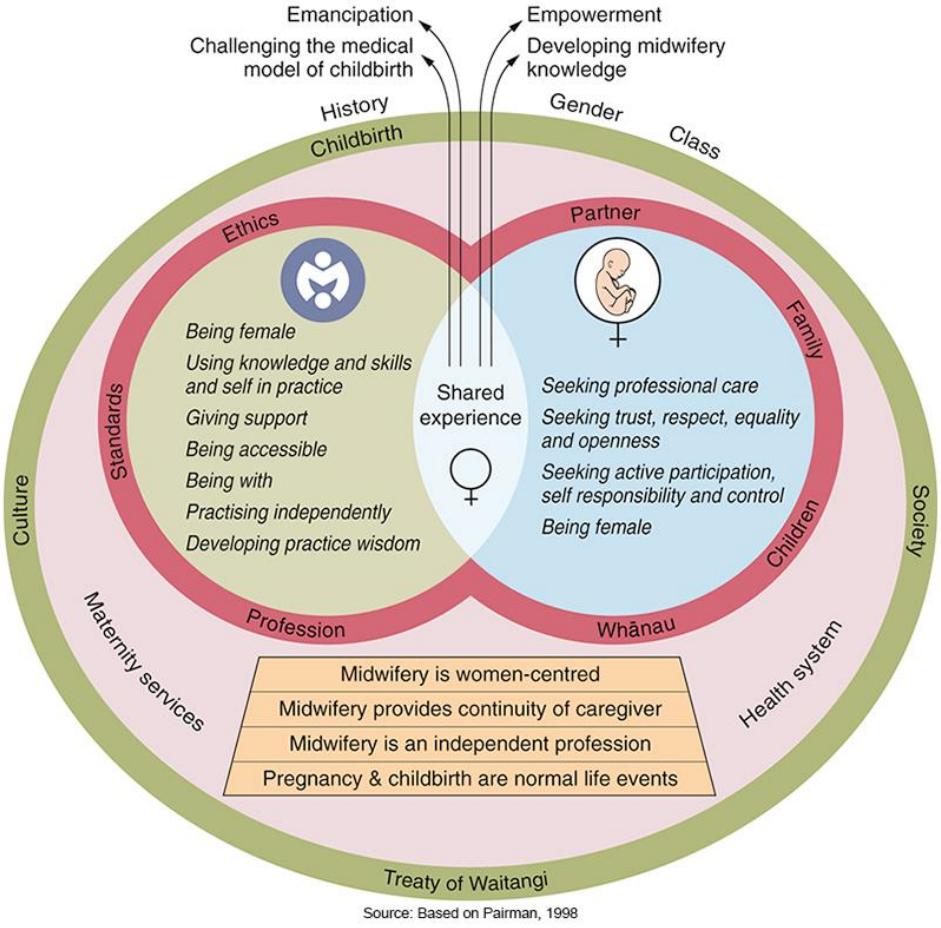

Figure 2: Midwifery Partnership Model. Pairman (1998) in (Pairman et al., 2019, p. 317).

Philosophical beliefs underpinning the partnership model are that pregnancy and childbirth are normal life events; a midwife's primary role is with woman experiencing a normal pregnancy, labour, birth, and postnatal period; the midwife provides the woman with

continuity of caregiver throughout her childbearing experience; and midwifery is woman-centred (Guilliland & Pairman, 1995). Within this partnership, woman-centredness refers to the woman defining her own needs, and the midwife works with the woman in whatever way the woman wants (Guilliland & Pairman, 1995; Pairman et al., 2019). A woman's satisfaction of care is often measured against the principles of woman-centredness (Lewis, Hauck, Ronchi, Crichton, & Waller, 2016). Leap (2009) advises that the concept of woman-centred care can be traced back to the 1960's and 1970's women's health movement. This was a time that women were seeking models of care that were grounded in feminist principles. These principles include choice and control, continuity from a known caregiver, inclusivity of the woman's family, and recognition that the woman is an expert in her own decisions (Leap, 2009). Guilliland and Pairman (1995) state that whilst the midwife's focus is on the woman, the woman is focussed on herself, her baby and her family, with the needs of the woman and baby viewed as an integrated whole. Further, woman-centred care is established on each woman's individual circumstances rather than the health professional or institutional practises, which in turn can facilitate the woman feeling empowered (Leap, 2009). A midwifery partnership approach is applicable in any context.

The concept of partnership is fundamental to the profession of midwifery and its professional and regulatory bodies in Australia. Within the Australian Midwife Standards for Practice (Nursing and Midwifery Board of Australia, 2018), midwifery care is based on a reciprocal partnership, with the woman's individual circumstances considered, and provision of woman-centred care should enable self-determination and empower the woman's choice. The *Midwifery Partnership Model* is usually between a woman and a midwife, however, it also serves as a model for partnership between midwives (Pairman et al., 2019). This is particularly useful considering the challenges within contemporary maternity care models that are often fragmented and biomedically driven (Brady, Lee, Gibbons, & Bogossian, 2019). Ways in which midwives can use the model interprofessionally is to support other midwives or maternity care

providers to maintain the key principles of the model, whilst also using these principles to advance the practice of midwifery.

It may be idealistic to strive for partnership amidst a landscape that has few midwifery-led models of care. However, there must be an ideal to work toward despite the environment of care. It is therefore important to determine if midwives are able to work in partnership with women during telephone triage, despite the setting or model of care. The *Midwifery Partnership Model* provides a framework and offers a means to make sense of and explain reality, and a way to think about practice (Pairman et al., 2019). Used as a theoretical framework in this study, the *Midwifery Partnership Model* facilitated navigation, assisted in the design, and provided a map to unite phases (Evans, Coon, & Ume, 2011). Having an explicit theoretical framework threaded throughout a study has been shown to strengthen integration of qualitative and quantitative data (Evans et al., 2011). The inherent principles of the *Midwifery Partnership Model* were subsequently used as a lens to view findings about midwives and telephone triage and integrate findings in the discussion presented later in this thesis. The specific design for this study and how the theoretical framework was used is now presented.

3.5 Mixed methods design decisions

There are numerous typologies of mixed methods designs (Leech & Onwuegbuzie, 2009). However, there are three basic designs: concurrent where both phases occur at the same time; explanatory sequential, where the quantitative phase is followed by a qualitative phase; and exploratory sequential, where a qualitative phase is followed by a quantitative phase (Creswell, 2015; Creswell & Plano Clark, 2011; Plano Clark & Ivankova, 2016). There are advantages and disadvantages to each of these designs. An overview of each design is provided, beginning with the concurrent design.

In the concurrent design both quantitative and qualitative phases are implemented concurrently and independently from one another, for the purpose of comparing and merging results (Plano Clark & Ivankova, 2016). Advantages of this design are substantiated and validated results, and data can be collected in a short timeframe reducing cost of the study (Creswell, 2015; Plano Clark & Ivankova, 2016). A disadvantage of the design is the need to concurrently implement both phases, which need skills in both research methods, is resource intensive, and this can be a challenge for a solo researcher (Plano Clark & Ivankova, 2016). Other than the concurrent design, there are sequential design options.

The explanatory sequential design has the quantitative phase first, which is followed by the qualitative phase with the purpose of using follow-up qualitative data to explain, elaborate or confirm the initial quantitative phase (Creswell, 2015; Plano Clark & Ivankova, 2016). Benefits of this design are the sequence that makes it easy to implement and straightforward for a single researcher, and it provides the possibility to explore unexpected quantitative results in the second phase (Creswell, 2015; Plano Clark & Ivankova, 2016). Challenges of the design lie in recontacting participants for follow-up, length of time to implement both phases, and determining which results from phase one should be followed up (Creswell, 2015; Plano Clark & Ivankova, 2016). Another sequential choice is the exploratory design.

The exploratory sequential design uses a qualitative phase to inform the development of a tool for the quantitative phase, whose results can test, generalise or confirm initial qualitative results (Plano Clark & Ivankova, 2016). Advantages to this design are the sequencing making it easy to implement by one researcher, and where exploration with a few individuals can be expanded to a larger population (Plano Clark & Ivankova, 2016). However, the process can be lengthier than other designs due to the need to convert qualitative results into variables for the experimental phase (Creswell, 2015). Following careful consideration,

the explanatory sequential design was deemed the most appropriate for this study to permit gathering of broad data followed by a phase to corroborate, explore and expand findings about midwives and telephone triage.

3.5.1 Explanatory sequential mixed methods design

A mixed methods sequential explanatory design can simply be described as a study beginning with a quantitative phase that is used to both collect and analyse data, and then to conduct a qualitative phase to explain the quantitative results (Creswell, 2015). In this design the two phases are 'mixed' in the intermediate stage, when the identification of the quantitative results that require further exploration are determined and used to construct questions to explore participants' views in more depth in the qualitative phase, and again mixed during the interpretation stage (Ivankova et al., 2006). Specifics of this design can be altered to suit the study, providing flexibility to address the research questions.

Not all sequential explanatory designs are the same. The design chosen in this study is classified as quantitative dominant as priority is given to the quantitative phase (Leech & Onwuegbuzie, 2009). Sequential explanatory designs are also classified as a partially mixed design as there are two points of integration. The first when determining what quantitative results requiring follow-up in the qualitative phase, and the second in the interpretation of findings phase where qualitative results are used to explain or expand the quantitative results rather than a fully mixed design where each phase is given equal status and mixed across four phases (Leech & Onwuegbuzie, 2009). Figure 2 provides a diagram of procedures used and the two points of integration are set apart through depiction with two large ovals rather than smaller squares representing the other procedures of the design. Having a well-planned design is one of its many strengths.

Further supporting the use of this design are its strengths. It is relatively straightforward compared to other mixed methods designs. It allowed the researcher to

explore quantitative data in more detail, which was useful for unexpected results, and the ease of describing and reporting the study due to the distinctive phases (Creswell, 2015; Creswell & Plano Clark, 2011; Ivankova et al., 2006; Tashakkori & Teddlie, 2016). Conversely, challenges of this research design are the lengthy amount of time to implement both phases, decisions needed concerning how participants are chosen and the questions for the second phase, and difficulty in explaining the second phase elements to internal review boards (Creswell, 2015; Creswell & Plano Clark, 2011; Ivankova et al., 2006; Tashakkori & Teddlie, 2016). To reduce the impact of these challenges, several strategies were implemented.

Strategies to address the concerns of participant selection for the second phase an explanation to the ethics approval committee was to include both phases within the one application to this committee. This allowed a full view of how the study was designed and would be implemented. Participants for phase two were drawn from the participant pool of phase one by self-selection rather than researcher selection. In order to overcome the challenge of time required for a sequential design, construction of a procedural diagram (Figure 3) representing the sequence of each phase, related procedures, and timeframes for the study were used (Creswell, 2015). The diagram illustrates the conceptualisation of the study and how key stages were planned and managed. This enabled the researcher to determine a timeline for each phase's completion and provided an overview of the project's entirety for the ethics committee.

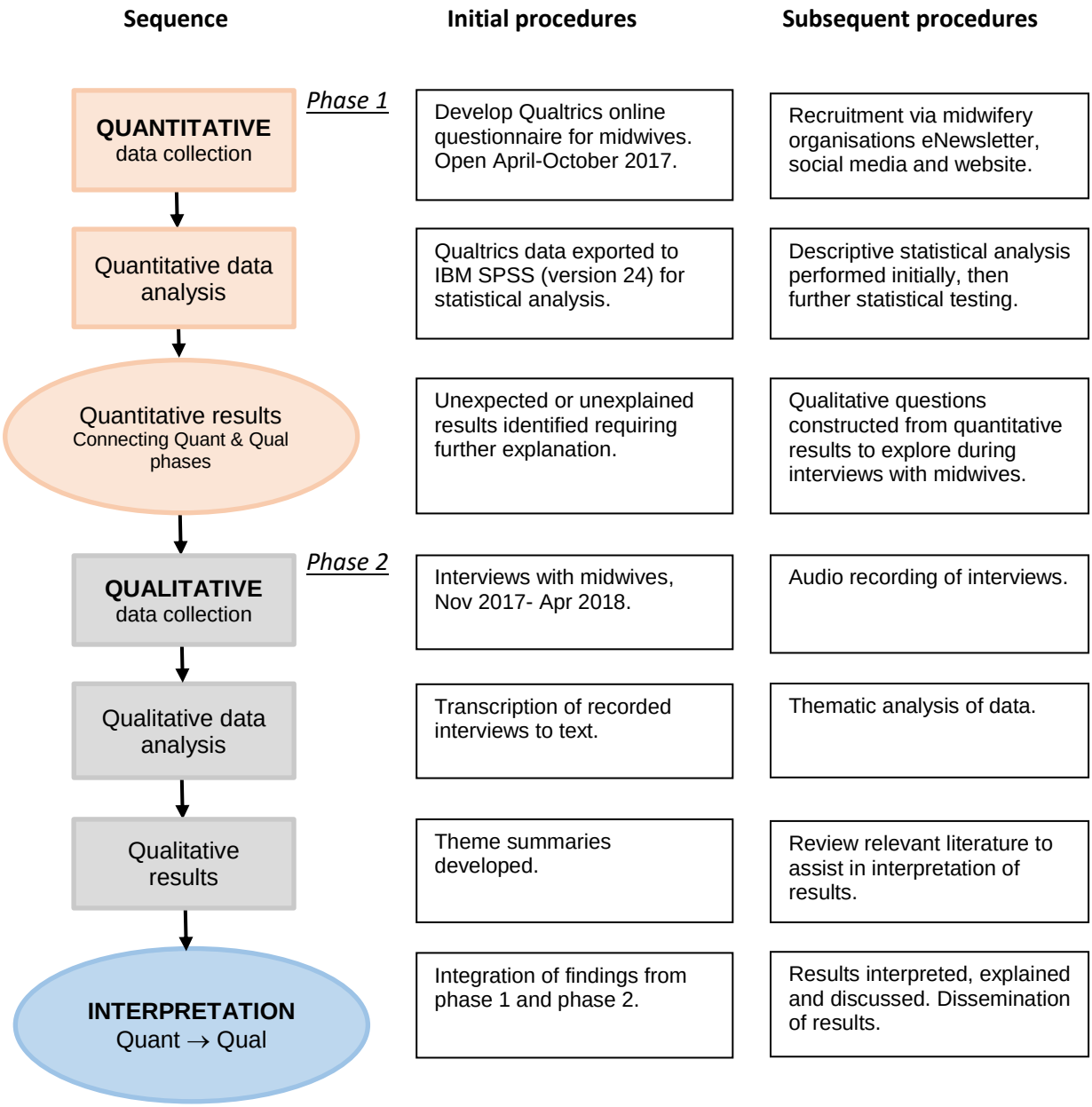

Figure 3: Sequential explanatory mixed methods design – diagram of procedures

3.6 Setting

The setting for this study was Victoria, Australia. Midwives work in a variety of practice settings including the public and private hospital sector, private midwifery practice, community health settings, and home visiting services located in metropolitan, regional and rural or remote areas. There are various models of maternity care including midwifery led, shared care and medically led. The maternity care workforce composition depends on the

level of health service. In low risk settings, women may receive care from midwives or general practitioners with specialist training in obstetrics. Whilst women and their babies requiring higher levels of care may have this provided by midwives, obstetricians, anaesthetists, paediatricians, or allied health (Safer Care Victoria, 2018). Both phases of the study were conducted in this setting. Detailed procedures are necessary for each phase of the study to be achieved and are outlined in the sections below.

3.7 Phase one - Quantitative

The first phase of this study was the quantitative phase. Details of participants, how they were recruited, questionnaire development, issues of quality, data collection, data analysis and limitations are discussed in the following sections.

3.7.1 Phase one - Participants

Currently practising registered midwives were invited to participate in this study. Purposive non-probabilistic sampling was used to select the population under investigation (Nardi, 2018). This sampling approach was used to involve individuals that are especially knowledgeable or experienced in the phenomena of interest (Creswell & Plano Clark, 2011). Midwives not currently practising where excluded from the study, as current practises were sought. An opt-out question at the beginning of the survey tool assisted to include midwives currently practising whilst excluding those who were not.

Midwives were recruited from membership of the Australian Nursing and Midwifery Federation (Victoria branch), and the Australian College of Midwives. The two professional organisations were chosen as midwives could belong to one or both professional groups and both organisations distribute regular electronic newsletters and social media alerts. Participation was voluntary and no incentives were offered. It is unknown how many midwives registered in Victoria are members of either professional organisation; however, this two-pronged approach was taken to reach as many midwives as possible. The sample size was

determined with a base population of 8528 midwives employed in Victoria (Australian Health Practitioner Regulation Agency, 2017), with a confidence level of 95% and confidence interval of 5, resulted in a target sample size of 368 participants. The two formula's used to calculate the sample size were:

1. Sample size calculation

Sample size = (Distribution of 50%) / ((Margin of error% / Confidence level Z score) squared)

Sample size = $(0.5 \times (1-0.5) / ((0.05 / 1.96)^2)$

$= 0.25 / ((0.02551)^2)$

$=0.25 / 0.00065077$

$= 384.16$

2. Finite Population Correction:

True sample = (Sample size x Population) / (Sample size + Population – 1)

True sample = (384.16 x 8528) / (384.16 + 8528 – 1)

= 3,276,116.48 / 8911.16

= 367.641977

Rounded to nearest whole number = 368

The finite population correction was used as the sample size exceeded 5% of the finite population (Daniel, 2012). This is an important adjustment as the population being sampled is finite and some members will not be part of the target population or meet eligibility criteria (Daniel, 2012). A statistician was consulted to ensure correct calculation of the sample size. The questionnaire used for phase one was specifically developed for this study.

3.7.2 Phase one - Questionnaire development

Despite an extensive review of the literature for a validated survey tool regarding telephone triage in the professions of midwifery, nursing, or other health disciplines, no tool was found. Therefore, a self-administered online survey tool was created for this phase of the study. The questionnaire was developed from identified themes from the literature and consultation among the research team who have expertise in midwifery. Construction of the survey tool took several iterations until the research team reached consensus. One researcher developed the questions and sequence of questioning, one researcher reviewed the questions, types, sequence, and relevance, with the third researcher editing and providing the final decision on areas of contention. The final survey tool (see Appendix 3) consisted of forty-nine questions including multiple-choice, scaled items on a five-point Likert scale, closed and partially closed questions, and open-ended questions. The final question in the survey tool was a free text box without any word count limitations. The inclusion of an opportunity for respondents to freely add their thoughts about telephone triage was deemed important for discovery of additional insights not previously captured by the other survey questions, or from the literature review. This open ended question format is useful when the goal is to collect detailed information and when questioning about a topic that little is known (Dillman, 2014). The questions were sequenced within three sections of the survey tool.

The first section of the survey tool sought participant demographics. Section two sought information on processes and preparation, whilst the third section sought information on participants' experiences and factors influencing telephone triage. The survey tool is summarised in Table 1, with the full survey in Appendix 3. There is a threat to internal validity with surveys, as respondents have a social desirability to respond with the perceived 'correct' or 'expected' answer (Wood & Ross-Kerr, 2011). By incorporating varied question types, the researcher is able to gather information about many variables, and have the ability to crosscheck these in order to provide more information about the phenomena of interest (De

Vaus, 2014; Dillman, 2014). These question types complied with principles of survey content design.

Table 1: Survey tool sections and included question types

Survey tool	
Section 1: Participant demographics	This section included questions such as: geographical location the midwife worked, the level of health care service, whether practising in a midwifery led model of care, age, years of midwifery experience, where initial qualification was gained, type of qualification, primary practice setting, amount of calls managed.
Section 2: Processes and preparation	This section sought information on preparation of the midwife for telephone triage, education or training, competence, supervision of novices, processes or tools in place to support the practice, documentation used, policies or guidelines available to the midwife, confidence and anxiety levels of midwives.
Section 3: Midwives' experiences and factors that affect practice	This section sought information on the midwives' own experiences of telephone triage, skills used, organisational factors e.g. workloads, environment calls are managed, competing interests.

The tool constructed was based on well documented principles of survey content design (De Vaus, 2014; Dillman, 2014). Question types were seeking to measure behaviour, beliefs, knowledge, attitudes, and attributes. Behaviour type questions established 'what people do'; whilst participants beliefs were established through questions that determined 'what people think is true' rather than on the accuracy of their beliefs (De Vaus, 2014). Knowledge type questions sought to discover the respondents' knowledge of particular facts in order to establish accuracy, whilst attitude type questions helped to establish what the respondent 'thinks is desirable' (De Vaus, 2014). The final category were attribute based questions designed to obtain information about the respondents characteristics such as demographics or years of experience (De Vaus, 2014; Dillman, 2014). As previously identified midwives in Victoria may not use the term telephone triage regarding managing telephone calls from women. Therefore, it was considered important to include a definition of telephone triage at the beginning of the survey to indicate what the topic encompassed, and to encourage midwives to participate in the survey. The included telephone triage definition was: '*The process of screening and collecting information from a woman telephoning the maternity*

service to establish the urgency of assistance the caller requires, and to determine the most appropriate advice and management'. In order to reach as many midwives as possible across the state of Victoria, an online format for the survey data collection was used.

An online data collection platform, Qualtrics® (https://www.qualtrics.com/) was used to host the survey tool which allowed dissemination via multiple formats including personal computers, mobile devices, and tablets. The decision to use this online software over other software (e.g. SurveyMonkey) was that it is held on the university's server rather than on a free online survey internet site, making it secure against potential access from others outside of the researchers (Jirojwong, Johnson, & Welch, 2014). This would contravene ethics in the areas of anonymity, confidentiality, and security of the data collected. Other factors considered for the choice of online format is that there are various layouts for survey questions available. These include drop down menus, check boxes and radio buttons, skip question functions, and visualisation of completion time of the survey (Jirojwong et al., 2014; Nardi, 2018). Online surveys are also low-cost to distribute compared to both telephone and paper-based surveys. The time lag between administering the survey tool and receiving responses may be shorter and web based surveys have the added benefit that data is coded automatically (De Vaus, 2014). Data from Qualtrics are able to be exported directly to the statistical analysis software (e.g. IBM SPSS®), with decreased likelihood of errors in data entry (Nardi, 2018). These exporting abilities of the online survey platform assisted to ensure validity and reliability.

It was important in developing a new data collection tool to ensure validity and reliability. Content validity of the tool was assessed by a panel of ten midwives with clinical and/or research expertise. The panel evaluated the individual questions as well as the survey tool overall, using a four-point Likert scale measuring questions from not relevant to highly relevant. Each panel member's responses were evaluated to establish the extent of content

validity for each item and overall (Ayre & Scally, 2014; Polit, Beck, & Owen, 2007). Responses to the first round of review revealed that two questions were rated not relevant by most panel members (*n* = 8) and were consequently removed from the survey tool, whilst one other question needed re-wording. Following these amendments, the panel evaluated the revised tool, resulting in no further amendment and full agreement on face validity. This permitted calculation of both individual items and the scales content validity index (Polit et al., 2007). The content validity index (I-CVI) score for individual items was 0.80-1.0, exceeding the recommended ≥0.78 (Polit et al., 2007). Calculation of the Scale-level mean Item Content Validity Index (S-CVI/Ave) was 0.94, above the recommended 0.90 (Ayre and Scally, 2014, Polit et al., 2007). Following these processes, the tool was then piloted through the web-based platform Qualtrics.

The tool was pilot tested with a small sample of currently practising midwives (*n* = 15). The pilot test was particularly important for both the tool itself and the online format. Notwithstanding the need to test if questions were working as intended, the survey tool being web-based was checked in regard to access from multiple platforms, time to complete the survey tool, movement through the survey (forward and back) and skip instructions, were also important to assess (Dillman, Smyth, & Christian, 2009). Reliability of the survey scales related to confidence (12 items) was measured using Cronbach alpha (De Vaus, 2014). The Cronbach alpha for these scales was 0.942, which demonstrates good reliability (De Vaus, 2014). Consultation with a statistician both pre and post pilot testing allowed for improvements to question formatting. This was to ensure that the variables anticipated to need comparing could be calculated by having the correct question types. This led to alterations to some questions, for example two that originally gave an option of 'tick all that apply' were deemed unnecessary and changed to radio buttons that result in choosing the single most appropriate option. Questions that required more than one choice were maintained. A summary of the

processes for the questionnaire development is provided in figure 4. These procedures are necessary to ensure a sound tool for data collection.

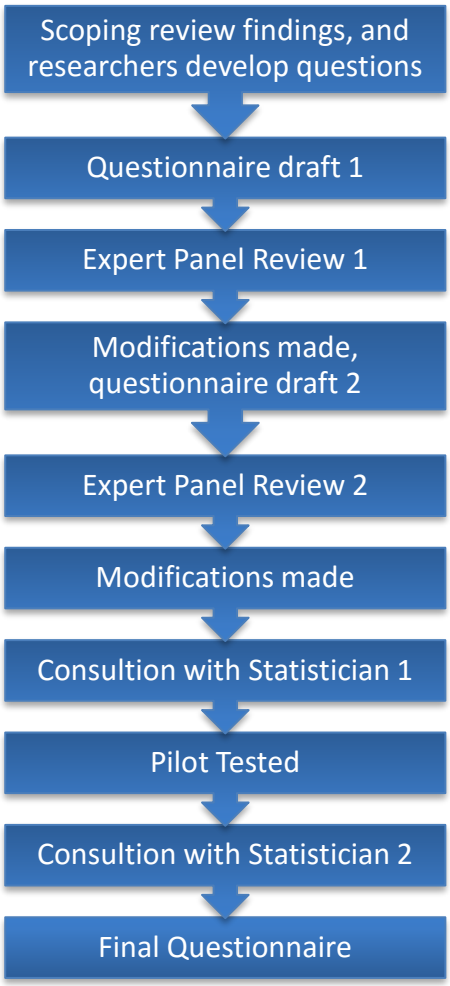

Figure 4: Stages of questionnaire development

3.7.3 Phase one - Data collection

An explanatory statement introduced the survey, which informed prospective respondents about what to expect, and potential risks and benefits of participation. Data collection occurred from April to September 2017, with reminders sent throughout this period. Consent to participate was implied by completion of the survey tool, and all responses were anonymous. Participants had discretion over what they answered, as survey questions were not compulsory. Once questions were answered and submitted, it was not possible for

participants to retract or retrieve responses. Following conclusion of data collection, analysis of data using statistical processes commenced.

3.7.4 Phase one - Data analysis

Using IBM SPSS Statistics for Windows, version 24 (IBM Corporation, 2016) data were analysed. Initially data were summarised using descriptive statistics. For this sample of midwives, the distribution for years of experience was unimodal and skewed to the right, and for age the distribution was asymmetric bimodal (Welkowitz, Cohen, Lea, & Welkowitz, 2011). As this was not a normal distribution, which is a requirement for parametric statistical tests, non-parametric statistical tests were used instead (Albers, 2017; Welkowitz et al., 2011). To explore relationships and comparisons among variables, the Chi-square, Mann-Whitney U and Kruskal-Wallis H tests were used. The survey analysis consisted of reporting the demographic characteristics of respondents, and calculation of the mean and total scores for each item. The free text item was analysed separately using content analysis.

The responses to the free text question were analysed using content analysis procedures. Content analysis is an approach used to condense word responses from text into smaller content categories (Polit & Beck, 2017). It is often a generalised term to include many strategies to analyse text (Vaismoradi, Turunen, & Bondas, 2013). There are various strategies that can be used to analyse text, however, the intent is to categorise a large amount of information in order to describe what has been communicated in responses (Richardson-Tench, Nicholson, Taylor, Kermode, & Roberts, 2018). The steps taken in content analysis are to decide trends and patterns, the frequency of these, and relationships between trends so that representation of data can be provided through categories developed (Vaismoradi et al., 2013). Following analysis of data in this phase, questions were generated for phase two. This is where the partnership model was referred to and elements discovered in survey responses that required further exploration.

3.8 Phase two - Qualitative

The second phase of the study was the qualitative phase. The participants, interview questions, quality issues, data collection, data analysis, and limitations of this phase are detailed in the following sections.

3.8.1 Phase two - Participants

Participants in phase two were a purposively recruited group of currently practising midwives who had self-selected from the invitation included at the completion of the survey. From this invitation, nineteen midwives initially indicated interest to participate in interviews. Purposive sampling is the conscious selection of individuals who have the information that researchers can learn expansively about the phenomena of interest (Liamputtong, 2017). In this case, the researcher required midwives working in a variety of clinical settings in order to explore the phenomenon of interest in different contexts. Midwives were interviewed individually using a semi-structured interview schedule.

3.8.2 Phase two - Interviews

The use of in-depth interviews has been a well-established method of data collection for qualitative research (Liamputtong, 2017; Patten, 2018; Schneider et al., 2016). Interviews permit conversations between people to gain knowledge of that person's views, experiences and feelings about a specific area of inquiry. There needs to be a specific purpose to the interview for it to be deemed research (Liamputtong, 2017). Interviews can be structured, where a list of questions in a set order are used; semi-structured where an interview guide provides questions for discussion, but also allows freedom to ask further or follow-up questions; or unstructured, where no set questions, rather a broad question to initiate free conversation from the participant (Schneider et al., 2016). In this study, semi-structured interviews were used for data collection due to their many advantages.

As the quantitative phase provided some objective knowledge, the use of a detailed interview guide gathered subjective knowledge through semi-structured interviews (McIntosh & Morse, 2015). This semi-structure promotes consistency between interviews as participants are all asked the same core questions in the same order, with participants free to reply how they wish, whilst responding to the researcher as they probe further (McIntosh & Morse, 2015; Schneider et al., 2016). Semi-structured interviews are the most frequently used qualitative method included in mixed methods research, and are useful for obtaining subjective responses and test assumptions or a theoretical framework (McIntosh & Morse, 2015). In this study, qualitative data was used to explore participants' experiences and reported behaviours in relation to the *Midwifery Partnership Model*. The data obtained can be used to confirm, refute, or expand limited knowledge of an experience. Benefits of interviewing are an opportunity to enter the world of the participant, trust and rapport can be developed, issues can be clarified, unique data from each participant is obtained, whilst emotive issues arising can be addressed directly by the researcher and support or referral for counselling offered (Schneider et al., 2016). As participants were recruited from phase one, they had an interest in the topic and were keen to share their experiences and views.

Questions for the one-to-one interviews were generated from findings of the quantitative phase (see Appendix 6). The questions explored areas of telephone triage practice that were unclear from phase one, or that the researchers determined a need for further explanation. Analysis of the survey findings indicated respondents had experienced anxiety related to telephone triage. The degree of anxiety was captured in the survey; however, causes of the anxiety were not elicited. An understanding of the causes of anxiety was deemed important to follow up in interviews. Further, the skills midwives used was partially determined by survey responses, with these questions based on previous studies. A deeper understanding of skills midwives used and which skills they place importance on was sought. In addition, the survey did not allow an opportunity to discover how telephone triage

competence was achieved. Therefore, individual experiences of this process were sought through reflections on practice during the interviews. Further questions were generated about how novices are supported to develop skills and competence. The survey findings also revealed inconsistencies in processes and documentation of telephone triage calls, and captured that environments where calls are taken are largely unsuitable, hence both were explored during interviews. For interviews to be reliable and valid sources of data, issues of quality need to be addressed.

The criteria for quality in qualitative research, or rigour has been described by the term trustworthiness (Liamputtong, 2017). Research is viewed to be trustworthy if accurate reflection of participants' views about the phenomena are reported (Liamputtong, 2017). This is not as simple as it sounds, with multiple criteria used to evaluate trustworthiness. The criteria first described by Lincoln and Guba (1985) included credibility, transferability, dependability, and confirmability. Credibility refers to how recognisable the experiences of participants are to others who share the same experiences (Thomas & Magilvy, 2011), and confidence in the truth and interpretations of the data (Polit & Beck, 2017). Transferability refers to how applicable findings are in other similar contexts, with research consumers determining the potentiality that findings are applicable (Polit & Beck, 2017; Thomas & Magilvy, 2011). Dependability occurs when research is able to be replicated by another researcher through an audit trail (Thomas & Magilvy, 2011), and findings being stable if the study were replicated with similar participants in a similar context (Polit & Beck, 2017). The final criteria, confirmability is achieved when credibility, dependability and transferability are established (Thomas & Magilvy, 2011), and the data represents information provided by participants and reflect their voices (Polit & Beck, 2017). This can be established by including verbatim examples of the participants' words in reporting of data. Other approaches to achieve rigour, including reflexivity, were employed in this study.

A major strategy for establishing trustworthiness is transparency about the researcher's position, assumptions or potential biases (Reid, Brown, Smith, Cope, & Jamieson, 2018). Through reflexivity, the researcher can make explicit any factors that could potentially influence the generation of knowledge through qualitative research, and use these as continual points of self-evaluation to monitor the impact of beliefs or biases (Berger, 2015). This was particularly important for this study, as the researcher is a midwife. This provides an insider's view of the phenomena that has some advantages, such as a working knowledge, or shared professional language, however, it must be acknowledged that this may present unconscious biases or assumptions of the phenomena under investigation (Berger, 2015). The researcher needs to be aware of their own reactions and make a deliberate effort to maintain an awareness of self during all aspects of a study, in order to understand what hinders or assists making meaning of data and creating knowledge (Berger, 2015). There are many strategies to maintain reflexivity.

For this study, several strategies were used to achieve rigour. Firstly, as a novice researcher my two research supervisors provided peer review of the analysis process and opportunity to discuss coding and theme development (Thomas & Magilvy, 2011). The use of semi-structured interviews kept the interviews standardised through the question stem format, and allowed a base level of coding to be established (Morse, 2015). This had the additional function of ensuring the researcher, through reflection, was including questions that personally could be shied away from or emphasised (Berger, 2015). The researcher spent considerable time with the transcripts, reviewed recordings, looked for similarities across participants, provided detailed descriptions of the population, geographic location, and demographics of participants, and used participants own words in reporting findings (Thomas & Magilvy, 2011). A decision trail was kept for the entire process, this included decisions made about sampling, data collection process, data analysis, interpretation and reporting (Thomas & Magilvy, 2011). Field notes and memos were also kept about personal feelings, thoughts and

reflections, whilst making an effort to follow participants during interviews by seeking clarification rather than assuming meaning (Thomas & Magilvy, 2011). Interviews, although having some challenges, were appropriate for the purpose of data collection.

3.8.3 Phase two - Data collection

Midwives self-selecting from the survey to participate in interviews were sent an explanatory statement and consent form via email. A time and location convenient to the participant was arranged for the interview. Prior to interviews commencing, an outline of the purpose of the study, and how data were being used was provided. This was followed with confirmation from the participant that the explanatory statement was understood, and consent given for the interview and follow up contact if required for clarification of data. Data collection occurred from November 2017 to April 2018. Interviews were transcribed verbatim and any identifying data removed. To ensure anonymity, pseudonyms were assigned to participants for data reporting. Participants were informed that they could withdraw from the study at any point in time. As data were being collected, thematic analysis processes commenced.

3.8.4 Phase two - Data analysis

The framework developed by Braun and Clarke (2006) guided thematic analysis of the one-to-one interviews with midwives. Table 2 represents the phases of data analysis. Recordings of interviews were transcribed in small batches to allow familiarisation with data, checking the interview question schedule were consistently applied, and reviewing recordings against transcripts to verify accuracy and amend transcription errors. This was particularly important as the profession of midwifery like many other professions have their own abbreviations and acronyms, for example ‘mec liq’ to describe meconium liquor, or ‘SROM’ for spontaneous rupture of membranes. These types of words were indicated on the transcripts as ‘inaudible’ or a similar sounding word with a time stamp to indicate the recording and word

or phrase that needed to be checked. Initial codes were generated from the data, with some revision as necessary to include additional discoveries. The collation of these codes into themes were induced from participants' own words. Themes were reviewed to ensure they were representative of the data. A detailed discussion of the four themes and their subthemes are included in chapter five. In the reporting of these themes, all names used are pseudonyms. The qualitative phase of the study was important to gather midwives' views and experiences of telephone triage. After both phases of the study were complete, findings were generated from the integration of data analyses and interpretation.

Table 2: Phases of thematic analysis (Braun & Clarke, 2006, p. 87).

	Phases	Description of the process
1	Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2	Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3	Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4	Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5	Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6	Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

3.9 Integration

Integration of data and analyses are necessary for achieving a study's goals, and generating findings that are larger than the sum of the study's parts (Tashakkori & Teddlie, 2016). It has also been found to noticeably enhance the value of mixed methods research (Creswell & Plano Clark, 2011). There are multiple points of integration that can occur at the

design, methods, and interpretation or reporting levels (Fetters et al., 2013). Examples from each of these levels as they applied to this study are as follows. During the *design level*, the sequential design had one phase of methods build upon the other and designed to have between phase integration where findings from phase one informed phase two. At the *methods level,* integration occurred during sampling, where interview participants were obtained through survey respondents in the earlier phase, and questions for interviews based on findings of the first phase. And at the *interpretation and reporting level*, where results from each phase are reported separately, but overall study findings are generated and reported in a single account (Fetters et al., 2013). Figure 3 illustrates these points of integration, where the schema on the left shows integration depicted by an oval shape, rather than the independent procedures shown in a rectangle. Each of these levels need to seamlessly link the phases of the study.

To be able to integrate requires the researcher to compare and contrast or link the two phases of the study (Tashakkori & Teddlie, 2016). The qualitative data were used to check aspects of the quantitative data and assisted in revealing conditions under which the phenomena occurred. This enabled identification of inconsistencies or alternative explanations for the phenomena (Fetters et al., 2013; Tashakkori & Teddlie, 2016). Both data types were used to authenticate the other, and similar conclusions provided enhanced credibility of findings, whilst also expanding insights about telephone triage as the qualitative findings addressed different aspects of the topic thus complementing the quantitative findings (Fetters et al., 2013). Interpretation and reporting of both data sets is achieved by using narrative in a weaving approach, where findings are discussed on a concept by concept basis (Fetters et al., 2013). Findings were able to be related to the partnership model through inferences, consistencies and inconsistencies to determine applicability to midwifery practice. For example, for some midwives, the physical environment where telephone triage takes place limits their capacity in being fully accessible to the woman. Further, a midwife's own sense of

risk may inhibit information sharing thus reducing the woman's ability to be an active participant in care, or having self-responsibility and control. In addition to the considerations of integration through the phases of design, sampling, data analysis and reporting, the study also required ethical approval.

3.10 Ethical approval process

This research was designed and conducted in alignment with the values and principles of The National Statement on Ethical Conduct in Human Research (2007; 2015). Careful consideration of potential research risks was minimised by addressing ethical concerns such as anonymity of participants, and de-identified data analysis and reporting. Ethical approval for this study was sought from Monash University Human Research Ethics Committee (MUHREC). Both phases were included in the ethics application on February 5, 2016 to allow the committee to consider the entire project during the approval process. One area identified during the approval process was that question 37 of the survey asked participants about anxiety levels at work. As this had the potential to cause participants distress, the explanatory statement for the survey was modified to include information on support services for participants. Ethical approval was granted on February 15, 2016 (Project Number CF16/348 – 2016000164) and is attached as Appendix 1.

3.11 Conclusion

This chapter has described the underlying theoretical framework, a partnership model which aligns with the researcher's epistemological and ontological values of midwifery practice. These values guided the choice of a pragmatic research design utilising an explanatory sequential mixed method design to understand midwives' telephone triage practises. The next chapter presents the results of the quantitative findings.

CHAPTER FOUR – FINDINGS: QUANTITATIVE

Chapter Four – Findings: Quantitative

4.1 Introduction

This chapter presents the results of the first phase of the mixed methods study, the quantitative component. Consistent with the sequential explanatory design, phase one involved investigating midwives' experiences of telephone triage in order to establish a baseline understanding of the phenomena. As no survey tool existed, the researcher constructed a questionnaire based on themes and identified gaps from the scoping literature review. This allowed discovery of aspects of midwives' telephone triage practises. A publication entitled '*Telephone triage in midwifery practice: A cross-sectional survey*' is presented, which contains the substantial findings of phase one.

Reported in the quantitative findings paper are the study methods, development of the survey tool, pilot testing, content validity, setting, participant demographics, and data analysis methods. Findings were reported under the following headings: characteristics of participants, responding to telephone calls and managing workload, guidance and documentation, education and competence, and confidence and anxiety. Respondents to the survey were 242, which equates to 65.8% of the target sample.

4.2 Published quantitative results paper

Bailey, Newton, & Hall. (2019). Telephone triage in midwifery practice: A cross-sectional survey. *International Journal of Nursing Studies, 91*, 110-118. DOI: https://doi.org/10.1016/j.ijnurstu.2018.11.009

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Telephone triage in midwifery practice: A cross-sectional survey

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ABSTRACT

Background: Childbearing women commonly access maternity services via the telephone. A midwife receiving these calls listens to the woman's concerns and then triages women according to their assessment. This may result in the provision of advice and instruction over the telephone or inviting the woman into the health service for further assessment. Midwives are responsible for all care and advice given to women, including via the telephone.
Objectives: The purpose of this study was to explore the experiences and practices of midwives regarding their management of telephone triage.
Design: A cross-sectional survey.
Setting and participants: Purposive non-probabilistic sampling of currently practising midwife members of professional organisations was used to recruit participants. From this, 242 midwives responded and 230 returned valid surveys were used in data analysis.
Methods: Participant demographics, telephone triage processes, skills, educational preparation, confidence and anxiety levels, and external factors that influence midwives' management of telephone triage were collected via an on-line survey. Descriptive statistics and further analyses were conducted to explore relationships between variables.
Results: Eighty-three percent of midwives respond to 2–5 telephone calls per shift, with only 11.7% ($n = 24$) of midwives reporting that this is included in their workloads. Telephone triage is frequently managed in environments with distractions. Most midwives (84%; $n = 177$) report receiving no training in this skill. Confidence in performing telephone triage was reported, with higher confidence levels related to midwives' increased years of experience ($p < 0.05$) and age ($p < 0.01$). Anxiety related to managing telephone triage has been experienced by 73% ($n = 151$) of midwives, with this being greater in midwives with less years of experience. Anxiety is reported less by midwives in rural or remote settings compared to metropolitan or regional ($p < 0.05$) settings in this study. A variety of standards and aids to guide practice, and document calls are utilised in a range of ways.
Conclusion: To the authors' knowledge, this is the first study conducted to explore midwives' practises in telephone triage. The findings suggest the need for appropriate environments to conduct telephone calls and the inclusion of telephone triage in midwifery workloads. In addition, consistent education and processes are required to reduce anxiety and support midwives provision of this service to women.

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What is already known about the topic?

- Childbearing women use the telephone to access midwifery care and maternity services at times of uncertainty.
- Midwives use information provided by childbearing women to determine their need to attend in-person for further assessment.
- Midwives require strong communication skills, experience and a sound clinical knowledge base to manage telephone triage.

What this paper adds

- Midwives' of various experience levels commonly answer at least two telephone calls from childbearing women each day.
- Most maternity services do not have a dedicated service nor have midwives received specific training.
- A standardised and coordinated approach to telephone triage is required for midwives to provide safe, quality care to women they work with.

1. Introduction

Telephone triage is a process used to determine the level of urgency and type of health care required, and involves the caregiver asking questions to estimate urgency, give appropriate advice and identify the need for referral (Huibers et al., 2011). The use of the telephone to access health care has been documented since the middle of the twentieth century as a well-established practice, with women accessing the service across the childbearing continuum (DeVore, 1999). The purpose of maternity telephone triage is generally to determine if the woman requires an in-person assessment or referral to another service (DeVore, 1999; Janssen et al., 2006; Kennedy, 2007).

Whilst there is much discussion in the nursing literature on the topic of telephone triage, there is a paucity of research focusing on the midwifery discipline. In a recent scoping review the authors found only eleven papers written on the topic of telephone triage and midwifery practice (Bailey et al., 2018). Authorship of the papers was dominated by the United Kingdom (n = 8) and the United States (n = 3) with no other countries identified in the search on this topic. Of the included papers only one was primary research, the remaining papers were either discussion, quality improvement or clinical audits. The one research investigation was a qualitative study undertaken in the United Kingdom that explored midwives' views of care provided to women via the telephone (Spiby et al., 2014). This study was in the context of early labour care and found there was conflict between midwives gate-keeping labour ward and providing support to women. Spiby et al. (2014) suggest that telephone triage should be a discrete service independent from labour ward. Telephone triage relates to not only early labour care as women or their partners may phone the midwife or health service for any matter related to their pregnancy, labour, or early postnatal care. This requires the midwife to be clinically knowledgeable and prepared for any potential problem presented via the telephone.

Previous research recommends that midwives performing telephone triage need to have a sound midwifery knowledge base, be experienced, have excellent communication skills, highly developed decision-making skills, and the ability to prioritise and multi-task (Cherry et al., 2009; Clarke et al., 2012; Mahlmeister and Van Mullem, 2000; Nolan et al., 2007; Webb, 2004). Specific education in these areas is frequently recommended as a strategy to develop the necessary skills for telephone triage (Cherry et al., 2009; Finlay and Brown, 2013; Mahlmeister and Van Mullem, 2000; Nolan et al., 2007). Despite these recommendations, there are no published research studies that have evaluated education or compared experienced and novice midwives management of telephone calls. Midwives in Spiby et al.'s (2014) study suggest that midwives should already possess these skills and propose there is a need for teaching midwives how to identify nuances over the telephone instead of formalised training.

There are potential pitfalls during telephone triage such as hurried and interrupted calls, failure to evaluate properly the callers' needs or urgency of the problem, and high levels of ward activity not conducive to woman centred call management, which may influence decisions made (Ament, 1999; Clarke et al., 2012). Finlay and Brown (2013) found that development of a consistent approach to telephone triage assisted in mitigating risk. This consistent approach included strategies such as implementing a structured call process and standardised documentation. Development of discrete telephone triage services in three UK health facilities resulted in improved patient flow, reduction of inappropriate admissions, less telephone calls to other clinical areas, increased job satisfaction for midwives, improvement in labour ward workload, less unnecessary travel for women, and improved continuity of care for women (Cherry et al., 2009; Kennedy, 2007; Weavers and Nash, 2012).

Despite the longstanding usage of telephone triage in midwifery practices over the 20th century (Angelini, 1999; DeVore, 1999; Kelley and Mashburn, 1990) and into the 21st century (Kennedy, 2007; Webb, 2004), how midwives enact this role is largely unknown (Bailey et al., 2018). Given it is essential work of the midwife and maternity units generally offer this service 24 h a day 7 days per week, midwives need to be able to practice independently in managing telephone calls.

This paper presents the findings from phase one of a mixed methods study using an explanatory sequential design to explore how midwives manage telephone triage (Creswell and Plano Clark, 2011). An online survey tool was used to gather a wide range of views on the topic. The primary aim of this study was to explore the experiences and practices of midwives in their management of telephone triage. This study addresses the following research questions: How do midwives manage telephone triage? Are midwives specifically prepared for telephone triage through education or training? Are midwives confident in telephone triage?

2. Methods

A self-administered online survey tool was developed to investigate the views, experiences and practises of midwives managing care of women during telephone triage. Despite an extensive review of the literature in the disciplines of midwifery and nursing to determine if there was a validated survey tool, no tool regarding telephone triage was identified. We developed a questionnaire from identified themes from the literature and consultation among the research team who have expertise in midwifery. Development of the survey tool took several iterations until consensus among the research team was reached. One researcher (CB) developed the questions and sequence of questioning, one researcher (JN) reviewed the questions, types, sequence, and relevance, with the third researcher (HH) editing and providing the final decision on areas of contention. The final survey tool consisted of forty-nine questions including scaled items on a five-point Likert scale, multiple-choice questions, closed and partially closed questions, and open-ended questions. The survey tool had three sections: the first sought participant demographics, section two sought information on processes and preparation, whilst the third section sought information on participants' experiences and factors influencing telephone triage. The survey tool is summarised in Table 1.

Table 1
Summary of questions included in survey tool.

Survey tool	
Section 1: Participant demographics	This section included questions such as: geographical location the midwife worked, the level of health care service, whether practising in a midwifery led model of care, age, years of midwifery experience, where initial qualification was gained, type of qualification, primary practice setting, amount of calls managed.
Section 2: Processes and preparation	This section sought information on preparation of the midwife for telephone triage, education or training, competence, supervision of novices, processes or tools in place to support the practice, documentation used, policies or guidelines available to the midwife, confidence and anxiety levels of midwives.
Section 3: Midwives' experiences and factors that affect practice	This section sought information on the midwives' own experiences of telephone triage, skills used, organisational factors e.g. workloads, environment calls are managed, competing interests.

A panel of ten midwives with clinical and/or research expertise assessed content validity. The panel evaluated individual questions as well as the survey tool overall, using a four-point Likert scale measuring from not relevant to highly relevant. Each panel member's response was evaluated to establish the extent of content validity for each item and overall (Ayre and Scally, 2014; Polit et al., 2007). After the first round of review, one question needed re-wording and two questions were rated not relevant by most panel members ($n=8$) and were removed from the survey tool. The panel who all agreed on face validity evaluated the revised tool. This allowed for calculation of both individual items and the scales content validity index (Polit et al., 2007). Individual items scored a content validity index (I-CVI) of 0.80–1.0, exceeding the recommended $\geq$0.78 (Polit et al., 2007). The Scale-level mean Item Content Validity Index (S-CVI/Ave) is 0.94, which is above the recommended 0.90 (Ayre and Scally, 2014; Polit et al., 2007). Following institutional ethical approval the survey tool was pilot tested with a small sample of currently practising midwives ($n=15$). The survey tool was uploaded to the web-based online survey site Qualtrics® (https://www.qualtrics.com/). This pilot test was particularly important. Aside from testing if questions were working as intended, with the survey tool being web-based, details such as access to the survey tool from multiple platforms, time to complete the survey tool, skip instructions, and movement through the survey tool (forward and back) were also important to assess (Dillman et al., 2009). Reliability of the confidence survey scales (12 items) using Cronbach alpha was 0.942, demonstrating good reliability (De Vaus, 2014).

2.1. Participants

Purposive non-probabilistic sampling was used to select the population under investigation, namely currently practising midwives (Nardi, 2014). This sampling approach was used to involve individuals that are especially knowledgeable or experienced in the phenomena of interest (Creswell and Plano Clark, 2011). Based on a population of 8528 midwives employed in Victoria (AHPRA, 2017) with a confidence level of 95% and confidence interval of 5 the sample size calculated was 368. Two midwifery professional organisations were contacted to assist with circulation of the survey tool. The Australian Nursing and Midwifery Federation (ANMF) Victorian branch agreed to circulate the survey tool via a link in their e-newsletter and on their website and social media pages. The Australian College of Midwives (ACM) circulated the survey link in their e-newsletter. It is unknown how many midwives registered in Victoria are members of either professional organisation; however, this two-pronged approach was taken to reach as many midwives as possible. Data collection occurred from April to September 2017, with reminders sent throughout this period. All survey responses were anonymous, with consent to participate implied by completion of the survey tool. Survey questions were not compulsory, thus participants had discretion over what they answered. No incentive to participate was provided.

2.2. Setting

The setting for this study was Victoria, Australia. Victoria is the most densely populated of the Australian states and geographically is approximately the size of the British Isles. The population is mainly concentrated on the capital city of Melbourne. Midwives work in a variety of practice settings including the public and private hospital sector, private midwifery practice, community health settings, and domiciliary care services that are located in metropolitan, regional and rural or remote areas. There are various models of care including midwifery led, shared care and medically led. The main public health service in the state is government funded and guidelines for practice are implemented from a central governance body that has input from clinicians and consumers.

2.3. Data analysis

Data were analysed using IBM SPSS Statistics for Windows, version 24 (IBM Corporation, 2016). Data were summarised using descriptive statistics. For the continuous variables in this sample of midwives, the distribution for age was asymmetric bimodal, and for years of experience the distribution was unimodal with skewness to the right (Welkowitz et al., 2011). As parametric statistical tests assume a normal distribution of data non-parametric statistical tests were used (Albers, 2017; Welkowitz et al., 2011). Relationships and comparisons among variables were explored using Chi-square, Mann-Whitney U and Kruskal-Wallis H tests.

3. Results

Two hundred and forty-two midwives responded to the survey. A criterion for inclusion in the study was for midwives to be currently practising. There were 5% ($n=12$) of survey respondents that were not currently practising midwifery and were opted-out of the remainder of the survey. The remaining 95% ($n=230$) of respondents were currently practising and completed the rest of the survey. Not all midwives answered all questions and some questions resulted in 'not applicable' responses. No attempt was made to impute missing data for analysis. The results have been grouped together and are reported under the following themes: Characteristics of study participants, Responding to telephone calls and managing workload, Guidance and documentation, Education and competence, and Confidence and anxiety.

3.1. Characteristics of study participants

Participant demographics are summarised in Table 2. All respondents were female with a minimum age of 22 years and maximum of 68 years ($M=43.6$, $SD=12.4$). Years of experience ranged from 6 months to 42 years ($M=15.7$, $SD=11.9$). Of the midwives, (82.7%; $n=199$) were qualified as both a nurse and a midwife. Qualifications of this sample of midwives was by hospital certificate (29.6%; $n=66$), postgraduate degree (39.5%; $n=88$), and

Table 2
Characteristics of midwives responding to survey.

Variable	n[a]	%
Age of participants (*N* = 228)		
<29.00 years	48	21.1
30.00–39.00 years	39	17.1
40.00–49.00 years	48	21.1
50.00–59.00 years	72	31.6
>60.00 years	21	9.2
Participant roles (*N* = 230)		
Registered Midwife	40	17.4
Registered Nurse and Midwife	190	82.6
Qualification (*N* = 223)		
Hospital training	66	29.6
Postgraduate degree	88	39.5
Undergraduate degree	69	30.9
Country of initial midwifery education (*N* = 229)		
Australia	207	90.4
Overseas	22	9.6
Maternity care experience (*N* = 230)		
<4.25 years	46	20.0
4.26–8.00 years	50	21.7
8.01–18.50 years	42	18.3
18.51–29.50 years	46	20.0
>29.51 years	46	20.0
Practice setting worked in last 12 months (*N* = 230)		
Antenatal care	19	8.3
Labour and birth	40	17.4
Postnatal care	30	13.0
Domiciliary care	8	3.5
Special care nursery	3	1.3
Across multiple practice areas	122	53.0
Other (e.g. caseload/group practice; lactation services)	8	3.5
Sector (*N* = 228)		
Public	207	90.8
Private	18	7.9
Private midwifery practice	3	1.3
Midwives working in midwifery-led models of care (*N* = 228)		
Yes	54	23.7
No	164	71.9
Not sure	10	4.4
Geographical location (*N* = 229)		
Metropolitan	104	45.4
Regional	103	45.0
Rural or Remote	22	9.6
Annual birth rates (*N* = 227)		
<800	45	19.8
801–1000	35	15.4
1001–2000	26	11.5
2001–4000	81	35.7
4001–>5000	40	17.6
Level of Maternity Care Service (*N* = 227)		
1, 2, 3 (Primary) Normal and low risk pregnancies and babies	42	18.5
4, 5 (Secondary) Medium risk pregnancies & babies; moderate complications	144	63.4
6 (Tertiary) Complex pregnancies, births and neonatal intensive care	41	18.1

[a] Denominator may vary because of missing values.

undergraduate degree (30.9%; *n* = 69). Over 90% (*n* = 200) of midwives received their qualification in Australia. The remaining 10% (*n* = 22) were qualified overseas, all in the United Kingdom.

Midwives predominantly worked in the public sector (90%; *n* = 200), private sector (8%; *n* = 18), or private midwifery practice (2%; *n* = 3). Under the Department of Health (Victoria) capability framework classifications, the majority of respondents (63.4%; *n* = 144) surveyed worked in a medium risk (secondary) health service, 18.5% (*n* = 42) worked in a low risk (primary) health service, with the remaining 18.1% (*n* = 41) working in a high-risk (tertiary) health service. Birth rates varied from less than 100 births to greater than 5000 births per annum. The birth rate in the health services worked was <800 (19.8%; *n* = 45), 801–1000 (15.4%; *n* = 35), 1001–2000 (11.5%; *n* = 26), 2001–4000 (35.7%; *n* = 81), 4001 to >5000 (17.6%; *n* = 40). The respondents worked per week 25–40 hours (70%; *n* = 161), or 8–24 hours (30%; *n* = 68). The area of maternity

care predominantly worked in over the past 12 months included options of antenatal care, labour and birth, postnatal care, extended postnatal care e.g. domiciliary care, special care nursery, or across multiple areas as required. More than half the respondents (53.0%; n=122) worked across multiple areas of maternity care, followed by labour and birth (18%; n = 40), then postnatal/domiciliary care (16.5%; n = 35). In the 'other' option provided, 3.5% (n = 8) of survey respondents' worked in either lactation or maternity assessment services or in midwifery models of care e.g. caseload or midwifery group practice where care is across the childbearing continuum.

3.2. Responding to telephone calls and managing workload

Ninety-nine percent (n = 222) of midwives reported that health services provide a telephone number for childbearing women to call to speak with a midwife. Midwives estimate that health services each day respond to 1–5 calls (20.5%; n = 46), 6–10 calls (21%; n = 47), 11–15 calls (11.6%; n = 26), 16–20 calls (16.1%; n = 36), >20 calls (30.8%; n = 69). Individually midwives (83%; n = 176) stated that they respond to between 2 and up to 5 telephone calls per shift, with the remaining 17% (n = 36) responding to at least one telephone call per shift. The first person to respond to a woman telephoning would be a midwife (68.4%; n = 147), ward receptionist (30.2%; n = 65), or nurse/'other' (1.4%%; n = 3). Only 23% (n = 52) of midwives reported that a person is allocated to answer calls, whilst just over half (51%; n = 26) of the facilities have an allocated area for answering calls. Midwives (5.7%; n = 13) identified that their place of work has a dedicated triage service, which is predominantly a day assessment unit staffed by a midwife. Participants indicated the availability of these services ranges from 3 to 7 days per week, and from 3 to 24 hours per day. Two-thirds of these midwives believed that these services reduce telephone calls to other clinical areas e.g. labour or postnatal ward. The majority (85%; n = 177) of respondents reported that they manage telephone triage in a ward area with distractions from other staff or the public. Ten percent (n = 21) of midwives stated they have an area that is more private without distractions, whilst 5% (n = 10) who work within midwifery models could be anywhere when receiving a call e.g. in the community, in the car, at home, in a woman's home. The environment for triaging telephone calls was deemed suitable (35%; n = 73), unsuitable (47%; n = 98), or unsure of suitability (18%; n = 38) by the respondents. For 11.7% (n = 24) of midwives responding to telephone calls is included in their workload allocation, whilst 88.3% (n = 167) do not have it included. Over 90% (n = 187) of midwives agreed that telephone triage increases their workload, whilst three-quarters (n = 154) agreed that workload allocation should include telephone triage.

3.3. Guidance and documentation

Midwives use a variety of standards to guide their telephone triage practice. When asked what midwives use; respondents could choose more than one option and indicate all items that they use. The main items used are a specific maternity telephone triage policy (29%; n = 84), protocol (32%; n = 92) and clinical practice guidelines (39%; n = 112). Midwives also use a variety of aids during telephone triage including a telephone call record sheet (51.2%; n = 124), specific maternity telephone triage form with pre-populated questions (38.8%; n = 94), maternity progress notes (23.1%; n = 56), clinical practice guidelines (13.2%; n = 32), or a decision support algorithm (8.7%; n = 21). Only 3.7% (n = 9) of midwives access computer assisted decision aid software, whilst 6.2% (n = 15) did not use any aids. In the open text section, midwives identified experience and knowing the woman (in midwifery led models of care) as other aids they used. Documentation to capture the telephone calls is managed in a variety of ways, with information included in the woman's health record (21%; n = 62), in a telephone record document (45.4%; n = 134), electronically e.g. online perinatal record system (28.5%; n = 84); scanned documents placed in the woman's history later (3.0%; n = 9) or not documented (2.0%; n = 6).

3.4. Education and competence

When considering education related to telephone triage during pre-registration training, the majority of respondents (84%; n = 177) indicated that they did not receive training. Of those receiving training (n = 30), this was delivered in multiple formats such as a midwife providing supervision during calls (34%; n = 10), observation of telephone calls (25.7%; n = 8), lectures or tutorials (22.8%; n = 7), simulation (11.4%; n = 3), and self-directed learning packages (5.7%; n = 2). Midwives (65.6%; n = 137) report that since registration they had not undertaken any educational activities related to telephone triage. For those undertaking educational activities, these included informal education sessions (19%; n = 40), formal education sessions (2.9%; n = 6), annual self-review (6.2%; n = 13), and an orientation package on commencement of employment (1.9%; n = 4). Respondents self-rated their education and training as comprehensive (2.4%; n = 5), adequate (16.4%; n = 34), barely adequate (24%; n = 50), inadequate (21.2%; n = 44) and non-existent (36%; n = 74).

Respondents were asked if competence in telephone triage should be assessed. Responses were yes (62.5%; n = 130), no (12.5%; n = 26), not sure (25%; n = 52). Asked when assessment should take place, the responses included annually (37%; n = 67), as a student (22%; n = 40), on commencement of first employment as a midwife (22%; n = 40), change of employment to another organisation (8%; n = 14), and 'other' (10.6%; n = 19). In the 'other' category midwives indicated that all options should be considered, and some additional suggestions such as first employment plus annually, first employment plus 2–3 yearly, training should be provided but not assessment, and some were uncertain when it should occur. Supervision of novice or student midwives regarding telephone triage is performed by any qualified midwife (50.5%; n = 102), the midwife in charge of the shift (18%; n = 36), midwifery educator (3.5%; n = 7), no supervision (22%; n = 44), and 'other' (6%; n = 13). In the 'other' category, midwives stated that students, graduate midwives or novices do not or should not perform telephone triage and are discouraged from doing so.

3.5. Confidence and anxiety

Midwives were asked to rate their level of confidence in managing telephone triage on a five-point scale measuring 'very confident' to 'not at all confident'. Overall confidence levels were: very confident (28%; n = 58), confident (41%; n = 85), somewhat confident (28%; n = 57), not very confident (3%; n = 6), and not at all confident (0%; n = 0). Further analysis of confidence related to age, years of experience, training undertaken, and health care setting were performed. There was no statistical difference for midwives who have received training, those working across various geographical locations, in public or private sectors, or low, medium or high-risk settings. A Kruskal-Wallis H test showed that there was a statistically significant difference, X^2=9.9, p= 0.020, between the distribution of the confidence score across age groups. Higher confidence ratings were reported by older midwives, with median ages for very confident (Md=49.0, n=57), confident, (Md=48.0, n=85), somewhat confident (Md=41.0, n=57), and not very confident (Md=34.0, n=6). Additionally, there was a statistical significance between the distribution of the confidence score across years of experience groups, (X^2=31.4,

Table 3
Confidence levels of midwives when managing telephone triage.

	Very confident n (%)[a]	Confident n (%)	Somewhat confident n (%)	Not very confident n (%)	Not at all confident n (%)	(n)
Overall confidence in telephone triage	58 (28.2)	85 (41.3)	57 (27.7)	6 (2.9)	0	(n=206)
Receiving a telephone call	100 (48.1)	75 (36.1)	28 (13.5)	4 (1.9)	1 (0.5)	(n=208)
Ascertaining what the caller needs	64 (30.8)	109 (52.4)	35 (16.8)	0	0	(n=208)
Performing an assessment over the telephone	51 (24.5)	96 (46.2)	52 (25.0)	8 (3.8)	1 (0.5)	(n=208)
Reducing anxiety of the caller	50 (24.2)	103 (49.8)	51 (24.6)	3 (1.4)	0	(n=207)
Making a decision for the woman's attendance/non-attendance	59 (28.4)	103 (49.5)	38 (18.3)	7 (3.4)	1 (0.5)	(n=208)
Referring to another service or clinician	52 (25.0)	105 (50.5)	43 (20.7)	8 (3.8)	0	(n=208)
Managing urgent situations	67 (32.2)	90 (43.3)	40 (19.2)	10 (4.8)	1 (0.5)	(n=208)
Managing women whose primary language is not English	17 (8.2)	45 (21.6)	91 (43.8)	45 (21.6)	10 (4.8)	(n=208)
Managing women with disabilities	14 (6.7)	63 (30.3)	92 (44.2)	33 (15.9)	6 (2.9)	(n=208)
Assessing the woman's understanding of advice given	44 (21.2)	122 (58.7)	36 (17.3)	5 (2.4)	1 (0.5)	(n=208)
Managing a second or third call from the same woman	67 (32.5)	97 (47.1)	36 (17.5)	6 (2.9)	0	(n=206)

[a] Denominators vary because of missing values.

$p < 0.01$), with those reporting 'very confident' having 18.5 years or more of experience, whilst those 'not very confident' have 2.0 years or less of experience. Confidence across a set of eleven telephone triage related activities was also explored (see Table 3). For most of these activities, midwives were confident. Midwives are least confident when managing women with English as a second language, or women with disabilities, although further analysis showed no statistical significance.

Telephone triage had caused a degree of anxiety for midwives (73%; $n = 151$) responding to this survey. A Mann-Whitney U Test indicated that the self-reported anxiety was greater for midwives with less years of experience ($Md = 10.0$, $n = 151$) than for midwives with more years of experience ($Md = 17.0$, $n = 56$), $U = 3340$, $Z = -2.32$, $p = 0.020$, $r = .16$, although this has a small effect size. However, there was no effect of age on anxiety ($U = 3544$, $Z = -1.61$, $p = 0.108$). When asked the degree of anxiety it ranged from mildly anxious (37%; $n = 53$), moderately anxious (43.4%; $n = 62$), very anxious (15.4%; $n = 22$) to extremely anxious (4.2%; $n = 6$) (See Fig. 1). A Kruskal-Wallis H test showed that there was no statistically significant difference in years of experience on degree of anxiety, $X^2 = 3.0$, $p = 0.615$. There was no statistical difference in anxiety for midwives who had received training, those working in low, medium or high-risk settings, or in public or private sectors. However, there was a statistically significant difference based on geographical location. Those midwives working in metropolitan or regional locations reported more anxiety than those in rural-remote areas. A Chi-square test for independence indicated an association between anxiety and geographical location, $X^2 = 2.0$ ($n = 207$) $p = 0.022$, $V = 0.19$. However, based on Cramer's V the strength of this association is of modest strength. A Kruskall-Wallis test provided evidence of a difference ($p < .05$) between the mean ranks of at least one pair of groups from the metro, regional, or rural-remote geographical locations. The Dunn-Bonferroni pairwise tests were carried out for the three pairs of groups (metro, regional, and rural-remote). There was evidence that there was a statistical difference between the metro and rural-remote groups ($p = 0.021$), and a difference between the regional and rural-remote groups ($p = 0.033$). With the rural-remote groups reporting less anxiety in each pairing.

4. Discussion

To the best of the authors' knowledge, this cross-sectional study is the first exploration of telephone triage practices of midwives to date. The results of this study indicate that there are variations in practice, service provision and management of telephone calls from pregnant women. Findings from this study have provided new insights and knowledge about telephone triage. The results highlight the vast volume of calls handled, processes in use, environmental conditions where calls are managed, variations in preparation for practice, workload impacts and midwives confidence and anxiety levels. Only one previous study has investigated midwives' practises of telephone triage, and therefore it is difficult to discuss findings of this research in view of previous research. Literature from other health disciplines such as nursing is considered in view of the findings of this research. As a baseline, this study reveals that midwives manage thousands of calls per year from pregnant or postnatal women in addition to their usual workloads in an environment that can be distracting and with little preparation or training. Confidence levels are positive, however, managing telephone triage does invoke some anxiety, which may impede performance in the workplace. The sample characteristics in this study are similar to a study of Australian midwives' workforce characteristics in terms of gender, age, dual registration as a nurse, and country of initial qualification (Australian Institute of Health and Welfare, 2016). However, the area of practice differs between the National sample and this study. Nationally, the largest amount of midwives work in postnatal care (Australian Institute of Health and Welfare, 2016), whereas in this study many midwives work across multiple areas of practice. This may have occurred as the option to nominate all areas was included in the survey, or that those midwives working postnatally chose not to respond to the

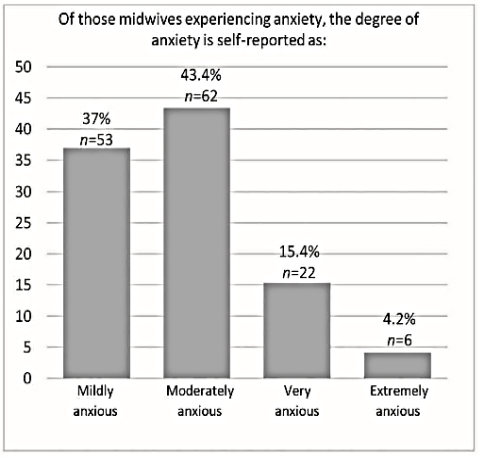

Fig. 1. Midwives self-reported anxiety related to telephone triage.

survey, believing the survey was intended for midwives practising in labour or antenatal care areas where telephone triage is more common.

There were 81,713 births in Victoria in 2016 (Australian Bureau of Statistics, 2017) indicating that there is potential for a large volume of telephone calls made to midwives or maternity services. Midwives in the current study report that they respond individually to at least two telephone calls per shift. This is an important finding as it demonstrates that midwives spend time caring for women via the telephone as well as in-person. Only a small amount of hospitals were reported to have a dedicated service for these calls. Hence, as midwives could be responsible for managing calls it is important that they have the necessary skills to manage this component of their practice. The volume of calls also has implications for midwives' workloads in terms of work overload or it may create concern for a midwife trying to manage care to multiple women across their workday. Moreover, the quality of care or advice over the telephone may be difficult to maintain. Additionally this finding is important for women accessing midwifery care this way, as there is an expectation that a midwife will be fully available to spend time with them on the telephone (Green et al., 2012). Following the set-up of a discrete telephone triage service Weavers and Nash (2012) found that women felt reassured and confident, valued quality information from the midwives, and the ability to speak with the same midwife as positive outcomes of this service change. This is consistent with studies of women's experiences with telephone triage where women were most satisfied with clear advice, reassurance, encouragement, respectful interactions with friendly midwives, and given time to have their anxieties addressed (Eri et al., 2011; Green et al., 2012).

Environmental conditions have previously been identified as not conducive to telephone triage, such as noise or open spaces where calls can be overheard (Clarke et al., 2012; Reinhardt, 2010; Spiby et al., 2014). Therefore, it was not surprising that midwives in this study also found this a challenge. If the telephone is in a public place, then confidentiality and privacy of the caller and information gathered and given is difficult to maintain. The maintenance of privacy and confidentiality may prove difficult for midwives working within a health service or for those that are community based as these midwives generally carry telephones and may receive a call in a public space. The impact of these issues may result in crucial information missed or inappropriate triage decisions made. However, by identifying challenging environmental factors it provide opportunities for modifications and improvements (Reinhardt, 2010). Improvements such as workspaces with low noise or distractions, access to a computer or health history, allocated time to spend with the caller could all improve the service for the midwife and the woman (Purc-Stephenson and Thrasher, 2010; Reinhardt, 2010).

Across the various maternity services, midwives have a range of documents to support and guide practice. However, there appears to be no standardised policy or guideline, resulting in completion of documentation of telephone calls in a variety of ways. This is consistent with midwifery and nursing practices in other countries such as the UK and USA (Clarke et al., 2012; Finlay and Brown, 2013; Mahlmeister and Van Mullem, 2000; North et al., 2014; Webb, 2004). Development of both guidelines and documentation would aid service provision, and improve the quality and consistency of advice and care (Clarke et al., 2012; Finlay and Brown, 2013; Mahlmeister and Van Mullem, 2000; North et al., 2014; Webb, 2004). Further, having consistent practices would provide an outline of acceptable standards of care, mitigate against clinical risk, enable benchmarking and the identification of optimal practices or areas for improvement (Finlay and Brown, 2013; Weavers and Nash, 2012). Documentation is important as it provides written evidence of the call taking place, what has been said, legal coverage for the clinician, and pertinent information for colleagues should the caller telephone again or present to the service (Ström et al., 2006).

Despite identification that telephone triage training should be provided (Bailey et al., 2018), training was identified as infrequent in the current study. Where training is discussed in the literature, consistent recommendations are made for particular topics. These include enhanced communication techniques, assessing caller needs, organisational processes, decision-making skills, inclusion of clinical scenarios that produce decision ambiguity, documentation and legal implications (Clarke et al., 2012; DeVore, 1999; Kaakinen et al., 2016; Mahlmeister and Van Mullem, 2000; Purc-Stephenson and Thrasher, 2010; Richards et al., 2004). Telephone triage training programs provided to nurses has shown positive effects on service quality and improvement in knowledge, skills and attitudes (Kaakinen et al., 2016) and it is likely that similar results could be seen in the maternity context.

Measurement of competence in telephone triage appeared to be valued by this group of midwives, even though competence currently is rarely assessed. Competence is perhaps gained in other ways, such as mentoring of staff new to telephone triage by experienced midwives. Mahlmeister and Van Mullem (2000) suggest this mentoring approach should continue until the midwife can independently function, with performance appraisals being used to reflect attainment of the required skills. Some midwives responding to this survey volunteered that student midwives, new graduates or novices are discouraged from performing telephone triage. This raises the question then of how attainment of competence in telephone triage can be achieved. Spiby et al. (2014) found taking a call to be a valuable learning experience for the junior midwife as these midwives would seek help from more experienced midwives when necessary. Similar to most countries Australia suffers staff shortages in their healthcare workforce (Aluttis et al., 2014) particularly in rural and remote areas (Francis and Mills, 2011). Thus, newly qualified midwives may be required to manage telephone triage from an early point in their careers. As telephone triage is within each midwives' scope of practice and there are currently no minimum education standards or mandated years of clinical experience it is important that opportunities are provided for skill development.

The majority of midwives in this study are confident in the practice of telephone triage, with confidence levels increasing with experience and age. This is not surprising considering both confidence and competence are evident in the expert clinician (Benner, 1982). Experience as described by Benner (1982) is the refinement of preconceived notions and theory through multiple practical encounters, which add nuances, and shades of difference to theory. Two areas midwives report the least amount of confidence is with calls from women whose first language is not English or women with disabilities. With Australia being a multicultural society language barriers are a common challenge. Managing language barriers during telephone triage requires additional time and energy. There is a risk of wrong decisions due to misunderstandings, and the caller may become frustrated or hostile (Purc-Stephenson and Thrasher, 2010). Development of clear guidelines or policy to minimise any inconsistency in care when managing the woman whose first language is not English (Clarke et al., 2012; Mahlmeister and Van Mullem, 2000) are required to overcome any difficulties and improve the service for both midwives and women. Indeed, strategies and localised guidelines should be included in any orientation or training of midwives, particularly access to translation services, culturally

acceptable practices for indigenous women, and occasions when the woman should be seen in-person.

Conversely, midwives have also reported a degree of anxiety. The cause for the anxiety was not determined. However, it is of interest that telephone triage was perceived as creating this type of emotional response. This is indicative that midwives regardless of age, experience level or setting face similar issues and challenges. Midwives need to have avenues of support if they experience anxiety related to any aspect of their role. One such avenue found by nurses was to explore concerns together as a group in training sessions. A similar strategy could be implemented with midwives (Kaakinen et al., 2016). An exploration of factors that cause anxiety for midwives is needed to enable this professional group to develop effective strategies in reducing this anxiety.

5. Limitations

A number of limitations of this study have been identified. The convenience of the online survey needs to be balanced with the challenge of possible low response rates. On average web based survey response rates are 11% lower than other survey modes (Fan and Yan, 2010; Kaplowitz et al., 2012). To overcome this limitation an email invitation was sent to potential respondents with an explanation of the survey and its importance and the link to the survey (Kaplowitz et al., 2012). This was followed with reminder emails (Dillman et al., 2009) and alerts on social media. These strategies have been shown to enhance response rates (Dillman et al., 2009; Kaplowitz et al., 2012). Even with these measures, the sample size did not reach the estimate based on the number of midwives registered in Victoria. This survey may have also been effected by self-selection response bias (Dillman et al., 2009) with midwives with an interest in the topic being more likely to respond. Midwives that work in areas other than where telephone calls have traditionally been directed e.g. labour ward or antenatal clinic may have chosen not to respond.

This study was undertaken in one state of Australia, limiting the generalisation of the findings nationally and internationally. Despite these limitations and to the best of our knowledge, this is the first study of midwives and their telephone triage practises embarked upon. The survey presents new information about midwives' experiences, processes and practises related to telephone triage, and their views regarding the need for education or training. Although this is a small study in the setting of one state of Australia, it may provide insight into telephone triage and midwifery practice in other contexts.

6. Conclusion

This study provides an important contribution to our current understanding of midwives' practises in telephone triage, which is a crucial service to women. This practice is managed by midwives in environments that may not be conducive to call taking, resulting in suboptimal care for women. They perform this in addition to other workload pressures, receive little training, and at times have experienced anxiety related to telephone triage. Despite the experience of anxiety, midwives report they are mostly confident in their telephone triage practice. Enhancing understanding of telephone triage practice may assist midwives to adapt the service to better meet their workplace environment and the needs of women. Development of specific training programs for midwifery practice is needed for the novice midwife. Further research internationally is needed to explore midwives' perceptions of their telephone triage practice. This research could provide evidence for the development of practice guidelines in midwifery telephone triage.

Conflicts of interest

None declared.

Ethics

The authors declare that the Monash University Human Ethics Research Committee approved the research presented in the manuscript. Project approval number CF16/348-2016000164.

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4.3 Key findings

The majority of midwives in this study reported that they respond to between two and up to five telephone calls per shift. Midwives of all experience levels manage these calls, and most have not received specific training for telephone triage. Very few facilities have a dedicated maternity triage service. Those that have this service report a reduction of telephone calls to other clinical areas e.g. birth suites. Midwives manage telephone calls in ward areas where there are distractions from other staff and the public. Telephone triage increases workloads of midwives, however, most do not have it included in their workload allocations. Very few midwives have access to computers to assist during telephone triage, or for documenting the call. Most midwives to document calls use a variety of paper-based records. However, midwives in this study are confident with telephone triage, despite periods of anxiety. Midwives working in rural or remote settings reported less anxiety than those in metropolitan or regional settings. Not all results were included in the published paper due to editorial restrictions. Further results from the cross-sectional survey are included below.

4.4 Additional results

This section includes additional results not included in the published quantitative paper due to journal constraints on size of paper for publication. Questions related to skills used, and training in specific aspects of telephone triage call management were included in the survey tool regarding skills and training in specific aspects of telephone triage calls. Respondents to the survey were invited to provide open-ended comments about their experiences with telephone triage. A content analysis of these additional comments has been provided.

4.4.1 Skills used during telephone triage

During the scoping review of the literature, there were skills that midwives use during telephone triage commonly cited. Eight skills were identified and included in the survey.

Information was sought on how frequently midwives perceive they use each of these eight skills during telephone triage. The scale to gather this information had options of always required, frequently required, sometimes required, or never required. The stacked bar chart (see figure 5) shows how frequently respondents (*n*=207) use these skills during telephone triage. The skills of using a clear voice, active listening, eliciting further information from the caller, and an ability to judge the caller's tone of voice were rated by >80% of respondents as always required. Whilst the remaining four skills of giving women examples to describe their situation, assessing breathing tones over the telephone, assessing changes to tone of voice, and ability to judge non-verbal cues from the woman had response rates >50% for always required. There were only two skills rated by some respondents as never required, these were assessing breathing tones over the telephone (1%), and ability to judge non-verbal cues from the woman (3.4%). The skills list was limited, and no option was included to list further skills. Therefore, specific questions regarding skills were necessary inclusions in the qualitative interviews with midwives. In addition to skills, training for telephone triage was an unknown factor and included in the survey.

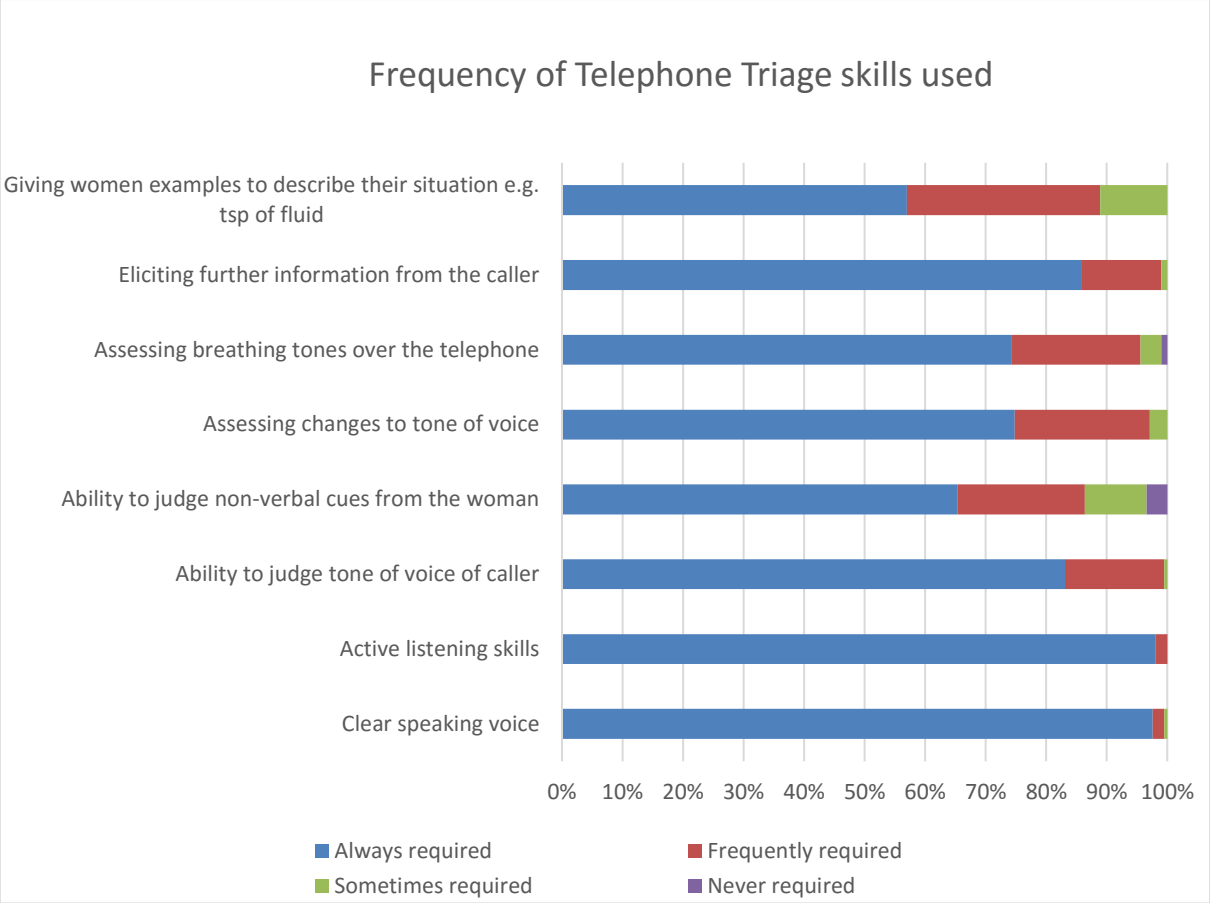

Figure 5: Frequency of use of telephone triage skills

4.4.2 Training to manage telephone calls

The following clustered bar chart (see figure 6) represents participants' responses to eleven aspects of telephone call management identified from the literature or suggested by the expert panel involved in the survey development. These eleven aspects of telephone call management include: managing distractions or competing interests, professional responsibility, risk management, managing calls made by a person other than the pregnant woman, managing anxious or distressed callers, managing non-English speaking callers, effective decision making, using aids for triage decisions, transferring assessment skills to the telephone, managing sensory deprivation, and telephone communication skills. Participants were asked to state whether they had received training or not in these aspects of call management. The bars in the chart indicate whether the respondent received training in these

aspects of call management. The orange bars indicate ‘no’ to training, while the blue bars represent ‘yes’ to training. Responses indicate that 61.5% or more of participants have not had training in any of these eleven aspects of telephone triage management. Participants have had the least training in managing sensory deprivation (98%), managing competing interests (95%), and transferring assessment skills to the telephone (92%). The most training undertaken was reported in areas of professional responsibility (38.5%), risk management (27.8%), and effective decision-making (26%). These results together with those reported in the published quantitative paper provide important insights into contemporary midwifery telephone triage practice. These aspects of call management could challenge the midwife-woman partnership in the areas of providing support, being accessible, and providing women opportunities for active participation in her own care. Midwives knowledge of clinical scenarios that may present during telephone triage was measured in the next result reported.

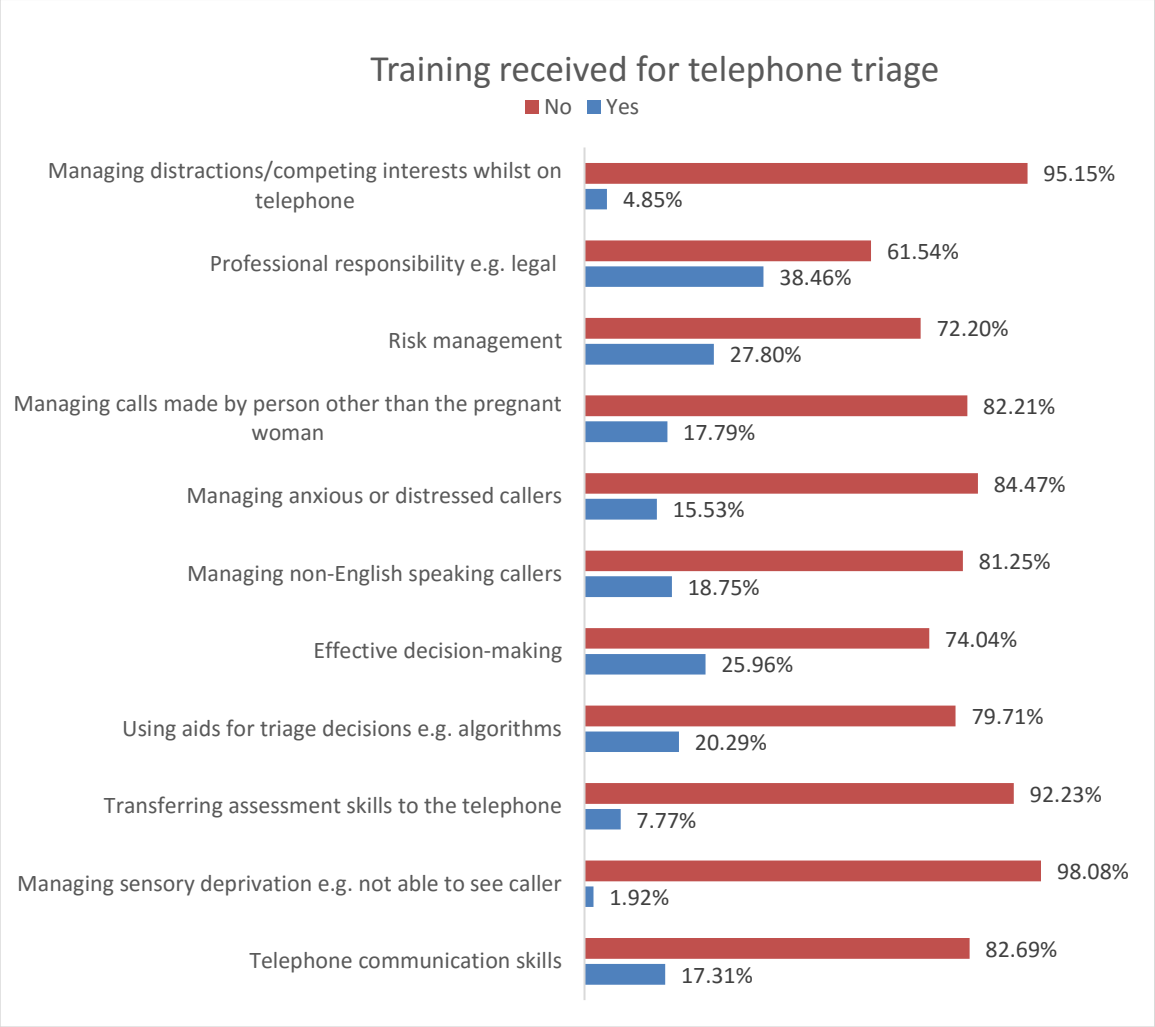

Figure 6: Training in telephone triage

4.4.3 Midwives responses to triage scenarios

There was a further question on the survey tool that asked midwives to rate a list of twenty-one possible clinical presentations that may cause a woman to telephone a midwife. Each item could be rated in terms of response time on a 5-point Likert scale of most critical to least critical. This was to establish whether midwives responded with the expected time frame for two selected presentations amongst this list. The first selected presentation was a question regarding reduced fetal movements, with a more urgent time response expected. Whilst the second question about postpartum breast soreness was less time critical, and the responses expected was toward the least time critical end of the scale. The survey question was designed to ascertain respondents' knowledge of particular facts. Not all questions in this list were

responded to by all, with response rates for each clinical scenario ranging from 196 to 202. Despite this, the expected responses were recorded for the two predetermined questions, as shown in table 3. It is important to establish a baseline of how midwives use their knowledge and develop practice wisdom as these are core tenets in the *Midwifery Partnership Model.*

Table 3: Response time for potential telephone triage clinical presentations

CLINICAL PRESENTATION	TIME CRITICAL (N)	TIME CRITICAL (%)	LESS TIME CRITICAL (N)	LESS TIME CRITICAL (%)	TOTAL (N)
Decreased fetal movements	195	96.53%	7	3.47%	202
Postpartum breast soreness	33	16.67%	165	83.33%	198
Early labour at term	51	25.25%	151	74.75%	202
Early labour not at term	196	97.03%	6	2.97%	202
Active labour at term	172	85.15%	30	14.85%	202
Active labour not at term	201	100.00%	0	0.00%	201
Bleeding from genital tract	197	98.01%	4	1.99%	201
Ruptured membranes at term	147	73.50%	53	26.50%	200
Ruptured membranes not at term	199	98.51%	3	1.49%	202
Woman booked for caesarean section who is contracting	199	99.00%	2	1.00%	201
Postpartum bleeding from genital tract	147	75.00%	49	25.00%	196
Symptoms of dysuria	50	24.88%	151	75.12%	201
Headache +/- visual disturbance	182	90.55%	19	9.45%	201
Postpartum breastfeeding difficulties	23	11.56%	176	88.44%	199
Postpartum wound discharge	69	34.67%	130	65.33%	199
Postpartum pain in calf	156	78.79%	42	21.21%	198
Substance or medication use in pregnancy	72	36.36%	126	63.64%	198
Physical trauma to the abdomen	200	99.50%	1	0.50%	201
Abdominal pain	181	90.05%	20	9.95%	201
Emotional/mental well-being support	72	36.00%	128	64.00%	200
Medical complication e.g. Unstable blood glucose levels	131	65.50%	69	34.50%	200

4.4.4 Free text responses

The final question in the survey provided an opportunity for midwives to make open-ended comments about their experiences or views of telephone triage. As this was the first study of Victorian midwives about telephone triage, it was deemed important to invite midwives to add further comment on the topic by providing a free text box without word count limitations. This was important for discovering new insights not found in the literature or covered in the other survey questions. Content analysis of the open-ended question revealed the following recurring categories that are ordered based on frequency of comment occurring.

4.4.4.1 Lack of preparation

Overwhelmingly midwives reported a lack of preparation or training for telephone triage, and the consequence this has had on their midwifery practice. There are concerns about clinical risk and the informal nature of telephone triage processes, and reports that it is stressful at times. This stress seemingly may arise from making decisions or providing advice or influences from other midwives.

> *"Telephone calls are very nerve wrecking (sic) and you are often left with an uncertainty that the advice you have given is right for the circumstances".*

This sense of clinical risk may potentially test the underpinning principle of the *Midwifery Partnership Model* that pregnancy and childbirth are normal life events.

Another aspect of lack of training reported was that midwives need to develop skills, competence and confidence through other means. For some, this was achieved over time managing telephone triage, whilst others drew from prior professional experiences.

"I feel my telephone skills come from having worked in other areas of nursing that require phone triage, more so than any training or supervision I have received as a student or graduate midwife".

This finding indicates there are gaps in developing midwifery practises that are central to working in partnership with women and advancing midwifery as an independent profession.

The question regarding midwives' responses to triage scenarios shown in table 4.4.3 did influence open text responses at the end of the survey. Midwives (*n*=25) made clarifying statements about this question only in the free text section rather than adding anything further about telephone triage itself. In particular, these statements were about needing further information to determine how time critical each presentation would be or offering information about how this would be achieved.

"A lot of these clinical scenarios are hard to give a time frame for as I don't know in what context they are. Some I have identified as time critical but if I was to talk to the woman it may be more moderate or less. I would always discuss the scenario with the woman and gauge the level of care required".

4.4.4.2 Working in partnership with women

Further responses to open-ended questions indicated the value of providing and maintaining woman-centred care, a central tenet of the *Midwifery Partnership Model*, as a focus during telephone triage. This was described in responses as a key priority for midwives when providing care over the telephone, and many examples were provided of how this was achieved.

"I work mainly night shift and if a woman is concerned enough to ring the ward it is usually a high priority. Early labour requires advice on coping mechanisms at home but if the woman is not comfortable with this or concerned about something it is

always better to make time to do a physical assessment, no matter how busy you are".

4.4.4.3 Value of telephone triage

Midwives identified the value of telephone triage, with written statements including the importance of telephone triage as a research topic. Additionally, midwives offered various suggestions that would assist to improve this area of practice in their own setting.

"Where I work, all the midwives working in Birth Suite undertake triage phone calls. We would all desperately like for a dedicated triage midwife each shift as phone calls can be very time consuming and difficult to communicate between the midwives working that shift when birth suite is very busy and we are all in birth rooms. We should have a dedicated triage midwife to deal with all the calls and to manage the outcome in the most appropriate manner".

The analysis of free text responses has generated a preliminary understanding of areas of importance to this sample of midwives about telephone triage. It has added further understanding in the areas of preparation for telephone triage, value of telephone triage, maintaining woman-centred care, suggestions to improve practice, and clarification of assigning time responses to scenarios. The data from the free text section together with the data from the other survey questions was able to be explored with midwives in phase two of the study.

4.5 Conclusion

This chapter has highlighted the current workplace processes, telephone triage skills, positive and negative influences that impact on midwives' telephone triage practises. These quantitative findings provided a basis for exploring these aspects, through interviews in phase two of the study. The findings from phase two are presented in the next chapter.

CHAPTER FIVE – FINDINGS: QUALITATIVE

Chapter Five – Findings: Qualitative

5.1 Introduction

This chapter presents the findings of the second phase of the mixed methods study, the qualitative component. Consistent with the sequential explanatory design, phase two involved investigating midwives' views and experiences of telephone triage. The qualitative data was collected in order to better understand and appreciate the findings from phase one of this study. This allowed the researcher to explore particular views identified from the survey in more depth, and importantly it provided participants with the opportunity to give voice to their experiences. The theoretical framework, *Midwifery Partnership Model,* was used as a formal lens and provided an overarching position on midwifery practice to interpret these findings.

As outlined in chapter three, Braun and Clarke's (2006) framework guided thematic analysis of the midwives' interviews. Four main themes each with a number of subthemes emerged from thematic analysis. *Workplace complexity* consists of three subthemes which are conceptualised as *workplace environment*, *telephone triage processes*, and *workloads and allocating resources*. The next theme, *The emerging practitioner* includes *getting it right,* and *meeting expectations*. The third theme *Ask the midwife* consists of four subthemes, *communication, interpersonal skills, individual knowledge and experience*, and *training in telephone triage*. Finally*, Risky business* includes data categorised into the subthemes: *types of risk, sources of risk*, and *managing risk*. A brief overview of participant demographics is presented followed by a detailed discussion of the four themes and their subthemes. In the reporting of the qualitative data analysis, all names used are pseudonyms.

5.2 Participants

Interviews with fourteen (*n* = 14) midwives were conducted over a period of five months (Nov 2017- Apr 2018). The interviews were conducted at a time and location convenient for the participant, transcribed verbatim and the transcript checked against the audio recording file to ensure accuracy. Table 4 provides an outline of the interview schedule including pseudonyms for each participant, and years of midwifery experience of participants. Length of the interviews ranged from 21-57 minutes, with an average of 28.9 minutes. A predetermined interview question guide (see Appendix 6) used for all interviews contained questions developed after analysis of the quantitative phase. The question guide was useful for the novice researcher to ensure all participants were asked the same questions. However, specific questions were asked if information was not previously given by the participant, for re-phrasing of questions if misinterpreted by participant, and for clarification of points by using 'could you expand on that' or 'you stated….what did you mean by that'?

Table 4: Interview schedule

	Participant pseudonym	Years of midwifery experience
1	Aliyah	4
2	Annie	5
3	Beryl	8
4	Coral	19
5	Mary	30
6	Lena	12
7	Melba	15
8	Hannah	14
9	Diane	20
10	Shae	21
11	Paige	7
12	Emily	28
13	Hollie	12
14	Sandra	5

Following 14 interviews it was determined data saturation had been achieved and a decision made by the researcher to discontinue data collection. Saturation in purposive sampling is determined when the addition of more participants does not produce new information or ideas for theme development, and new data fit into categories already established (Liamputtong, 2017; Tashakkori & Teddlie, 2016). Transcripts were analysed iteratively and following twelve interviews no new codes were emergent. A further two interviews were undertaken to determine if any new information arose, when it did not, a decision was made that saturation of themes had been achieved.

The fourteen midwives worked in a variety of settings including public, private and private practice across vast geographical locations described as metropolitan, regional, rural or remote participated. All were female and had been practising midwifery from 4 years to 30 years. Participants undertook various roles in their organisations including Unit Manager, Associate Unit Manager, Midwifery educator, birth suite midwife, and midwives who work across all/any areas of the continuum of maternity care.

5.3 Theme 1 - Workplace complexity

This first theme encompasses contextual factors that affect telephone triage. The issues identified by midwives in this study were *workplace environment*, *telephone triage processes*, plus *workloads and allocating resource*s across various practice settings. In addition to encompassing workplace issues related to telephone triage, this theme also highlights participants' views regarding how to best manage these contextual factors. Participants described a constant balancing of factors whilst performing telephone triage.

5.3.1 Workplace environment

Participants identified the physical workplace environment as a major influence on the practice of telephone triage. Telephone triage often occurs in shared spaces where midwives, administration staff, doctors and other health professionals are using the desk, telephones

and computers. Call bell systems from the women's rooms are often situated in this location, resulting in audible alerts sounding frequently. All of these elements create challenges for the midwife who is often competing with the noise of this busy space whilst on the telephone with a woman. The following participant described this:

"You do have to ask people maybe to keep it quiet, so you can actually hear the conversation". (Coral)

The midwifery workstations that are accessible to the public pose the additional problem of maintaining confidentiality and privacy for the woman telephoning. Participants highlighted that the physical environment was often a barrier to a meaningful exchange with the woman. This perception was consistent for midwives across settings: metropolitan, regional, rural, private or public. Participants provided many examples of particular environmental concerns including:

"I actually loath the setup of our ward because people standing at the counter can hear what you're saying to the women on the phone. When we answer our phone, it's not private. People sitting on the chairs waiting can sometimes hear what's happening". (Paige)

Telephones used in the maternity setting may be fixed at a workstation or portable and carried by the midwife. For midwives carrying a portable telephone, other problems present themselves. The midwife may be providing direct care to a woman or baby, or assisting at a birth and in many cases, supervising other staff. Participants highlighted that carrying the telephone means the midwife does not need to be anchored to the workstation, which is often advantageous. However, the telephone can ring at any time and whilst the midwife is busy with other matters. The following participant articulated this issue:

"If you are in a birth and the phone is ringing on your hip you can't answer it….that is annoying and I feel bad about that, and I usually try and duck my head out and throw the phone to someone else, or something….But sometimes you can't even do that, so I

feel like there is calls that we miss, they do generally ring back, but I feel like a phone call is coming through on the triage line it needs to be answered because who knows what is happening at the end of it". (Aliyah)

This highlights the interruption to working in partnership with women as the midwife cannot be fully accessible or provide support to either woman when the midwife has dual roles of direct care and responding to calls. Identifying aspects of the workplace environment that influences telephone triage was important to participants, equally the processes available to support practice also needs to be acknowledged.

5.3.2 Telephone triage processes

A significant area of concern for some midwives who participated in this study was the inconsistency in tools and processes related to telephone triage across the health sector. A number of midwives discussed various systems and supports that were either available or lacking. While some expressed the opinion that there should be guidelines to support practice in their workplace. Most participants were either unsure or unaware if their health service actually had any relevant documentation. Only a few midwives were definitive that there were no such documents available. The following participant articulated this:

"We don't really have a guideline as such, like there is no official like policy type thing". (Mary)

In contrast, some participants identified specific tools available to support telephone triage. The most commonly discussed tool was documentation to record the telephone conversation with the woman. Several examples of methods to record the telephone triage interaction were provided. These ranged from a double-sided form with specific set criteria to be checked off, to a folder or a book with blank pages dedicated to calls. Participants shared examples of how telephone triage is recorded:

"We have what we call a telephone trackers book folder … I don't think it is adequate and needs rejigging". (Sandra)

"We have the two- page form, so one page has a sort ISBAR [clinical communication acronym that stands for Identify, Situation, Background, Assessment and Recommendation] format, it's got all our advice prompts, if they get a second call, we pull that same form out and the second call is on the second page". (Melba)

Overall, participants noted deficiencies of the available telephone triage tools. Participants offered numerous recommendations to manage the current deficits they perceived with the available tools and processes. These included clear guidelines for practice, a well-designed and user-friendly record to document calls, and flowcharts or algorithms to manage common clinical presentations. Furthermore, participants emphasized the need for having agreed clinical criteria that triggers recommendation for further assessment. This was suggested as a measure to ensure consistency in practice and to prevent unnecessary presentations, as described by the following participant:

"A protocol as to when you, whether you bring the women in or you ask her to call back or that you follow along that path. So, it's just a matter of following the algorithm depending on what the situation is that presents". (Lena)

Whilst there are various tools and processes available, participants in this study emphasised that consistent processes were important, along with recognition in workload and resource allocation.

5.3.3 Workloads and allocating resources

Regardless of the configuration of the workspace or processes, participants repeatedly highlighted that midwives are often balancing the care of other women with answering telephone calls, which can be a significant challenge at times. Participants described telephone triage as an unacknowledged practice, and therefore not factored into workload allocations. The data indicates that this can be particularly problematic for the midwife based in a small rural setting. The midwife may be the only one rostered on the shift, who is managing both nursing and midwifery practice together with answering telephone calls from women in the

community. This lack of acknowledgement of telephone triage workload was voiced as a frustration by a number of participants as captured in the following statement:

"That phone call could take 5 minutes or 15 to 20 minutes, meanwhile the woman is waiting in her room, thinking what the hell? Where did she go?" (Mary)

Participants shared that this creates significant concern for them as they aim to provide quality care to women regardless of whether they are in the health service or on the telephone and yet to be admitted. The consequence of this tension for some participants is avoidance of answering the telephone, as expressed by the following participant:

"I honestly avoid the phone because if you're really busy, the last thing that you need is to be talking to someone for 10 minutes". (Paige)

For midwives in a supervisory role who manage bed and staff resourcing, when it becomes very busy, they may be unaware of the calls received and the outcomes of the discussion. The shuffling of resources to accommodate a woman presenting as a result of telephone triage, was sometimes a source of stress for midwives who have the responsibility of managing this. However, participants recognized that the midwife supervising was well placed to manage resources, as voiced by the following participant:

"Most people are instructed to pass the call on to the midwife in charge of the shift, and that's about experience, but it's also about the midwife in charge having the big picture regarding beds and spaces and who is coming and who's going". (Aliyah)

Several midwives shared that during periods of understaffing the issue of not having a midwife allocated to managing telephone calls compounds already overfull workloads. This often results in any available midwife answering the calls and exposing less experienced midwives to more intense workload pressures. This was a concern for participants, as they prefer to support the novice during triage and assist them to develop their knowledge and skills in triaging. The following statement described this:

"And if you're understaffed, you're more likely to just let junior staff handle the phone calls or they mightn't be able to find you, so they will just handle phone calls themselves". (Shae)

Participants explained that the impact of these workload demands could directly affect women, who may be given limited options of when they can attend the hospital due to staff and bed availabilities. Midwives expressed their concern, as they aim to provide an accessible service for women. One participant described this:

"Understaffing, if you're understaffed, I think you're more inclined … if you're understaffed and very, very busy, you're more likely to tell a patient to stay at home and come in a bit later". (Emily)

Participants in this study consistently asserted that a resource that would be useful, the development of a tool to record how many calls and how long the midwife needs to spend on the telephone managing calls. This was considered important in order to capture the time and resource allocation required for this service. This suggestion was particularly strong as a method to substantiate the recommendation for an allocated midwife to manage telephone triage, or to have telephone triage included in workload allocations. The following participant articulated the current lack of methods to recognise this:

"It's not taken into consideration into your workday and it's not on your Trendcare or anything like that, how many phone calls you've taken". (Beryl)*

Midwives aimed to provide quality care to women, however, workload pressures were a barrier at times. Despite these workload pressures, participants identified that having women telephone the health service is advantageous in assisting allocation of beds and staff based on calls received. Being able to perform an assessment over the telephone and provide advice allows midwives to be informed about potential admissions. When the midwife knows

[Footnote: *Trendcare is a patient acuity, workload management and workforce planning software tool used in some Victorian healthcare settings].

there is a potential admission workload, allocations can be reconfigured to suit the circumstances. Even though there are challenges, solutions were proposed by participants based on the needs of women. Suggestions included altering service provision to have an allocated midwife and a dedicated space to manage both telephone triage and physical assessment upon admission, as described by this participant:

> *"Having a dedicated triage person who has the phone all the time, does all the calls, deals with all the women that come in for assessment and having a space to do that, which we don't have either, would be ideal". (Mary)*

In particular, discussion about this recommendation consistently referred to the benefit of providing some modicum of continuity of care for women, if the same midwife was available to manage both the telephone conversation and the subsequent physical assessment. Participants discussed that women often had to retell their story to a different midwife each time they telephoned and again on admission. The advantage of having a dedicated midwife to manage calls is reflected in the following statement:

> *"When you have a chat with them on the phone, I love that then when they come in you can greet them, you know their name, you know they're coming, and you can have the room ready and everything". (Beryl)*

In this theme, participants identified the complexity of the workplace and the organisational factors influencing practice and encroaching on midwives' partnership with women. Participants provided detailed insights into these issues whilst offering considered solutions to improve the service. Recognition of workplace factors in design of workspaces and allocation of workloads was seen as essential. Addressing these workplace factors was understood as important for the midwife triaging and would augment skill development of the emerging practitioner.

5.4 Theme 2 - The emerging practitioner

How midwives see themselves as emerging practitioners in relation to development of their telephone triage skills, is explored in this theme. Participants recounted their memories of the first telephone calls from women they triaged, sharing the nervousness they experienced or their decision to escalate the call to a more senior midwife. Midwives described the importance of *getting it right* and *meeting expectations*.

5.4.1 Getting it right

Getting it right reflects how participants progress from novice to expert and the requirements to attain expertise in telephone triage. The participants described development from their initial nervousness to being confident, which consistently hinges on '*getting it right'*. This was explained as giving correct advice resulting in good outcomes for the woman. Through experience, the midwives shared how their confidence in telephone triage grew. The following account was typical of how the majority of participants described how they felt about their first call:

> *"Very, very, very nervous, and even if you put the phone down and having made whatever decision, you know, anxious about whether or not you've made the right decision". (Annie)*

Handing the phone call over to another midwife or putting the woman on hold to check with another midwife featured strongly, as described by Melba:

> *"I was very green at answering the calls to start with; my first phone call was handed over".*

While most participants managed these calls on their own, some had support during these initial calls as a newly qualified midwife.

> *"I had a very experienced midwife sitting beside me and I would write notes as I was talking to the woman and she would guide me that way". (Hannah)*

Participants compared these earlier recollections with their current practice and discussed what had changed over time. An improved ability to draw relevant information from the woman was identified by participants as significant for determining the best course of action, which in turn enhanced confidence. Shae reflects this:

"I am not nervous at all about answering the phone now, I feel like I can essentially pretty much deal with whatever comes my way on the phone". (Shae)

This development in knowledge and skills are important factors for independent professional midwifery practice. Midwives described developing their own strategies that enabled them to *get it right,* as one participant explained:

"I'm probably a lot more methodical in my approach, and I have a little tick box in my head where I start and where I end the phone call. So, yeah probably a lot more thorough now I would say". (Paige)

Participants indicated that over time their confidence grew. However, even when they had significant years of midwifery practice, *getting it right* could be a challenge at times and this could undermine confidence. If anxiety crept in, participants described being more cautious. Emily described how this anxiety could lead to a heightened need to get the advice right for the best outcomes:

"But look there's still, definitely still times that you wonder whether or not you've made the decision, the right decision".

Further, during challenging situations most midwives described two common strategies for managing uncertainty. Firstly, they would bring the woman in for physical assessment when they could not get a clear picture of the presenting problem from the woman. Secondly, the midwife would call the woman back within a short period of time. Midwives utilised this strategy when they felt that information was missing, the initial decision or advice may be incorrect, or they had access to the woman's history after the telephone call

with key information in the history having a bearing on the decision. Many examples of this strategy were offered including this one by Hannah:

"If I think I haven't made the right decision, or I haven't got all the information I'll phone back and ask again".

Another point of discussion was that even after considerable time managing telephone triage these challenges to confidence could re-present at any time. For some there is a wavering in confidence based on their previous professional experiences. One participant regarding the ebb and flow of confidence made the following statement:

"As I've gotten older, I've gotten [long pause] I think more about things and that's not always a good thing". (Annie)

For some, the responsibility of managing telephone triage too early in their careers was viewed as not ideal and stressful. One midwife captured the essence of this in the phrase "sink or swim". Many participants expressed concern that beginning midwives need to learn to manage telephone triage through a similar process, with little to no preparation. There were very clear views from some participants that beginning midwives should not be placed in a situation where they have to manage telephone triage; it should be left to experienced midwives. This was expressed through statements of concern for the beginner, such as:

"I think they are thrown in the deep end, and they're asked sometimes to deal with very complex situations". (Hollie)

The notion of unsupported practice in telephone triage for the beginning midwife generated varied discussion from participants. There was clear acknowledgement that telephone triage is an important aspect of midwifery practice and triage had implications when working in partnership with women and outcomes for women if not performed well. This was discussed in terms of protecting the inexperienced midwife and the potential outcomes for the woman telephoning, as indicated by one participant:

"Very junior people would answer the phone and you'd think, ooh, and you're just kind of casually hanging around listening to make sure that they get all the information. Without trying to make it obvious that you are listening, but at the same time, you have their best interest and the women's best interest at heart that they do get it right". (Diane)

A number of participants in this study raised the question of when midwives develop the necessary skills to manage telephone triage. There emerged a tension for participants between supporting the development of skills while conversely expecting novice midwives to leave telephone triage to those more experienced. Despite these concerns, midwives tended to agree that most novice midwives were cognisant of their limited experience and would usually seek advice if unsure, as voiced in the following response:

"A junior midwife, they will, they are encouraged to, and they generally do - seek advice if they are not 100% sure of what is going on, on the phone". (Mary)

Over time, midwives develop strategies that improve confidence in providing advice and resolve the "sink or swim" feeling. Many midwives who participated in the interviews raised concerns for new midwives and the expectations to be met in this area of practice.

5.4.2 Meeting expectations

The second subtheme categorised under *the emerging practitioner* relates to how the midwife meets expectations. These perceived expectations could originate from the woman, colleagues, the profession or workplace, along with the midwife's self-imposed expectations. The workplace setting often imposed a sense of expectation on the midwife's behaviour in regard to telephone triage. Participants described how their management adapted to the particular setting, and the setting could influence confidence in professional judgement. This was most evident for midwives who had worked in varied practice settings. From the midwives' reflections, how they respond in a large public metropolitan hospital may be different from a rural or private hospital setting. For example, in the private hospital setting

individual obstetrician's preferences may be expected to be followed, which may differ from the midwife's professional view. However, the participants claimed that midwives usually feel obliged to follow the obstetrician's preferences, as illustrated below:

"Midwives will take a call and then tell a woman that they will call the obstetrician and then call them back". (Annie)

Some participants viewed meeting organisational expectations as an encumbrance to their communication and rapport building with women when undertaking telephone triage. For example, a number of participants discussed that any woman phoning for the third time regardless of the reason is to be invited to attend the health service for assessment. Although there is no policy underpinning this 'third rule' practice, midwives indicated feeling pressure to follow this workplace expectation, which may be contrary to the midwives' assessment and professional judgement, and challenges the notion of midwifery as an independent profession. Conversely, there was recognition that having this 'third rule' practice provides surety that women were not unnecessarily being put off from presenting to hospital if they had called repeatedly with concerns. This was often viewed as a valid reason for having this practice in place, as stated by the following participant:

"On the third time and date, the woman is always invited in. So, she rings three times, she comes in for a check. So, that's to knock out those that keep getting put off, to actually bring them in". (Coral)

Internally imposed expectations of the midwife featured strongly in relation to being accountable for decisions. This was particularly evident where the midwife had faced an unfavourable experience. Participants stated that confidence levels could decline as a result. One midwife summarised her previous experiences on her decision-making:

"That situation can then make you go, 'oh next time', yeah, being really mindful of that next time if someone rings in". (Paige)

The woman who is telephoning also has expectations and these may influence the midwives' response during triage. Participants perceived that pregnant women expect a telephone triage service that is accessible and where the midwife listens to them. The woman who was particularly anxious or upset was highlighted as having additional needs that are not easily met via telephone assessment. At times, this would result in the midwife bringing a woman in for assessment for something that would usually be managed over the telephone if the woman were not anxious or upset. An example of the influence of the perceived expectation from the woman is evident from the following response:

> *"In this particular setting I would be more inclined to bring a woman in and just assess her and that's potentially a lot of that is driven from the woman herself, because of their expectations in this setting…those women can be quite anxious so it's as much to allay their anxiety". (Lena)*

Theme two, *the emerging practitioner*, captures the important concepts related to transitioning from novice to expert, and the factors and expectations that impact this process. Through their reflections, participants offered advice for future midwives and expressed concern for the novice starting out. Guidance for future midwives was to invite the woman in for assessment or call her back if information was not initially gathered and there were concerns about advice provided. Emerging from the data was participants concern that there is no structured process to introduce novice midwives to telephone triage. There was clearly a sense of protecting the new midwife as well as women telephoning. Meeting expectations can be challenging and at times are incongruent with the midwives own professional judgement. However, acquisition of specific attributes, skills and knowledge develop as the midwife gains expertise in telephone triage.

5.5 Theme 3 - Ask the midwife

Ask the midwife describes the concepts that emerged from the data relating to the attributes, skills and knowledge required for telephone triage. This was frequently included in discussion by the midwives in this study. This theme portrays midwives' views regarding *communication*, *interpersonal skills*, *individual knowledge* as well as *training in telephone triage*. Resoundingly, all midwives participating in this study discussed that experience was of primary importance to develop competency in telephone triage. Although participants were not sure about how much experience resulted in 'being experienced', they all described this as important. Participants identified that training in specific aspects of telephone triage would be of benefit to novice midwives and offered suggestions on how this could be achieved.

5.5.1 Communication

All participants described competency in communication as necessary for telephone triage. In particular, the skill of listening featured dominantly. This was identified as important in order to concentrate on the call, manage distractions, and to hear the woman's story. Seen as equally important, was the ability to interpret the woman's story accurately and have various ways to clarify components of her account. This requires the midwife to have the skills and knowledge to ask appropriate questions and adjust their communication to construct a clinical picture of events from information obtained in order to facilitate shared decision-making with the woman. The following participant described some of these elements:

> *"Communication, how to ask questions, how to ask the same questions three or four different ways so that you're getting a wide view of the answer that you're looking for or the information that you're looking for". (Diane)*

Likewise, participants described how they listen not only to the woman, but also to other sounds that might add to the clinical picture they are building. For example, the labouring woman may have a contraction whilst on the telephone; this allows the midwife to

hear how the woman responds and gain an approximate estimate of the length and frequency of her contractions. Midwives described the need for intent listening in order to gain as much information from the woman or caller as possible, as the example below highlighted:

> *"You can't see the person so you are going by the sound of their voices or you know…you are listening to what they are doing when they have a contraction, and maybe other cues about where they are, in a car or you can hear other sounds in the background". (Mary)*

Midwives also reflected on how well women may or may not communicate. They discuss that the telephone interaction is also dependent on communication of the caller, and how well they are able to describe their situation. Participants reported that, at times, the woman may not give clear descriptions, or they may be unsure how to articulate their circumstances. Additionally, some midwives asserted that women can struggle to identify their needs and therefore patience and skills in active listening are needed, as illustrated in the following example:

> *"Sometimes it takes them [women] quite some time to tell you what actually the problem is, they go on with a lot of stuff before they get to the point, so you have to be able to just listen". (Aliyah)*

Sound communication skills are important for establishing active participation from women and providing opportunity for shared decision making. The ability to adapt communication to the situation is viewed as important, which is further enhanced by having comprehensive interpersonal skills.

5.5.2 Interpersonal skills

Good interpersonal skills and the ability to empathise with women were identified as being central to telephone triage. Participants' discussion of interpersonal skills were centred on midwives' approach toward the woman whilst on the telephone. Poor interaction with the woman was explained in terms of how the midwife answers the telephone, and how questions

to the woman are approached. Participants shared examples of midwives being brash or disinterested, and lacking the ability or desire to build rapport with the woman. The following participant discussed telephone manner:

> *"The manner that they speak to people on the phone, they can be…some people can be very abrupt and matter of fact, they are probably busy and that comes across on the phone, like, they don't have the patience to listen". (Hollie)*

Some participants asserted that this results in the woman not disclosing all relevant information, or not feeling welcome to telephone or attend the health service. This was a disappointing aspect for participants and one they wished to avoid. The following participant voiced this:

> *"What we say to a woman on the phone and the way we approach the phone call can impact on whether that woman feels comfortable disclosing information or not, so I think that's really important". (Beryl)*

The ability to listen empathetically was identified as central to good telephone triage practice by a number of participants. This was described as the midwife's ability to understand from the woman's perspective, placing value on what she has to say and the reason for her call. These attributes are consistent with the *Midwifery Partnership Model* where women seek trust, respect, equality and openness from midwives. The following quote is a typical example of the importance participants placed on empathy:

> *"Highlight to all midwives that whilst it's what we do every day, that for the women on the end of the phone, it's not what they do every day, so we need to be…make sure that we have a high level of empathy for these women". (Lena)*

The data indicates that both well-developed and poor interpersonal skills can affect interactions with women on the telephone. Knowledge and experience can also influence telephone triage.

5.5.3 Individual knowledge

Midwives in this study described a wide variety of reasons that women telephone a midwife. They recognised a need for the midwife to have the appropriate clinical knowledge for managing telephone triage. Knowledge was viewed as important to allow the midwife to be adaptable to any situation that presents itself during the call. Interestingly, a large repertoire, rather than specific knowledge was described as essential. Gaining the required knowledge was usually generated through clinical experiences as described by this participant:

> *"I think you need to have a certain amount of experience. I am not sure what that amount of experience is, but you do need to have that. Just to have that sort of background knowledge of what things are potentially dangerous and what things you can say don't worry about it…but, yeah I think it is just, just knowing". (Mary)*

As a final point, these midwives disclosed that it takes a long time to develop sound telephone triage skills. One participant stated:

> *"This skill can need developing five years out". (Coral)*

Given key attributes for telephone triage can take a long time to develop, participants advised new midwives need support in developing these attributes through appropriate training opportunities.

5.5.4 Training in telephone triage

This subtheme explores the notion of training for telephone triage. Most participants revealed that they have not received formalised preparation to undertake telephone triage. Whilst they had developed the necessary attributes, skills and knowledge, the midwives suggested some minimum training would be useful for beginning practitioners. Participants offered several suggestions on both topics and methods to provide the training. Topics identified were guiding principles of practice, processes, communication styles, professional demeanour, categorising calls into non-urgent and urgent presentations, management of

challenging calls, and documenting calls. The following participant explained some of these aspects:

"To be trained in, just reiterating the reasons why women have to come in regardless, teaching them why getting the women's history is important". (Shae)

The main feature of training was the importance of communication over the telephone. Several aspects of communication, such as communication styles that are effective in gathering a history and being able to adapt questions to suit the caller were suggested. Additionally, participants spoke of the need to check back with the woman that the information they have gathered is correct, and to check that the woman is satisfied with and understands the advice given. The following participant expressed this:

"Ask them if they're happy with the plan we make". (Coral)

Inviting the woman in for assessment was highlighted as important in managing difficult telephone assessments. Examples of when assessment can be difficult included, when English was not the woman's primary language, the woman or partner calling is stressed, or there is a complex presenting history. Participants were keen for novice midwives to know that inviting the woman in for assessment is a good strategy. They also emphasised that handing the call on to a more experienced midwife is appropriate if it is beyond their capability or scope of practice, as illustrated by Hannah:

"If someone's taking a phone call, and they feel it's beyond their experience, they should be able to say, hold on a moment, I'm just going to get a more experienced member of staff to talk to you. I think that alone shows maturity, it shows learning as well". (Hannah)

This use of knowledge, skills and self appropriately in practice are important stages in development of independence as a midwife. There were many mentions of specific training on how to document telephone calls and the importance of doing so. Participants frequently remarked that orientation to telephone triage was brief or not done, and documentation was

not specifically covered. Many participants expressed frustration with poorly documented phone calls, with the following statement from one participant:

"Filling out their documentation would be great. I've often come along and found forms that haven't been filled out properly". (Sandra)

Stemming from discussion of training topics, were suggestions of training delivery methods. The main proposal was to have junior midwives sit beside more experienced midwives and listen to how they manage calls, then swap roles, so that the experienced midwife listens as the junior midwife takes the call. This method was seen as quite achievable in the busy maternity environment. Other training format suggestions included online scenarios, case studies, reviewing triage outcomes or types of calls at professional meetings, peer-support mentoring and role-playing, as suggested by this participant:

"Even if it was a role-play, just something like that so that it gives them a feel of it in a safe environment, without too much stress, so that they can actually learn to get their thought processes focussed on what they need to ask". (Hannah)

Core training in telephone triage encompassing communication, interpersonal skills, empathy and a sound knowledge base were all attributes identified by the midwives. Advice from participants is for new midwives to be supported to develop these attributes through appropriate training opportunities. Being well prepared and knowing expectations for telephone triage were perceived ways to enhance confidence, reduce risk, and improve the experience for women.

5.6 Theme 4 - Risky business

This theme reveals participants views and perceptions regarding the need to identify risk during telephone triage. Participants identified many types of risk, including professional, legal and clinical risk. Midwives reflected on their concerns about risk and the need for it to be appreciated and managed to ensure safe midwifery practice. For example, significant areas of

concern included the potential for decisions to create legal or professional risk, providing advice that may lead to clinical risks for the woman, limitations of the telephone, and tensions imposed by women choosing not to follow the midwives' advice. Participants reveal types of risk, sources of risk, and ways to manage risk.

5.6.1 Types of risk

Legal and professional risk was a major source of concern for most interviewees. Described by various participants as the potential for legal or professional consequences from advice provided during telephone triage. The midwives spoke of the burden of identifying and managing clinical risk over the telephone. The following is indicative of participants' discussion of risk:

> *"That's a lot of weight to carry on your shoulders, to say 'That was the right decision at the time' if something happens to a woman and her baby, and you've made that call over a telephone call". (Annie)*

Further, numerous participants indicated that they felt the need to protect themselves both legally and professionally when triaging and giving advice, as articulated by the following midwife:

> *"Because you've always got that litigation thing, court, hanging over your head more and more so no one wants to be caught out, no one wants to miss anything". (Emily)*

Midwives reflected on how their past clinical experiences can influence how they perceive and respond to risk. Participants that had experienced a difficult outcome stemming from telephone triage stated that they tended to be more risk averse than their peers. The following midwife evidenced this:

> *"I've changed my views over the years, and I guess with having been involved in situations that have adverse outcomes, that only has to happen to you once and you become very risk averse". (Lena)*

In addition, participants indicated clinical risk as a concern during telephone triage, described as situations that may result in the woman or baby having a less than optimal outcome. Midwives described that inviting a woman into the hospital early in her labour placed her at increased risk of having obstetric interventions. This notion of risk was described in terms of the 'clock ticking'. However, there was diversity of opinion around this. Whilst there were participants who thought coming to hospital too soon was a risk for intervention, others believed staying at home could create greater risk. It was suggested by participants that the individual midwife's notion of risk could influence advice provided to the woman. The following is an example from one participant of the balance between keeping the woman home with preventing intervention:

> *"If you get somebody in you've got, there's always the thought too that you've got the clock ticking, then intervention might start coming into play". (Annie)*

Conversely, some participants were concerned with not placing the woman at risk by advising her to stay at home. The following statement is indicative of weighing this up:

> *"Telling women to stay at home and not inviting them in, there's always a risk that you don't know what's going on, that the woman's not describing her symptoms properly, yeah, it's always risky over the phone. That's why more and more they're getting invited in, more often than not for the smallest thing because you don't want to miss anything". (Shae)*

The 'clock ticking' was also used to describe the challenge of managing travel distance to the hospital with the length of time the woman could safely remain at home. In rural and remote settings, women were often invited in for assessment as soon as possible to determine a plan of care and to manage any clinical risk. Participants remarked that these health settings were resourced for low risk women only, and that they would need to transfer any woman beyond this capability. There were also concerns about getting this timing right to avoid the

risk of the woman birthing either at home or on the side of the road unassisted. A participant from a remote health service reported that:

> *"Most people are asking them to come in here, because we are so far from anywhere else, you want to get onto something really quickly here". (Melba)*

Whilst providing telephone triage, participants in this study reflected on the potential clinical, professional and legal risks. The data indicates that past experiences and the burden of risk may influence decisions made when handling the many challenges of telephone triage.

5.6.2 Sources of risk

This subtheme captures the challenges and limitations of telephone triage raised by participants as a source of risk. In particular, the most significant sources of risk relate to either inadequate communication, unclear reasons for the woman to telephone the midwife, or taking a call from a third party. Another source of risk identified was that despite advice from the midwife, a woman might choose not to follow this advice. There was clearly a sense of worry and concern about the woman, as well as potential repercussions for the midwife.

Specific communication challenges described by participants were calls from women whose primary language was not English or those with a limited vocabulary or comprehension. In order to provide advice, the midwife needs to be able to engage with the woman to identify the reason for the telephone call and take the woman through a series of questions to gather enough information to provide appropriate advice. The following participant described the risk when the information from the woman was difficult to obtain:

> *"If you're speaking to a woman that isn't a good communicator, sometimes it may be difficult to get a good idea of actually what's happening, so therefore you might give the wrong information over the phone based on what she's not telling you". (Beryl)*

Participants also highlighted that not speaking to the woman directly was a potential risk. Descriptions of how the woman's partner may telephone on her behalf creating a three-

way conversation between the partner, woman and the midwife. It emerged that the midwife is often unable to hear the woman's responses and is reliant on the partner to relay the messages accurately. Midwives stated that they could only assess on what they hear and what they were told, as explained in the following statement:

> *"When the partner rings, talks, and then you're having a three-way conversation that every question you ask, he repeats to her and repeats back, and I find that that's difficult". (Shae)*

A significant area of concern for participants was the risk that eventuates when the woman does not follow the advice they have given. These tensions include concern for the woman, and the midwives' sense of vulnerability to professional or legal consequences. There may be a dichotomy between what a midwife and a woman telephoning perceive as risk, and correspondingly the amount of risk both are willing to take. The following participant provided a very specific example of this:

> *"Sometimes, they will just ring, and they tell you this thing and you say, 'Well, you need to come in' and then they say, 'oh, no I'm not coming in'. That puts you in a really difficult position as the midwife answering the phone". (Diane)*

When the woman chooses not to follow advice from the midwife, participants described feeling uneasy with this choice, and for some quite anxious that the woman is potentially exposing herself to unnecessary risk. The concept of women not heeding advice featured throughout participant interviews, and midwives raised concerns about balancing risk with shared decision-making and the woman's self-determination. Participants wondered where their responsibility begins and ends in these cases, as expressed in the following statement:

> *"You can't do anything about it and if she has an adverse outcome are you going to be responsible for that? You can't physically get into your car and go and pick up the*

woman, if she's not taking responsibility for her own care, so that's a really difficult one". (Beryl)

A further limitation of telephone triage outlined by participants as posing risk was the inability to use all senses to assess the woman. Only having the sense of hearing was recognised as a barrier for some telephone consultations. The risk identified was that it is more difficult to provide the right advice when not able to use all five senses. This was understood to place the midwife at greater risk of error, as discussed by the following midwife:

"Because we can't really see what's going on, when you can actually visualise someone you make a much more thorough assessment, it's like doing an assessment blindfolded". (Melba)

Participants identified challenges and limitations of telephone triage such as inadequate communication, third party calls, inability to use all senses during assessment, and women not following advice given. The acknowledgment of challenges leads to strategies participants use to manage risk.

5.6.3 Managing risk

This subtheme encapsulates the strategies that participants had used to manage risk. Overall, participants noted that while they could not mitigate all risk, they could reduce it with various approaches when managing the telephone call. Some midwives described that when they felt unsure or uneasy about a situation or decision, they would ask the woman to come in for further assessment. This was described as both a benefit for the woman and midwife, as highlighted in the quote below:

"There is inherent risk, but generally, I think if we are not sure about a situation, if we can't work out what is happening over the phone, which is fairly frequent, we just get them in and check them". (Mary)

Whilst this strategy was common, there was also recognition that some women may unnecessarily attend the health service, which could be disrupting for her. For some participants this did not sit well, however, it was noted to be a useful trade-off in ensuring the safety of women, as illustrated by the following participant:

"We tend to always err on the side of caution, so we probably have a lot more people coming in than really need to come in these days because I think we're all pushed to sort of err more on that side of caution". (Sandra)

The issue of women not heeding advice stemmed considerable reflection. Strategies to manage these situations were important to participants. The first strategy was to repeat information for the woman and provide clear information about potential risks. The second was to check with the woman that she has understood the advice and potential risks, which was seen as particularly important when the woman expresses that she may not follow the advice. This was articulated:

"Without scaring but giving them clear information about the potential risks". (Coral)

Another strategy was to ensure that the telephone conversation was documented so that the midwife had evidence of the conversation and advice given. This was referred to as 'covering yourself' and indicated the legal and professional risk the midwife felt vulnerable to. It was important to participants that they had a record of advice given, together with the woman's intentions of following the advice or not. Many participants voiced this:

"If they're not following the advice you're giving them that needs to be clearly documented". (Diane)

Conversely, when discussing risk management, several participants indicated that midwives were at risk themselves of 'normalising' events during triage and therefore may overlook something that could be a factor of risk for the woman. They worried that midwives may ask the questions they only want answered rather than questions that may indicate risk factors developing. These participants noted that having some agreed criteria for all telephone

calls would assist to manage this. The following participant provided an example of caution over normalising events:

> *"And making sure that you're not overlooking something just because you want everything to be normal". (Aliyah)*

Midwives who were interviewed asserted that there is inherent risk with telephone triage. Participants recounted key issues with providing advice to women regarding timing of admission that balances their arrival at the health service with clinical risk reduction. Key issues with timing were described that are perhaps unique to midwifery practice. Professional and legal risk considerations are important factors in clinical decision-making and managing the challenges of telephone triage. The associated risks and particularly the midwives' sense of vulnerability when risk is outside of their control have emerged from the analysis of the interviews.

5.7 Conclusion

This chapter has highlighted the key findings of the thematic analysis of the participant interviews. These findings assist in developing an understanding of the barriers and enablers of telephone triage practice. Communication, interpersonal skills, and sound clinical knowledge are essential for telephone triage, with suggestions for novices to have some level of training. The workplace can impact practice when workloads do not include telephone triage, and busy shared workspaces are noisy and challenge the privacy of the caller. There are risks associated with telephone triage, and midwives have developed strategies to help manage these risks. The following chapter presents an in-depth discussion that integrates both the quantitative and the qualitative findings of the study.

CHAPTER SIX – INTEGRATIVE DISCUSSION

Chapter Six – Integrative discussion

6.1 Introduction

This study explored the views, experiences and attitudes to telephone triage from a variety of midwifery perspectives. This chapter provides a discussion of the key findings that arose from analysis of both the qualitative and quantitative data. These findings are considered in the context of the existing literature that examines the practice of telephone triage, and with the lens of the *Midwifery Partnership Model* theoretical framework.

The aim of this study was to conceptualise midwifery practice of telephone triage, as it exists in Victoria, Australia. Despite the importance of this form of assessment and communication in maternity care, there has been no other empirical research published on this topic, with previous research on telephone triage largely concerning nursing practice. The two-phase mixed methods approach used in this study allowed for integration at two points. The first point was where questions for phase two (interviews) were generated from phase one (survey) findings, and the second, during the integrative discussion of findings. A worked example representing the process of integration of these findings has been provided in Appendix 7. The integration and interpretation of findings from both phases is discussed under the following headings: contextual factors of midwifery telephone triage; skills central to telephone triage; challenges of telephone triage; and telephone triage as an unacknowledged midwifery practice.

6.1.1 Setting the Scene

Used extensively across the maternity sector, telephone care and advice are foundational in midwifery practice (Clarke, Bowcock, Walsh, & Johnson, 2012; Nolan, Morgan, Pickles, Haith-Cooper, & Phipps, 2007). Women seek advice and support across the childbearing continuum, with the commencement of labour being the most common reason

to call the midwife (Nolan et al., 2007). Midwives in this study welcomed this means of providing care to women and saw many advantages to its use. The annual rate of approximately 82,000 births in the state of Victoria (Australian Bureau of Statistics, 2018) indicates the potential for midwives to manage a large volume of telephone calls each shift worked across the 24 hour, 7 day maternity services. Additionally, many calls are directed to maternity services outside business hours when antenatal clinics are closed. This study revealed that dedicated telephone triage services within Victorian maternity settings is scant, meaning any midwife could be responsible for calls. This finding indicates that midwives spend considerable time caring for women both in person and via the telephone. This study also highlighted that all midwives, regardless of work area, must be able to respond appropriately to calls. Other important contextual factors influencing midwifery telephone triage were revealed during this study.

6.2 Contextual factors of midwifery telephone triage

The data revealed that many contextual factors influence midwives' behaviour when managing telephone triage. The physical workplace environment, routine processes, workload considerations and allocation of resources all influence telephone triage practices. Nurses have previously highlighted the effect of workplace environment on telephone care (Reinhardt, 2010; Stanfield, 2015). A recent study of midwives and the practice environment found that a supportive work environment is one that facilitates the midwifery model of care of working in partnership with women (Thumm & Flynn, 2018). In the current study, findings indicate that there are very few dedicated areas for telephone triage. Most midwives are managing this practice in shared clinical spaces often situated in areas accessible to the public, such as the midwives' station, and without direct access to women's notes. Several problems arise, such as contention with noise from multiple sources including call bells, other telephones, staff conversations, and visitors. Noise is not the only problem in a public space, maintaining caller privacy is also challenging.

Maintaining caller privacy in a public space is difficult, particularly for the known midwife in a small rural healthcare setting. Additionally, midwives carrying a portable phone within the health service or community could be providing direct care to other women when the phone rings. This is problematic as it diverts attention away from the woman the midwife is caring for, and the midwife needs to prioritise the call or the woman's care. This situation demonstrates the difficulty midwives have in working in partnership when models of health service delivery hinder rather than facilitate meaningful engagement with women. A recent study exploring women's views of care highlighted the barriers of working in partnership and providing woman-centred care (Boyle, Thomas, & Brooks, 2016). Difficulties stemmed from organisational influence, which limited information sharing, affected decision making, does not meet women's needs, and results in dissatisfaction with care (Boyle et al., 2016). These findings are consistent with themes in the present study, with concerns that distractions impact on care provided to women.

Crucial information can be missed when environmental distractions affect the midwives' ability to hear the woman and concentrate on the ensuing discussion. Telephone triage conducted in noisy open spaces where calls could be overheard has previously been identified as unfavourable (Clarke et al., 2012; Reinhardt, 2010). A systematic review of the literature examining emergency nurses' clinical decision-making in triage found that the environment of care could influence accuracy of decisions made (Stanfield, 2015). This environment of care includes nurse autonomy, physician influence, unit culture e.g. fostering teamwork and good communication. In addition, other research has revealed that feeling observed during triage can influence practice, affect decisions made or information shared with the caller (Ponsiglione, Ippolito, Primario, & Zollo, 2018; Spiby, Walsh, Green, Crompton, & Bugg, 2014). Midwives in the present study reported similar influences, where they felt they needed to justify their decisions, particularly if they were observed during the telephone call. A study of nurses' decision making during triage in emergency departments in Italy described

the work environment and social context as influential on nurses' triage practices (Ponsiglione et al., 2018). The factors reported in this study included the workplace culture, tacit rules, collaboration, and communication with peers as important to the quality of triage. Other recommendations from the literature propose designated telephone triage workspaces, to assist with caller assessment which will lead to improved accuracy of decisions or advice provided (Kaakinen et al., 2016; Reinhardt, 2010). Under the principle of woman-centred care, the Nursing and Midwifery Board of Australia (2018) states that midwives should document and report any concerns about the practice environment compromising the health and safety of women. Whilst self-reported in the current study, there is a need for further exploration of organisational and environmental factors effect on midwifery triage practises. This would further support the recommendation from participants who proposed dedicated workspaces or changes to the working environment for telephone triage.

The potential for phone discussions to interrupt care for women already in the health service was concerning to midwives in the present study. Particularly evident in settings without a dedicated telephone triage midwife or service, several participants stated they would avoid the telephone or delay admission of the woman in order to manage these competing demands. This is consistent with Eri et al. (2011) study of midwives' communication priorities and strategies with women in early labour, who also found these tensions reported by midwives. The impact of calls to clinical areas has not been explored in depth in the literature. However, one study in a rural health setting found there was no formal recognition of nurses increased workloads when they were managing both telephone calls and inpatient care (Knight et al., 2015). Including telephone triage in midwifery workloads may reduce this competing demand and improve care of women in the health service and via the telephone.

The result of juggling these competing demands is difficulty in maintaining quality of care or advice in partnership with women via the telephone (Clarke et al., 2012; Eri et al.,

2011; Weavers & Nash, 2012). Furthermore, the woman's experience of the call may be negative if the call is rushed or the midwife is not fully attentive. Studies exploring women's experiences of telephone communication with midwives have found that women value a midwife who takes time to listen, is respectful, friendly, allays anxieties and gives clear advice (Beake et al., 2018; Eri et al., 2011; Green et al., 2012). A similar finding by Weavers and Nash (2012) who reviewed early labour services in a hospital in England, found that women felt confident and reassured, valued quality information from midwives, and appreciated speaking with the same midwife during subsequent calls. This resonates with the findings from this study that indicate midwives find navigating the competing demands challenging. Heavy workloads may limit midwives' ability to form a working relationship with the woman on the telephone and meet her needs. In a qualitative study conducted in the United Kingdom exploring women's experience of working in partnership with midwives, found that heavy workloads limited time midwives spent with women (Boyle et al., 2016). This resulted in women only having their medical rather than their emotional or psychosocial needs met during the exchange, women did not ask questions, and midwives only sought responses about medical aspects of the woman's pregnancy (Boyle et al., 2016). These competing demands challenge partnership working, particularly achieving equality in decision-making, and care may not be consistent with individual women's circumstances, values or preferences. In addition to these competing demands midwives that are also responsible for organisational operation must manage this together with the resources of the maternity service.

The present study revealed that the additional responsibilities of the supervising midwife, such as managing beds and staff, encroach on these midwives during telephone triage. Overseeing and allocating resources are additional responsibilities of the midwife in a supervisory role. These resources include the beds and midwives available for care if a woman is admitted to the health service. This is consistent with studies of nurses and telephone triage, where nurses tried to achieve a balance between resources and the caller's needs

(Huibers et al., 2012; Knight et al., 2015). This awareness of limited resources has also been referred to as 'gatekeeping' in studies of both nurses and midwives (Kaminsky et al., 2017; Spiby et al., 2014). In the present study there was another element described that the supervising midwife needed to consider. If numerous midwives take calls, this can also present a difficulty for the supervising midwife, as there is a possibility, they are unaware of the outcome of the discussion. This has the potential to place significant strain on the supervising midwife who needs to reallocate resources if there is an unexpected admission. There is a need for the establishment of clear reporting lines or flagging of new admissions to counteract this problem in settings where any midwife responds to telephone calls. Care needs to be taken not to expose women to these organisational constraints as it may have an effect on her experience of the service.

Consequently, most midwives in this study were mindful not to reveal their resource considerations to women on the telephone. However, not all midwives are attentive to this and may tell the woman 'there are no beds' or 'we are really busy'. A systematic review of qualitative evidence about experiences of early labour care found that women's anxiety increased when the workload pressures of the midwife were conveyed to her (Beake et al., 2018). Previous work investigating midwives priorities when communicating with first time mothers in labour found for some midwives answering calls was burdensome as it disturbed their work (Eri et al., 2011). The midwife may have a limited understanding of the impact of sharing workload pressures with women. Women's views of telephone triage advice were not measured in the current study. However, other studies report a reduction in women's satisfaction when the woman feels the midwife is not listening or providing clear advice (Beake et al., 2018). Comparably, women who reported satisfaction experienced good communication from midwives who showed an interest in them (Beake et al., 2018). To prevent these effects on the quality of telephone triage, midwives need organisational support to resolve the contextual factors that put pressure on the quality of the telephone exchange

and constrain women's choice in care options. Telephone triage being complex and challenging requires specific skills.

6.3 Skills central to telephone triage

Knowledge and experience, communication and interpersonal skills, and an ability to empathise were identified in this study as core skills necessary for telephone triage and fundamental to working in partnership with women. Well-developed communication skills were specifically emphasised by participants. Early studies investigating nurses and telephone triage have observed the professional expectation for clinicians to have these skills and adapt them readily to the telephone. However, such skills need to be taught as they do not occur naturally (Car, Freeman, Partridge, & Sheikh, 2004; Rutenberg, 2000). More recently, research examining telephone triage practices of nurses and physicians also identified the need for excellent communication skills (Derkx et al., 2009; Huibers et al., 2012; Johnson et al., 2015; Rutenberg & Greenberg, 2014). Ideally, communication should be person-centred, with effective questioning skills, active listening, rapid rapport building, and a polite, attentive and empathic demeanour (Johnson et al., 2015; Kaminsky et al., 2017). In particular communication skills need to be well developed to overcome the limitations of care over the telephone.

Skills used during face-to-face interactions are not necessarily transferrable to the telephone, due to the limited sensory input (Johnson et al., 2015). A meta-ethnography of qualitative research about nurses' experiences in telephone triage, found that new communication skills developed in response to telephone triage (Purc-Stephenson & Thrasher, 2010). Other studies of telephone triage have found that sophisticated communication skills are required and training in these skills can be effective in improving quality of the exchange (Ernesäter et al., 2016; Johnson et al., 2015; Kaakinen et al., 2016). This is consistent with findings in the present study that found the main communication skills were active listening,

the ability to adapt questions and elicit further information, and empathise with the caller. These communication skills when effective are central to establishing a reciprocal partnership between a woman and midwife and enabling self-determination (Nursing and Midwifery Board of Australia, 2018). For the midwife commencing telephone triage these aspects of communication should be emphasised during education or graduate orientation.

Maintaining appropriate communication and interpersonal skills could be achieved with review of communication competence. To accomplish the inherent principles of the *Midwifery Partnership Model* of equality, reciprocity, negotiation, trust, and shared power requires effective communication between the midwife and woman (Pairman et al., 2019). There are several methods developed specifically for achieving communication competence in telephone triage that allow for independent or self-assessment of skills (Derkx, Rethans, Knottnerus, & Ram, 2007; Graversen et al., 2019; Johnson et al., 2015). Communication competence is defined by tasks that are specific to telephone advice care, such as effective questioning skills, whilst interpersonal competence is process orientated, for example establishing rapport (Johnson et al., 2015). Telephone communication self-assessment tools are useful for the clinician to become aware of their own uniqueness in communication and interpersonal interactions, and assists to determine areas for future improvement (Johnson et al., 2015). Both the novice and experienced midwife would benefit from communication competence assessment for ongoing quality improvement in telephone triage. Improvement of communication assists the clinician to be person-centred rather than calls being driven by the clinician's agenda (Ernesäter et al., 2016; Johnson et al., 2015). Taking time to listen to the caller is also important to effective communication.

An important factor for positive telephone communication is having sufficient time for the conversation (Derkx et al., 2009; Kaminsky et al., 2017; Thumm & Flynn, 2018). Midwives in this study experienced time constraints when managing telephone triage, affecting the

quality of communication during the call. These findings are consistent with Boyle et al. (2016) where both women and midwives identified time as a significant factor that hindered sharing of information, decision-making and women's choices. When time is limited, there is pressure imposed on the midwife to meet the organisational expectations rather than the woman's needs, and this can result in the midwife becoming professionally detached (Boyle et al., 2016). Additionally, time constraints imposed on telephone triage together with its inherent uncertainties, focuses cognition on a portion of the available information. This may not only affect the accuracy of decisions (Ponsiglione et al., 2018) but also women's satisfaction with the care provided. Time constraints also inhibit midwives ability to collaborate or consult with colleagues (Thumm & Flynn, 2018). There is no easy resolution of time constraints in healthcare. Nevertheless, allocation of telephone triage within midwifery workloads would account for time required to provide care to women. Not having enough time to work in partnership with the woman limits the midwives' ability to establish rapport with the woman and meet her emotional as well as physical needs.

Midwives who participated in this study emphasised the need to demonstrate empathy and compassion in order to provide a meaningful interaction when undertaking telephone triage. Midwives participating in interviews provided many examples of how midwives have not provided this empathy to women. Empathy is described as the ability to understand someone else's perspective, and to have an ability to understand another person's feelings objectively (Kerasidou, 2019; Wilkinson, Whittington, Perry, & Eames, 2017). Reported in other studies is the effect of poor interpersonal and communication skills during telephone triage as interpreted by the caller, resulting in caller dissatisfaction and a reduction in compliance with the advice given (Johnson et al., 2015; Lake et al., 2017). A systematic review of women's experiences of early labour care found that women appreciated a midwife with a sympathetic manner and clear communication, with the midwives manner influencing both positive and negative experiences (Beake et al., 2018; Green et al., 2012). Lack of empathy is

not isolated to the midwifery profession, with contemporary research of other health disciplines and consumer health reports recognising this as a concern (Kerasidou, 2019). Numerous reasons are linked with low empathy including work overload, time constraints, burnout, lack of continuity, fragmentation of care, and organisational prioritising of performance and meeting targets (Howick & Rees, 2017; Kerasidou, 2019; Wilkinson et al., 2017). Not building rapport or empathising may result in the woman failing to divulge all relevant information to the midwife. Midwives are responsible for fostering conditions that promote shared decision-making (Nursing and Midwifery Board of Australia, 2018); using approaches that maintain a 'with woman' philosophy and empower the woman through informed decision-making (Bradfield et al., 2018). A lack of rapport may disrupt the triage process with inaccurate decisions a possible outcome. Additionally, this approach disregards women as equal partners in the decision-making process, thus influencing compliance with advice or decisions. To address this challenge the utilisation of midwifery led continuity of care models, where women and midwives are known to one other may be useful as it is less fragmented, and rapport is already established. Having sound interpersonal and communication skills together with empathy for the caller are enhanced further with sound clinical knowledge and experience of working with childbearing women.

The data in this study highlights that individual knowledge and experience for telephone triage, with no definitive answer or consensus of how much knowledge and experience the midwife should possess. Similar statements regarding the level of knowledge and experience are reported in studies of nurses and telephone triage, with years of experience advised ranging from 3-5 years, plus strong clinical knowledge (Black, 2007; Purc-Stephenson & Thrasher, 2010). However, a study of nurses and telephone triage in the United Kingdom found no evidence that length of clinical experience is associated with better call management, rather it was the preparedness for telephone triage that made a difference to nurses confidence in managing telephone calls (Varley et al., 2016). Due to the myriad of

reasons for calls to a midwife, it is a reasonable assumption that more experienced midwives are better equipped with clinical knowledge to manage calls. A study exploring nurses and telephone triage found that not all clinicians are equal in knowledge base, assessment skills, ability to communicate, and there are additional competencies required for telephone care that are not expected of the novice (Black, 2007). During interviews, midwives in this study questioned whether the novice midwife should be responsible for telephone triage. There was clearly a sense that the midwife needs experience whilst advocating that novice midwives need support to develop skills necessary for telephone triage. This wavering aligns with responses to the survey question 'only the most experienced midwife should manage telephone triage', where a third neither agreed nor disagreed to the statement. If the knowledge and skills to perform an accurate telephone assessment are lacking, then quality of care and preventable problems will arise. Due to the current lack of training for the novice and complexity in providing care over the telephone, the profession should consider structured mentorship of novices by experienced midwives. This preparation would be useful to not only improve confidence, but also to ascertain competence in care over the telephone.

Survey results indicated that competence in telephone triage is not formally assessed. Yet, the measuring of competence in telephone triage was important to participants in this study. Midwives expressed the belief that if the novice midwife was unsure during a telephone call, they would seek assistance from someone more experienced. This finding supports a study in the United Kingdom by Spiby et al. (2014) about early labour telephone calls where the midwives expressed the same opinion that junior staff would ask for help if needed. In contrast, there is evidence in studies of nurses that when unsupervised, junior staff may take on roles and tasks beyond their competence and thereby place themselves and patients at risk (Lubbe & Roets, 2014). Comparable findings were identified in Mackinnon (2011) study of nurses providing maternity care, where less experienced nurses stated that it was difficult to determine 'what you do not know' and were concerned about the lack of mentorship when

providing care in new areas. A suggestion from participants in this study was support for new midwives during initial telephone triage interactions with either structured training or a mentorship approach including some assessment of competence. As there is clear evidence that face-to-face communication, interpersonal and assessment skills are not transferrable to the telephone an initial evaluation of the novice midwife would be a sensible adjunct to training.

Recommendations for training in telephone triage have previously been made in studies of nurses, midwives and doctors (Cherry et al., 2009; Clarke et al., 2012; Derkx et al., 2009; Finlay & Brown, 2013; Kaakinen et al., 2016; Nolan et al., 2007; Smith et al., 2013). A literature search revealed no studies that explored or evaluated midwives and educational interventions for telephone triage (Bailey et al., 2018). However, there have been some studies of nurses and triage using various educational methods. Researchers conducting a study in Finland with emergency unit nurses, provided six-hours of education comprising both computer-based and face-to-face sessions, including topics such as legislation, the process of assessment, and telephone communication (Kaakinen et al., 2016). The educational intervention resulted in improvements in nurses' knowledge, skills, attitudes, and patient-centredness thus overall improving quality of the telephone triage. Furthermore, these researchers suggest that continuous training would be beneficial to maintain and reinforce professional competence. Another study including nursing students in the United States, used patient simulation and algorithm-based courses as their educational interventions in conjunction with clinical hours to promote confidence in triage decision making (Smith et al., 2013). Although a small sample size of 3-4 students in each arm of the study, these interventions resulted in improved confidence levels in students. A further study conducted in Iran compared lecture based education with role-playing on knowledge and triage practice of nursing students (Delnavaz et al., 2018). Both methods showed a significant improvement on student learning, with role-playing having a greater increase than lectures on triage practice.

These researchers suggest that triage training benefits from both theoretical and practical education. Midwives in the present study made recommendations to include training for telephone triage. These midwives suggested simulation using audio, online learning scenarios, peer-review of cases or the sharing of exemplars at professional meetings. Based on the positive benefits of educational interventions on triage practices of nurses, it would be sensible to undertake and evaluate various educational methods with midwives. Additionally, as technologies evolve the profession of midwifery like others may need to further adapt practises to include video calls. Further to training midwives about telephone triage and the skills required, there is also the management of risk when performing triage.

6.4 Managing risk

Many midwives who participated in this study reported that they had experienced anxiety related to telephone triage. Participants found it problematic to articulate what actually caused the anxiety, as there were many facets to this. The attributable factors identified that lead to anxiety include organisational and individual factors, together with personal concerns related to risk. There were several areas of risk concern including protecting professional standing, poor infant or maternal outcomes, and potential litigation. Clinicians concerns and concepts of risk in maternity care are recognised in the literature (Healy, Humphreys, & Kennedy, 2017; Mackenzie Bryers & van Teijlingen, 2010; Scamell, 2016). The weighing up of clinical risk factors is central to the midwives' concept of professional and legal risk and working in partnership with women. Further, risk status assessment is a continuous process where assignment of risk from low to high can be changeable (Mackenzie Bryers & van Teijlingen, 2010). This is considerably difficult during a telephone exchange when the woman is unknown to the midwife. A study exploring the role of midwives in Australia found women wanted midwives to appreciate women's strength and ability to give birth (Homer et al., 2009). A qualitative study conducted in Ireland found that women value being respected as an individual with past experience, potential fears, and preferences and the concept of woman-

centred care can help to normalise childbearing regardless of the outcome (Hunter et al., 2017). If risk becomes the focus, the midwife may not provide balanced information and promote the normality of childbearing, which may negatively affect the midwife woman partnership.

Understandably when the individual midwife considers there is increased risk, tolerance for delaying admission for further follow up seems low. Although, midwives with more experience may have a higher threshold to this concept of risk, findings from this study show an inconsistency in this notion. Findings from the survey indicate that 73% of midwives had experienced anxiety related to telephone triage, with this being greater in midwives with less years of experience, although this only had a small effect size. Whilst the source of this anxiety was not gathered in the survey, midwives who were interviewed claimed that a sense of risk was imposed during telephone triage that may result in anxiety. Experienced midwives interviewed shared that if exposed to an adverse event, they were now more likely to 'err on the side of caution', end the telephone call and ask the woman to attend for physical assessment. A previous study of midwives found that an adverse event or response to organisational accountability results in risk aversion or avoidance behaviours (Scamell, 2016). This is consistent with Dahlen (2010) discussion of the 0.1% doctrine, where 999 out of 1000 events having a positive outcome is outweighed by the 1 in 1000 chance of an adverse event. This magnification of risk creates fear in individual clinicians. Equally, these experienced midwives in the current study may be extra critical when evaluating their practice and think more about consequences (Kaakinen et al., 2016). Risk aversion behaviours are those where the midwife limits exposure to being the decision-maker, such as over referring to others, and avoiding situations that have uncertainty (Healy, Humphreys, & Kennedy, 2016; Healy et al., 2017; Scamell, 2016). Woman-centred care is limited when the focus is on perceived risks and does not take into consideration the woman's own views. Heightened or irrational perceptions of risk or uncertainty may expose women to more intervention than is necessary, and

influences care the woman receives (Healy et al., 2016; Spendlove, 2018). If midwives feel anxiety over the uncertainties of childbearing, and future potential error and blame, they may practice defensively (Scamell, 2016; Spendlove, 2018). Defensive practices have been described as practices where management decisions are based on fear and attempts to minimise risk, rather than based on clinical assessment (Scamell, 2016; Spendlove, 2018). Midwives, particularly those experiencing a past adverse event, should be provided with organisational and peer support to counteract these risk aversion behaviours and defensive practices.

The individual concept of risk for some midwives is too burdensome and they opt to have all women telephoning attend the health service for assessment. This just-in-case stance is a result of uncertainty that risk cannot be predicted (Mackenzie Bryers & van Teijlingen, 2010). Admitting women may reduce the sense of risk for the individual midwife. However, it is disruptive to the woman who may only have wanted reassurance, and now needs to arrange transport or childcare in order to attend the health service. It also places strain on the finite resources of the health service (Turnbull, Prichard, Pope, Brook, & Rowsell, 2017). This 'one size fits all' approach does not support the partnership model of working with women that midwives strive to achieve. This is supported in other studies of midwives where providing individualised care simultaneously with risk management created tensions for the midwife (Scamell, 2016; Spendlove, 2018). Revealed in this study, these tensions may provide further evidence of the discord between a midwives' sense of risk and promoting normality for the childbearing woman. There are also tensions when a woman's response is not concordant with the midwife's advice.

Participants in this study experienced apprehension when women did not follow the advice they had given, which creates tension with the partnership model. This resulted in concern and worry that the woman was taking an unnecessary risk, and fear over

repercussions for the midwife should there be an adverse event. Although there is no evidence of such a question addressed previously in the literature concerning telephone triage, there are several possible explanations from other studies for this result. Women not heeding advice potentially stems from clear risk factors that the woman does not appreciate, from the midwives' tolerance of risk, or different perspectives on what is risky such as staying at home or attending hospital where interventions may be imposed. If midwives view maternity care through a risk lens, then there is a tendency toward potential risk rather than viewing each woman individually (Scamell, 2016). There may also be a tendency to see non-compliance as a problem with the woman, rather than a problem with the assessment, advice given or understanding of advice. A systematic review of studies measuring compliance with telephone triage decisions found different types of non-compliance (Blank et al., 2012). These types are intentional non-compliance (caller actively chooses not to follow advice), inadvertent non-compliance (caller does not understand advice given), and a change in circumstances, e.g. condition improves or worsens, and the original advice is no longer applicable (Blank et al., 2012). Any of these situations are possible for the childbearing woman not following advice of the midwife. It is also consistent with the partnership model, where women's decision-making is based on informed choice and acknowledges that women accept responsibility for their decisions, whilst midwives have a responsibility to work within professional standards when women decline recommended care (Pairman et al., 2019). This perceived non-compliance of the woman challenges the concept of shared decision-making for the midwife.

When women decline recommendations from the midwife, the partnership model which promotes shared decision-making is tested. A recent integrative literature review found that an antecedent of woman-centred care was empowerment through shared decision-making (Brady et al., 2019). This empowerment is achieved through relationship building, trust, and working in respectful partnerships (Brady et al., 2019). There are few midwifery-led

continuity models of care in Victoria, making it likely that during telephone triage the woman and midwife are unknown to each other. While challenging, the woman has the right to autonomy and informed refusal (Megregian & Nieuwenhuijze, 2018). Inadequate communication of information by the midwife due to medico-legal fears, tolerance of risk, or concerns of criticism from peers could result in advice declined by the woman (Jenkinson, Kruske, & Kildea, 2018; Megregian & Nieuwenhuijze, 2018; Spendlove, 2018). Equally, women may choose to disregard the advice given if decisions are based on midwives' own experiences, anecdotal or limited evidence (Megregian & Nieuwenhuijze, 2018). Dutch researchers investigating the prevalence of women requesting less, more or no care than advised by clinicians' found requests for less care were made to more than 80% of caregivers in the previous year (Hollander, Holten, Leusink, van Dillen, & de Miranda, 2018). Further, these researchers suggest that clinicians are conflicted when the advice declined by the woman could lead to poorer outcomes for her baby, placing the beneficence of the unborn child higher than the woman's autonomy in decision making (Hollander et al., 2018). A recent study by Jenkinson et al. (2018) in Australia recommended that clinicians vulnerable to maternal refusal need guidance on how to promote women's autonomy whilst using a harm minimisation approach. Whilst Hollander et al. (2018) suggest referring the woman to a colleague if unable to reach agreement with the woman. Extension of these suggestions to midwives managing telephone triage, where presentations are uncertain and women are often unknown, would be worthwhile particularly where there is a large proportion of fragmented models of maternity care.

Midwifery-led partnership models of maternity care are quite limited in Australia (Homer, 2016). This poses a challenge for women and midwives who predominantly work in public health services (Australian Institute of Health and Welfare, 2016) where biomedical models are dominant. Biomedical models are based on the notion of medicalisation of childbirth that occurred across the 20th century (Clesse, Lighezzolo-Alnot, de Lavergne, Hamlin,

& Scheffler, 2018; Ferrer, Jordana, Meseguer, Garcia, & Roche, 2016). It was during this time that births were pathologised, leading to the use of medical interventions (Ferrer et al., 2016). Births moved from homes into hospitals in western countries, and the focus on childbirth moved from normality to risks of the woman and baby in need of preventative or curative medical techniques (Clesse et al., 2018). Women in this model are often passive recipients rather than equal partners in care, causing the woman to lose autonomy and control (Ferrer et al., 2016). Criticism of this model of care is that it is perceived to not meet women's human rights, or social or emotional needs (Holten & de Miranda, 2016). Biomedical models of care are led by medical professionals presenting a medical dominance over maternity care (Clesse et al., 2018). However, this is an evolving model that is responding to societal changes of requiring a more humanised based care approach that provides women with respectful individualised care, autonomy, and a positive experience (Tunçalp et al., 2017). These changes are more congruent with the ideals of the *Midwifery Partnership Model* of care.

The main components to shared decision-making of open respectful communication and establishing a relationship with the woman (Jenkinson et al., 2018; Megregian & Nieuwenhuijze, 2018; Nieuwenhuijze, Korstjens, de Jonge, de Vries, & Lagro-Janssen, 2014) were both challenged during telephone triage. This was heightened in fragmented models of maternity care. Hollander et al. (2018) recommends that shared decision making with women who disagree with advice could be achieved when clinicians take additional time, are interested and have good counselling skills. Rapport building is important to enable effective partnerships with women, with achievement of rapport based on appreciating factors unique to the woman, respectful listening and hearing, being adaptable, and responsive to the woman (Bradfield, Hauck, Kelly, & Duggan, 2019). During the triage process quick establishment of rapport is essential, listening to the woman's story, interpreting the information, making decisions and planning care with the woman. Whilst, midwives are skilful and rapid in developing rapport with women in face-to-face encounters (Bradfield et al., 2019)

the ability to do this over the telephone is not established. Findings from this study suggest that some challenges of telephone triage in maternity settings may be due to the inability to create this rapport and support women's autonomy in decision-making. Methods to establish and maintain rapport during telephone triage to enhance working in partnership with women need further exploration. Furthermore, acknowledgement of this midwifery practice by managers of health services would extend to better resources for midwives to provide telephone triage.

6.5 Telephone triage as an unacknowledged practice

Emergent from this research is the lack of formal recognition of midwifery management of telephone triage, rendering it as an unacknowledged practice. Insights gained from both phases indicate there are very few midwives with access to telephone triage policies, clinical practice guidelines and in some cases documentation to record calls. Thus, highlighting the intermittent application of clinical governance to telephone triage in maternity settings. Clinical governance defined by the Australian Commission on Safety and Quality in Health Care (2017) is the establishment of responsibilities and relationships between the health service and stakeholders to ensure good clinical outcomes. Although, some studies propose that the effect of governance structures persuades clinicians' tolerance for risk, creates risk aversion, and they can be over-prescriptive therefore undermining autonomous practice (Mackenzie Bryers & van Teijlingen, 2010; Scamell, 2016). Appreciably, having effective clinical guidance may assist in limiting the midwives' perception of isolation in their professional responsibility (Ponsiglione et al., 2018), thereby limiting the feeling of exposure to liability (Black, 2007). A minimum level of guidance and organisational support of telephone triage practises is clearly needed in all maternity settings.

There is debate in the literature on the usefulness of having set protocols or algorithms of care for anticipated presentations (Holmström, 2007; Rutenberg & Greenberg,

2014; Turnbull et al., 2017; Wheeler, Greenberg, Mahlmeister, & Wolfe, 2015). Protocols seek a single answer to complex issues, which can be reductionist (Greatbatch et al., 2005). However, there are positive benefits such as eliminating common practice errors, safeguarding against medico-legal risk, achieving consistency, and improving documentation (Greatbatch et al., 2005; McGrath & Macdonald, 2008; North et al., 2014; Russell, 2012). Algorithms or tick-box documentation provided a sense of security for the beginning clinician, but comparatively expert clinicians found they hindered decision-making and adaptability of questions in response to the caller (Ponsiglione et al., 2018). By contrast, guidelines are more permissive than algorithms as they promote flexibility and independent decision-making through suggested rather than mandated management strategies (Black, 2007; Tillett, 2009). Whilst the provision of standardised processes would be useful to the midwife, if not flexible, it may hinder shared decision-making, which is core to woman-centred care. Instead, ready access to women's health records could improve the triage process by enabling the midwife to confirm details rather than questioning the woman on all aspects of her pregnancy. With the establishment of electronic medical records in Australia, these may soon be accessible to all triage calls and address this need. Further supported with an adaptable record containing prompts for frequent or standard responses and open text space to document specific details of individualised care. Formalising some processes would also limit the frequency of informal rules that currently govern practice.

A further issue when practice is unacknowledged is the potential for stemming of informal rules. These rules of practice are supposedly agreed practices within the workplace or profession and may not have any evidence base to them (Parsons & Griffiths, 2007). One such midwifery practice related to telephone triage is the 'third call rule', where, regardless of the situation the woman calling for the third time is directed to attend for a physical assessment. While not a part of any guideline, midwives felt bound by this third phone call rule even when they professionally determined attendance by the woman was not appropriate. Referred to as

a practice convention, Parsons and Griffiths (2007) argue these rules are communicated via word-of-mouth rather than formally written, with reinforcement of these rules by those in authority within a health service. Clinicians at times are therefore unable to distinguish practice conventions from organisational policy (Parsons & Griffiths, 2007). Conversely, participants identified a positive aspect of the third rule practice convention as protective for women from midwives who continuously delay their admission. Midwives working in settings with informal rules should review the impact of the rules on their ability to respond to women's needs and enable woman-centred care. Informal rules, where evidence supports them, need to be formalised so that care is consistent, and midwives have clear guidance for practice. This has become increasingly important when sentinel events arise impacting all aspects of healthcare delivery.

The coronavirus disease (Covid-19) pandemic of 2019-2020 is one such event. Providing healthcare at a distance through telephone health services, and directing patient flow with telephone triage, are important strategies for maintaining public health during times of such an infectious disease outbreak (Heymann & Shindo, 2020). Telephone services, including telephone triage, telephone consultations and telehealth was urged and implemented to control the spread of infection and to protect healthcare workers (Craver, 2020; Heymann & Shindo, 2020; Moran, 2020). Of the plethora of papers published in early 2020 regarding Covid-19, several specifically discuss telephone consultations, telehealth, and monitoring of symptomatic patients remotely via telephone (Craver, 2020; Greenhalgh, Koh, & Car, 2020; Heymann & Shindo, 2020). This has generated issues ranging from access to systems, managing large volumes of callers, and skills for healthcare providers to manage consultations at a distance. With a surge in demand for these services, guidance for undertaking telephone consultations, and determining the right format for appointments e.g. telephone or video, have been published (Greenhalgh et al., 2020). The guiding principles of telephone consultations include engaging the person, taking a history, completing a remote

physical examination, and identifying urgent situations (Greenhalgh et al., 2020). Clinicians have not only been faced with learning about a new disease, they are also learning a new way of interaction with patients (Greenhalgh et al., 2020). During this time, midwives have been required to adapt care provision to telephone or video calls and limit antenatal face-to-face interactions to fifteen minutes or less (State Government of Victoria, 2020). This further highlights the importance of telephone triage and telephone consultation skills for healthcare professionals.

6.6 Strengths of the study

The main strength of this study is that it is the first empirical study of midwives and telephone triage. Using an explanatory sequential mixed methods design that was able to incorporate quantitative data from a large survey tool together with qualitative semi-structured interviews enhances the strength of this study. This approach has allowed the gathering of a relatively rich data set and enabled the researcher to compare and merge results to construct a comprehensive representation of midwives' practice of telephone triage. Using only a quantitative survey tool would not have allowed the researcher to gain a full understanding of midwives' views of their own practice. The follow-up qualitative interviews allowed midwives to give their voice to this area of practice. A strength of the study includes collecting data from one state of Australia to gain a good understanding of the practice in that setting. This provides a depth and richness in findings that may not have occurred if spread across multiple sites.

6.7 Limitations of the study

It is important to appreciate that there are a number of limitations of this study. An online survey format is convenient; however, there is a challenge with low response rates estimated to be 11% lower than other survey modes (Fan & Yan, 2010; Kaplowitz, Lupi, Couper, & Thorp, 2012). To counteract this effect, several strategies to enhance participation

were implemented. Firstly, an invitation with an explanatory statement outlining the importance of the research and a link to the survey was emailed to midwives (Kaplowitz et al., 2012). Secondly, reminder emails and further alerts on social media followed the original email at regular intervals (Dillman et al., 2009). Response rates have been demonstrated to be higher when the respondents receive an invitation to participate from a colleague or someone from their own profession or organisation (Saleh & Bista, 2017). To try to reach as many midwives as possible, the study advert was directed to all currently practising midwives through midwifery professional organisations. Response rates have been shown to be enhanced by these multiple strategies (Dillman et al., 2009; Kaplowitz et al., 2012). There were notable spikes in response rates following each of the two reminder emails and social media alerts, with the larger spike after the first reminder. Despite these measures the estimated sample size was not reached. This may have been due to self-selection bias with midwives more likely to respond if they had a particular interest in the topic (Dillman et al., 2009). The survey was open to all midwives, however, those not working directly in the areas where calls are traditionally managed e.g. birth suite or antenatal clinic, may have elected not to participate. This approach to recruitment through professional organisations was desirable for both the survey and access to midwives completing the survey to nominate themselves for participation in phase two of the study.

Using a purposive sample assists the researcher to recruit participants from the population of interest. However, it is recognised that when participants self-select or volunteer for a study, those volunteering may have a particular interest in the topic, or have strong views on the topic (Patten, 2018). The population of interest, midwives currently practising in Victoria, was considered large and diverse. These characteristics should help to ensure a representative sample of participants is achieved (Patten, 2018). Purposive sampling and self-selection provided the researcher access to midwives for interviewing.

The use of interviews also has limitations. These include participant access and recruitment, time-consuming, difficult to estimate how many interviews will be required, maintaining the semi-structured interview guide, potential imbalances of the power relationship between researcher and participant, and the researcher's own experiences can influence the interview (Schneider et al., 2016). Strategies were implemented to address these limitations, such as using data saturation principles to guide the number of interviews undertaken and reviewing initial transcripts to ensure adherence to the interview schedule. Funnelling questions from an introductory question designed to put the interviewee at ease, to more detailed or probing questions assisted to elicit a detailed response and assisted to minimise interviewer influence (Liamputtong, 2017). Ensuring limitations are recognised provides the researcher an opportunity to implement appropriate strategies to minimise these limitations.

The qualitative interviews together with the survey allowed gathering of in-depth data on the phenomenon under investigation. However, there was no observation of midwives' practises during telephone triage and all data was self-reported. It would be beneficial in future research to include observation of practises. Likewise, this study was undertaken in one state of Australia with members of two professional organisation groups. It is possible that some midwives in this state do not have membership with either organisation, therefore did not have the opportunity to participate. In addition, future research could be extended to other states for comparisons of Australian midwifery telephone triage practises.

Despite the limitations of the study, several novel findings arising from the research are summarised below.

- For midwives in Victoria, telephone care and advice are core functions. However, the practice is largely unacknowledged.

- Contextual factors of workplace environments, allocated workloads, resources, and processes all influence midwives' practice of telephone triage.
- Competing interests or maintaining privacy may lead to crucial information being missed thus affecting decisions made and ability to work in partnership with women.
- The supervising midwives' role, not previously explored highlights challenges in juggling finite resources of staff and beds and overseeing other midwives' practises.
- This study accentuates the importance of knowledge, experience, communication, and interpersonal skills together with an ability to empathise.
- Novice midwives need support to develop skills and competence in telephone triage.
- A sense of risk related to telephone triage is multifactorial and may arise from organisational, personal or woman related factors. This risk may impede meeting childbearing women's needs.

6.8 Conclusion

This mixed methods study of midwives' practises related to telephone triage has revealed a number of significant insights. Clearly, in order to manage telephone triage effectively, midwives need specific individual attributes comprising excellent communication and interpersonal skills, experience, sound clinical knowledge base, and an ability to contain risk influences. Novices need support to develop these necessary skills. Midwives assert that telephone triage needs to be an acknowledged practice for the implementation of dedicated workspaces, time allocation and quality frameworks. This would assist in improving consistency in practice, facilitate decision-making, and promote care in partnership with women. It is likely that this would result in better utilisation of finite healthcare resources,

safeguarding of accurate telephone assessments, and could reduce the midwives' sense of risk vulnerability in relation to telephone triage. Previous research has concentrated on telephone triage from the perspective of early labour management, the present study has added to the body of knowledge by identifying factors that enhance and inhibit midwives' practises in telephone triage through the *Midwifery Partnership Model* lens. The next chapter discusses the implications of these important findings and proposes recommendations for midwifery practice, education and research.

CHAPTER SEVEN – CONCLUSION

Chapter Seven – Conclusion

7.1 Introduction

The previous chapter integrated the findings of the two phases of this mixed methods study and highlighted the significant discoveries. This study explored the management of telephone triage from the viewpoint of currently practising midwives in Victoria, Australia. This study reveals contemporary practice issues and contributes new knowledge in the field of telephone triage. Presented in this chapter is a synopsis of the important findings, and recommendations for midwifery practice, education, and research.

7.2 Overview of findings

The overall aim of this study was to explore registered midwives' practises of telephone triage across all practice settings. The aim was addressed through the following research questions:

1. Are midwives specifically prepared for telephone triage through education or training?
2. Are midwives confident in telephone triage?
3. What variables affect midwives' management of telephone triage?
4. What particular skills does the midwife use during telephone triage?

The following summary highlights findings applicable in answering the research aim and each of the research questions.

7.2.1 Midwives preparation for telephone triage

It became apparent from phase 1 of this study that there are very few education or training opportunities to prepare midwives for telephone triage. Currently, telephone triage practice takes place experientially. Participants in phase 2 confirmed this by advocating for the introduction of training for novice midwives. Midwives considered training useful for providing novices with an understanding of the telephone triage process; give opportunities to practice

skills and familiarise themselves with organisational work practices. Training delivery methods suggested by participants included online scenarios using audio tools, case study reviews at professional meetings, peer-support mentoring and role-play. Topics for inclusion in training as suggested by participants included guiding principles for telephone triage practice, processes, communication styles, rapport building, categorising of calls, managing challenging calls, and documentation of the decisions reached with the woman. Training or other preparation methods could be strategies used to improve confidence and reduce anxiety of midwives performing telephone triage.

7.2.2 Midwives confidence in telephone triage

Midwives express confidence in telephone triage. This confidence is most evident in midwives who are older and those with more experience. However, exposure to adverse clinical events can cause this confidence to waiver despite experience levels. Reports of least confidence occurred more frequently in midwives with two or less years' experience. Conversely, most participants have faced some level of anxiety related to telephone triage. Explored in interviews, participants revealed multiple reasons for this anxiety. Organisational and individual factors, as well as women not following advice can cause anxiety for the midwife. Opportunities need to be available to midwives to enhance confidence and reduce anxiety, such as professional debriefing and support. The recognition that confidence increases with experience suggests that novice midwives need assistance and encouragement during development of their telephone triage competence. There are other factors that have an influence on midwifery practises in this area.

7.2.3 Variables affecting midwifery management of telephone triage

Workspace physical set-up, organisational processes, individual sense of risk, and assigning level of risk to the woman are all variables that can affect telephone triage management. Contending with noise and privacy issues during calls was a main concern. The

impact of this is missed information from the woman and potential for inaccuracy in decisions and not meeting the woman's needs. Maintaining privacy was difficult if in a public space and more so for known rural midwives. Not having direct access to women's history's during the triage process poses additional constraints. The woman needs to communicate her circumstances, and often multiple times to different midwives during subsequent calls. These conditions are not conducive to partnership working and may reduce women's satisfaction with care. Attention to these factors are essential in improving services for women, along with adequate resourcing.

Midwives are cognisant of finite resources of staff and beds during the triage process. Options for women can be restricted when midwives convey limited resources to women. The supervising midwife may not be aware of calls received by other midwives, which affects the allocation of resources when unexpected admissions occur. Together with a lack of formalised processes for telephone triage creates tensions for the midwife when trying to provide individualised care to women. Informal rules can impede, or influence decisions made, and documents to record calls may be lacking. Women on the telephone and within the health service can have interruptions to care when the midwife is juggling multiple tasks within workloads. Formalising processes, better allocation of workloads, and development of formal guidelines will provide midwives with the necessary tools and guidance to promote autonomy when working with women and may assist in managing risk associated with telephone triage.

Using a risk lens creates discord when supporting women through the normality of childbirth. The assignment of a risk level to the woman or baby during triage becomes the focus rather than advice and support for the woman. The uncertainty of care via the telephone is burdensome for some midwives, with potential for risk aversion behaviours such as avoiding answering the telephone altogether. Time needs to be given to care via the telephone, so that the midwife can explain any potential clinical risks based on assessment

and discuss implications with women to allow shared decision making. There are specific skills identified that are useful for the midwife triageur.

7.2.4 Skills midwives use during telephone triage

Many important skills and attributes for telephone triage emerged. Of note is clinical knowledge, communication and interpersonal skills, and an ability to empathise. These skills correspond with previous research of telephone triage. Having sophisticated communication skills provides the midwife the ability to adapt questioning techniques to elicit information from the caller. Active listening was determined important to the process, along with an ability to establish rapport quickly. Likewise having a sound clinical knowledge base was deemed necessary. However, participants could not identify an agreed level of experience that would indicate these skills for telephone triage are developed. Midwives recognised that as experience is gained, further telephone triage skills develop. Appropriate skills and preparation for telephone triage practice are important for midwives to work in partnership with women successfully. Having this further understanding of midwives' practises related to telephone triage has several important implications for practice, education and research.

7.3 Implications

As the responses to the research questions have highlighted, there are several implications for midwifery practice, education and research. These implications have been considered in view of the partnership model and enhancing care for women along with improvements for midwives in their practice. These are outlined in detail below.

7.3.1 Implications for practice and policy (translation into practice)

The new information resulting from this research emphasises some clear deficits in current clinical practice. Needed in all maternity settings is a minimum level of guidance and organisational support of telephone triage practises. The following factors need to be scrutinised against the National Safety and Quality Health Service Standards (Australian

Commission on Safety and Quality in Health Care, 2017), and Safer Care Victoria's strategic plan (Victorian Government, 2017) in order to improve health services and the health system. In particular:

- Healthcare settings need to ensure they have established guidelines for telephone triage that support midwives in this work, including strategies to manage maternal refusal of advice.
- Midwives should have telephone triage recognised within their practice. Workload configurations and workspaces should support midwives to have the time and concentration necessary to triage accurately.
- Ready access to women's health records would improve the triage process by enabling the midwife to confirm details of the woman, supported with an adaptable record containing prompts for frequent responses and open text space to document specific details of individualised care.
- Graduate midwives should be orientated to the organisations telephone triage processes and be provided with support from experienced midwives along with time to develop telephone triage skills.

Whilst the findings of this research reveal challenges for midwives regarding risk, there must be acknowledgement that an individual's risk anxiety has the potential to influence telephone triage practice, as such:

Midwives and health service managers should ensure that risk aversion behaviours exhibited by individual midwives is recognised, and measures implemented to counteract the effect and support these midwives. Regular discussion of factors causing midwives concern, reviewing adverse events, and offering mentorship may be useful approaches. Encouraging open dialogue about telephone triage practises during handover or at team meetings would provide a further avenue of support for midwives managing calls and establish a pathway for the novice midwife to understand the complexities of care via the telephone. Implementation

models or frameworks could be utilised for the development and application of specific telephone triage guidelines for health services and midwives. Together with practice and policy recommendations, there are implications for education in regard to the findings of this study.

7.3.2 Implications for education

Midwifery entry to practice programs should include education and training that enables students and graduates to commence telephone triage practice with a minimum set of skills. Education provided should occur in a safe environment that allows the student opportunities to learn and practice these new skills through simulation or role-play prior to providing direct care to women. De-identified voice recordings of actual calls that demonstrate sound midwifery practice could be compared against recordings of poorly managed calls as adjunct learning tools to enhance understanding of good triage principles. Students could record role-play telephone calls and use these for self-reflection or peer-review.

Specifically, curricula need to incorporate topics specific to telephone triage, such as effective communication and interpersonal skills. The education should equip midwives to build rapport quickly and demonstrate empathy, manage competing interests and distractions, comprise reasons women require in-person assessment, and when handover of care to more experienced midwives is appropriate. This training is anticipated to provide midwives with a base level of knowledge of telephone triage to assist to ease transition to practice. Perceived benefits include improved confidence, earlier attainment of competence in advanced communication techniques and subsequent reduction in anxiety associated with telephone triage. Additional to implications for education of midwives, there are implications from this study that are related to future research agendas.

7.3.3 Implications for research

These findings suggest several courses of action for future research. As the study was conducted in only one state of Australia, research should be extended to all Australian states and internationally to gain further insights into how midwives manage telephone triage. Comparisons could then be made and further recommendations for telephone care. Future research could include the following aspects:

- A comparative study of dedicated maternity telephone triage services to informal services to determine if there are the anticipated advantages for midwives and women of a dedicated service.
- As this study relied upon self-reporting, future research should include an observational phase of midwives during triage, and voice recording of calls.
- Exploration of methods that are effective in establishing and maintaining rapid rapport during telephone triage.
- Examining if similar challenges exist for midwives in midwifery-led continuity of care models.
- Additional research is needed to better understand women's experiences of telephone triage, particularly those living vast distances from their nearest health service, and those whose primary language is not English.
- Impact of Covid-19 on telephone triage and telehealth for childbearing women.

As future technologies advance, the availability of video capability during telephone triage would add a new element for midwives to master. The findings of this study highlight the issues with audio calls that may not be resolved with the addition of video. Therefore, future research endeavours could focus on specific challenges, attributes and skills needed for video calls. All aspects of remote delivery of healthcare need to be considered for midwives and

other health professionals to be able to provide the most appropriate care to childbearing women.

7.4 Conclusion

This research has contributed new knowledge about midwives and telephone triage. Midwives generally feel confident about their management of calls and welcome telephone triage services for women. Being skilled in telephone triage is increasingly important as highlighted by the recent coronavirus pandemic and need for healthcare from a distance. Health care organisations need to acknowledge midwives telephone care provision to better support midwives in their practises. Whilst education providers and clinicians can do more to support novice midwives to safely develop telephone triage skills. Working in partnership with women is achievable during telephone triage, despite the challenges encountered. Further research about telephone triage would be beneficial for both midwives and women.

Epilogue

I would like to acknowledge the PhD journey itself. I have found that there are several parallels between completing a PhD and Lewis Carroll's literary nonsense novel 'Alice's adventures in wonderland'. At times you feel you have fallen into some unending rabbit hole, and I share the white rabbits view that the 'hurrier I go the behinder I get'. However, the human trait of being innately 'curious' urges us on to explore and seek knowledge of the world in which we live. Along this journey there may have been a 'pool of tears' from time to time, and a feeling that one is part of a 'caucus-race', running in circles. The Cheshire cat reminds us that 'every adventure requires a first step', and 'if you do not know where you are going, any road will take you there'. Along the way a flamingo croquet mallet and uncooperative hedgehogs would have been a welcome distraction. I could go on, however, the final similarity between Alice's adventure and the PhD journey was recognised by the Cheshire cat, who so eloquently stated 'It's no use going back to yesterday, because I was a different person then'.

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Appendices

Appendix 1 Ethical approval

MONASH University
Monash University Human Research Ethics Committee (MUHREC)
Research Office

Human Ethics Certificate of Approval

This is to certify that the project below was considered by the Monash University Human Research Ethics Committee. The Committee was satisfied that the proposal meets the requirements of the *National Statement on Ethical Conduct in Human Research* and has granted approval.

Project Number:	CF16/348 - 2016000164	
Project Title:	Midwives management of telephone consultations (telephone triage) with pregnant or postnatal women	
Chief Investigator:	Assoc Prof Jennifer Newton	
Approved:	**From:** 15 February 2016	**To:** 15 February 2021

Terms of approval - *Failure to comply with the terms below is in breach of your approval and the Australian Code for the Responsible Conduct of Research.*

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, before any data collection can occur at the specified organisation.
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must include your project number.
6. **Amendments to the approved project (including changes in personnel):** Require the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

Professor Nip
Thomson Chair, MUHREC
cc: Mrs Carolyn Bailey, Dr Helen Hall

Monash University, Room 111,
Chancellery Building E 24 Sports
Walk, Clayton Campus, Wellington
Rd Clayton VIC 3800, Australia
Telephone: +61 3 9905 5490 Facsimile: +61 3 9905 3831
Email: muhrec@monash.edu
http://intranet.monash.edu.au/researchadmin/human/index.php ABN 12 377
614 012 CRICOS Provider #00008C

Appendix 2 Phase one – Explanatory statement

EXPLANATORY STATEMENT

(Midwife Telephone Triage Survey Participant)

Project: Midwives management of telephone consultations (telephone triage) with pregnant or postnatal women.

Chief Investigator's name

Associate Professor Jennifer Newton
Department of _____
Phone: (03) 9902 4570
email: jennifer.newton@monash.edu

Student's name

Carolyn Bailey
Phone : (03) 5122 8140
email: cmbai1@student.monash.edu

You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

What does the research involve?

My name is Carolyn Bailey and I am conducting a research project as part of my PhD studies in the School of Nursing and Midwifery at Monash University under the supervision of Associate Professor Jennifer Newton and Dr Helen Hall.
The aim of this study is to explore Victorian midwives current practices in the management of telephone calls from pregnant or postnatal women. Your participation in this research will involve completion of an anonymous online survey.

Why were you chosen for this research?

Thank you for downloading this explanatory statement from the email invitation that was sent by the Victorian branch of the Australian Nursing and Midwifery Federation (ANMF). All midwifery members of the ANMF (Victoria) are being invited to participate. Please read this Explanatory Statement in full before making a decision.

Consenting to participate in the project and withdrawing from the research

Being in this study is voluntary and you are under no obligation to consent to participation. This is an anonymous on-line survey, therefore, once you have submitted data it will not be able to be withdrawn.

Possible benefits and risks to participants

Although there are no direct benefits to you personally, the findings from this study will be significant in providing information about the practice of telephone triage by midwives.

The only inconvenience to you is that of time commitment to complete the survey. The online survey will take you approximately 15-20 minutes to complete.
It is not anticipated that any distress to participants would occur, however if it does the participant will be referred to the university counselling service or the employee assistance program at their employing hospital if required.

Confidentiality

The survey is anonymous. No identifying information will be collected. You are free to accept or decline the invitation to participate.

Storage of data

Storage of the data collected will adhere to the University regulations and be kept on university premises in a locked cupboard/filing cabinet for 5 years. Electronic information will be stored in a password protected computer database and be destroyed after five years. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

Results

Findings from this study will be reported in a thesis, and may be presented at a conference or as journal publications. No individual participant will be personally identified in any of these reports. On completion of the project a summary of findings will be available to you by contacting the Chief Investigator (details listed below).

Complaints

Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):

Executive Officer
Monash University Human Research Ethics Committee (MUHREC)
Room 111, Building 3e
Research Office
Monash University VIC 3800

Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Thank you,

(insert Chief Investigator's signature)

Chief Investigator's name

Appendix 3 Phase one – Questionnaire tool

Midwives and Telephone Triage Survey

Start of Block: Section A: Demographics

Q1 **Midwives and their management of telephone triage study**
My name is Carolyn Bailey and I am a Midwife and researcher at Monash University. I am exploring midwives current telephone triage practises and processes (i.e. talking on the telephone with women). For the purpose of this study, telephone triage is defined as: *The process of screening and collecting information from a woman telephoning the maternity service to establish the urgency of assistance the caller requires, and to determine the most appropriate advice and management.* As an exploratory survey there are no correct or incorrect answers, your honesty is appreciated. The following questionnaire will take approximately 15 minutes to complete. Participation in this anonymous survey is voluntary and you are under no obligation to complete the questionnaire. However, your support in this study will be valuable in assisting a better understanding of midwives management of telephone calls from pregnant, labouring and postnatal women. If you have questions about this research, please contact me. Email: cmbai1@student.monash.edu Telephone: 03 5122 8140
Monash University Human Research Ethics Committee Approval No. CF16/348 - 2016000164

Q2 **Are you?**

- ○ A Registered Midwife (1)
- ○ A Registered Midwife and Registered Nurse (2)

Q3 **Are you?**

- ○ Female (1)
- ○ Male (2)
- ○ Other (3)

Q4 **How old are you?** (place a number in the box below)

_____

Q5 **How many years have you been practising in maternity care?** (place a number in the box below)

_____

Q6 **Do you currently provide maternity care?**

- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If Q6 = No (2)

Q7 **In the past 12 months what area of maternity care have you <u>mainly</u> worked in?**

- ○ Antenatal care (1)
- ○ Labour and birth (2)
- ○ Postnatal care (3)
- ○ Extended postnatal/Domiciliary care (4)
- ○ Special care nursery (5)
- ○ Across multiple areas (7)
- ○ Other (please specify) (6) _____

Q8 **What is your midwifery qualification?**

- ○ Hospital certificate (1)
- ○ Graduate Certificate of Midwifery (2)
- ○ Graduate Diploma of Midwifery (3)
- ○ Master of Midwifery (4)
- ○ Bachelor of Midwifery (5)
- ○ Bachelor of Nursing/Bachelor of Midwifery (6)
- ○ Other (please specify) (7) _____

Q9 **Where did you complete your initial midwifery training?**

- ○ Australia (1)
- ○ Overseas (please specify where) (2)

_____

Q10 **How many hours per week on average do you currently practise in maternity care?**

- ○ up to 8 (1)
- ○ 9-16 (2)
- ○ 17-24 (3)
- ○ 25-32 (4)
- ○ 33-40 (5)

Q11 **In what sector do you work?**

- ○ Public health care facility (1)
- ○ Private health care facility (2)
- ○ Private practice (3)

Q12 **In what geographical area do you work?**

- ○ Metropolitan (1)
- ○ Regional (2)
- ○ Rural/remote (3)

Q13 **Do you work in a midwifery led model of care?**

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Q14 **Using the Department of Health (VIC) capability framework definitions, please select the level of care the health service you work in currently offers:**

- ○ Levels 1, 2 and 3 (Primary maternity care) - Normal and low risk pregnancies and babies (1)
- ○ Levels 4 and 5 (Secondary maternity care) - Medium risk pregnancies and babies and moderate complications (2)
- ○ Level 6 (Tertiary maternity care) - Complex pregnancies, births and neonatal intensive care (3)

Q15 **Approximately, how many births per year does the service you work in manage?**

- ○ Less than 100 (1)
- ○ 101-200 (2)
- ○ 201-500 (3)
- ○ 501-800 (4)
- ○ 801-1000 (5)
- ○ 1001-2000 (6)
- ○ 2001-3000 (7)
- ○ 3001-4000 (8)
- ○ 4001-5000 (9)
- ○ More than 5000 (10)

Q16 **Does the maternity service that you work in provide a telephone number for women who are pregnant, in labour or the early postnatal period to speak with a midwife?**

- ○ Yes (1)
- ○ No (2)

End of Block: Section A: Demographics

Start of Block: Section B: How midwives triage

Q17 **In the maternity service that you work in, can you estimate of the number of clinical calls handled in a typical day?**

- ○ 0 (1)
- ○ 1-5 (2)
- ○ 6-10 (3)
- ○ 11-15 (4)
- ○ 16-20 (5)
- ○ >20 (6)

Q18 **In your maternity service do you have any of the following for telephone triage?** (tick all that apply)

- ☐ Policy (1)
- ☐ Protocol (2)
- ☐ Clinical Practice Guideline (3)

Q19 **Who is most likely to first answer telephone calls from women?**

- ○ Ward clerk/receptionist (1)
- ○ Midwife (2)
- ○ Nurse (3)
- ○ Other (please specify) (4) _____

Q20 **Is there an allocated person for answering phone calls to your maternity service?**

- ○ Yes (1)
- ○ No (2)

Skip To: Q25 If Q20 = No (2)

Q21 Is there an allocated area for answering phone calls to your maternity service?

- ○ Yes (1)
- ○ No (2)

Skip To: Q25 If Q21 = No (2)

Q22 **Is this allocated service?**

- ☐ A Day Assessment Unit staffed by a midwife(s) (1)
- ☐ A designated midwife(s) allocated to answer calls for the shift (2)
- ☐ Other (please specify) (3) _____

Q23 **How often is the service available?** (place a number in each box below)

- ○ Days per week (1) _____
- ○ Hours per day (2) _____

Q24 **Does this service reduce telephone calls to other maternity patient care areas, for example labour or postnatal ward?**

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Q25 **On average how many times per shift would you respond to a telephone call?**

- ○ Once per shift (2)
- ○ 2-4 times per shift (3)
- ○ 5 times per shift (13)
- ○ More than 5 times per shift (14)
- ○ Never (please state why not) (1)

_____

Q26 **When answering these calls, what aids do you use to assist or support telephone triage?** (tick all that apply)

- ☐ None (1)
- ☐ Clinical Practice Guideline (2)
- ☐ Telephone contact record sheet/document (3)
- ☐ Specific maternity telephone triage form (8)
- ☐ Maternity care record/progress notes (4)
- ☐ Decision support tool algorithm (paper based or electronic) (5)
- ☐ Computer assisted decision aid software (6)
- ☐ Other (please specify) (7) _____

Q27 **How are telephone calls to the maternity service documented?** (tick all that apply)

- ☐ In the woman's medical record (1)
- ☐ In a telephone record document (2)
- ☐ Electronically e.g. in BOS (3)
- ☐ Other (please specify) (4) _____
- ☐ Not documented (please state why not) (5) _____

Q28 **Imagine a typical initial telephone call from a pregnant woman. How frequently do you?**

	Never (1)	Rarely (2)	Some of the time (3)	Most of the Time (4)	Always (5)
Request the medical record (1)	○	○	○	○	○
Access the woman's history during the call (2)	○	○	○	○	○
Make an official referral to another service or clinician (3)	○	○	○	○	○
Inform someone else of the phone call and decision made (4)	○	○	○	○	○
Assess the woman's understanding of information given (5)	○	○	○	○	○
Assess the woman's intention to comply with the decision made (6)	○	○	○	○	○
Refer the call to another clinician or health service (7)	○	○	○	○	○
Document the telephone call and outcome (8)	○	○	○	○	○

Q29 **Which best describes the environment that telephone triage takes place?**

- ○ Office with no distractions by other staff or general public (1)
- ○ Ward area without other staff or public access causing distraction (2)
- ○ Ward area with other staff or public access causing distraction (3)
- ○ Other (please specify) (4) _____

Q30 **Is your work environment suitable for triaging telephone calls?**

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Q31 **Did you receive specific education or training for telephone triage in your pre-registration midwifery training?**

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Skip To: Q33 If Q31 = No (2)
Skip To: Q33 If Q31 = Not sure (3)

Q32 **What specific initial education/preparation did you receive for telephone triage in your pre-registration midwifery training?** (tick all that apply)

- [ ] Lectures/tutorials (1)
- [ ] Self-directed learning package (2)
- [ ] Simulated telephone calls (3)
- [ ] Observation of actual telephone calls (4)
- [ ] A midwife supervised you during calls (5)
- [ ] Competency tool (please specify) (6) _____
- [ ] Other (please specify) (7) _____

Q33 **What educational activities have you undertaken to assist you with telephone triage since your initial midwifery training?**

- ○ None (1)
- ○ Orientation package on commencement of employment (2)
- ○ Formal education session e.g. CPD activity (3)
- ○ Informal education session e.g. ward in-service (4)
- ○ Annual self-review of competence (5)
- ○ Other (please specify) (6) _____

Q34 **In relation to telephone triage, have you received training in the following?**

	Yes (1)	No (2)
Telephone communication skills (1)	○	○
Managing sensory deprivation e.g. not able to physically see or touch caller (2)	○	○
Transferring assessment skills to the telephone (3)	○	○
Using aids for triage decisions e.g. algorithms, computer software (4)	○	○
Effective decision-making (5)	○	○
Managing non-English speaking callers (6)	○	○
Managing anxious or distressed callers (7)	○	○
Managing calls made by persons other than the booked patient (8)	○	○
Risk management (9)	○	○
Professional responsibility e.g. legal responsibility and consequences of decisions (10)	○	○
Managing distractions or competing interests whilst on telephone (11)	○	○

Q35 **How would you rate your education and training related to the provision of telephone triage for women?**

- ○ Comprehensive (1)
- ○ Adequate (2)
- ○ Barely adequate (3)
- ○ Inadequate (4)
- ○ Non-existent (5)

Q36 **How would you rate your confidence in managing telephone triage?**

- ○ Very confident (1)
- ○ Confident (2)
- ○ Somewhat confident (3)
- ○ Not very confident (4)
- ○ Not at all confident (5)

Q37 **At any point in time has telephone triage caused a degree of anxiety for you?**

- ○ Yes (1)
- ○ No (2)

Skip To: Q39 If Q37 = No (2)

Q38 **How anxious did you feel?**

- ○ Mildly anxious (1)
- ○ Moderately anxious (2)
- ○ Very anxious (3)
- ○ Extremely anxious (4)

X→ X→

Q39 **How do you rate your confidence in the following telephone related activities?**

	Very confident (1)	Confident (2)	Somewhat confident (3)	Not very confident (4)	Not at all confident (5)
Receiving a call (Q39_1)	○	○	○	○	○
Ascertaining what the caller needs (Q39_2)	○	○	○	○	○
Performing an assessment of the woman over the phone (Q39_3)	○	○	○	○	○
Reducing anxiety of the caller (Q39_4)	○	○	○	○	○
Making a decision for attendance/non-attendance at maternity service (Q39_5)	○	○	○	○	○
Referring to another service or clinician (Q39_6)	○	○	○	○	○
Managing urgent situations (Q39_7)	○	○	○	○	○
Managing women with English as a second language (Q39_8)	○	○	○	○	○
Managing women with disabilities (Q39_9)	○	○	○	○	○
Assessing the woman's understanding of advice given (Q39_10)	○	○	○	○	○
Managing a second or third call from the same woman (Q39_11)	○	○	○	○	○

Q40 **When have your telephone triage skills or competence been assessed?**

- ○ Annually (1)
- ○ On commencement of employment as a midwife (2)
- ○ As a student midwife (3)
- ○ Never (4)
- ○ Other (please specify) (5) _____

Q41 **Do you believe telephone triage skills or competence should be assessed?**

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Skip To: Q43 If Q41 = No (2)

Q42 **When should telephone triage skills or competence assessment take place?**

- ○ As a student (1)
- ○ On commencement of first employment as a midwife (2)
- ○ With change of employment to another organisation (3)
- ○ Annually (4)
- ○ Other (please specify) (5) _____

X→ X→

Q43 **To what extent do you believe the following skills are required for telephone triage?**

	Always required (1)	Frequently required (2)	Sometimes required (3)	Never required (4)
Clear speaking voice (Q43_1)	○	○	○	○
Active listening skills (Q43_2)	○	○	○	○
Ability to judge tone of voice of caller (Q43_3)	○	○	○	○
Ability to judge non-verbal cues from the woman (Q43_4)	○	○	○	○
Assessing changes to tone of voice (Q43_5)	○	○	○	○
Assessing breathing tones over the telephone (Q43_6)	○	○	○	○
Eliciting further information from the caller (Q43_7)	○	○	○	○
Giving examples for women to use to describe their current clinical situation (Q43_8)	○	○	○	○

Q44 **To what extent do you agree or disagree with each of the following statements?**

	Strongly Agree (1)	Agree (2)	Neither Agree nor Disagree (3)	Disagree (4)	Strongly Disagree (5)
The most experienced midwife should manage telephone triage (1)	○	○	○	○	○
All midwives should be competent in telephone triage decision-making (2)	○	○	○	○	○
Competence in telephone triage should be assessed regularly (3)	○	○	○	○	○
Outcomes of telephone triage should be reviewed regularly (4)	○	○	○	○	○
A midwife should be allocated to telephone triage at the beginning of each shift (5)	○	○	○	○	○
Workload allocation should include telephone triage (6)	○	○	○	○	○
Triage processes should be audited (7)	○	○	○	○	○
All midwives should be orientated to telephone triage processes (8)	○	○	○	○	○
Telephone triage increases my workload (9)	○	○	○	○	○
If my workload is heavy/ward is busy I am more likely to keep call short and ask woman to come in for assessment (10)	○	○	○	○	○
If my workload is heavy/ward is busy I am more likely to ask the woman to stay at home (11)	○	○	○	○	○
If my workload is heavy/ward is busy I am more likely to complete a comprehensive assessment over telephone prior to making decision (12)	○	○	○	○	○
If my workload is light/ward is quiet I am more likely to keep call short and ask woman to come in for assessment (13)	○	○	○	○	○
If my workload is light/ward is quiet I am more likely to ask the woman to stay at home (14)	○	○	○	○	○
If my workload is light/ward is quiet I am more likely to complete a comprehensive assessment over the telephone prior to making a decision (15)	○	○	○	○	○
Telephone triage time is included in my workload allocation (16)	○	○	○	○	○

End of Block: Section B: How midwives triage

Start of Block: Risk

Q45 **In your organisation who supervises students or novice clinicians during telephone triage?**

- ○ Midwifery educator (1)
- ○ Midwife in charge of shift (2)
- ○ Any qualified midwife (3)
- ○ No-one (4)
- ○ Other (please specify) (5) _____

Q46 **Do you use an audit tool to assess outcomes of telephone triage?**

- ○ No (1)
- ○ Yes (if known, please name audit tool used) (2)

_____

Skip To: Q49 If Q46 = No (1)

Q47 **If good outcomes are identified during the audit process, is this shared with other midwives or students as good practice exemplars?**

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Q48 **If poor outcomes are identified during the audit process, is this shared with other midwives or students as poor practice exemplars?**

- ○ Yes (1)
- ○ No (2)
- ○ Not sure (3)

Q49 **Rate each of the following items in terms of response time of most critical to least critical.**

	Highly time critical (see within 30 minutes) (1)	Moderately time critical (see within 1-2 hours) (2)	Somewhat time critical (see on the day) (3)	Marginally time critical (see within the week) (4)	Not at all time critical (5)
Decreased fetal movements (Q49_1)	○	○	○	○	○
Postpartum breast soreness (Q49_2)	○	○	○	○	○
Early labour at term (Q49_3)	○	○	○	○	○
Early labour not at term (Q49_4)	○	○	○	○	○
Active labour at term (Q49_5)	○	○	○	○	○
Active labour not at term (Q49_6)	○	○	○	○	○
Bleeding from genital tract (Q49_7)	○	○	○	○	○
Ruptured membranes at term (Q49_8)	○	○	○	○	○
Ruptured membranes not at term (Q49_9)	○	○	○	○	○
Woman booked for caesarean section who is contracting (Q49_10)	○	○	○	○	○
Postpartum bleeding from genital tract (Q49_11)	○	○	○	○	○
Symptoms of dysuria (Q49_12)	○	○	○	○	○
Headache +/- visual disturbance (Q49_13)	○	○	○	○	○
Postpartum breastfeeding difficulties (Q49_14)	○	○	○	○	○
Postpartum wound discharge (Q49_15)	○	○	○	○	○
Postpartum pain in calf (Q49_16)	○	○	○	○	○
Substance or medication use in pregnancy (Q49_17)	○	○	○	○	○

Physical trauma to the abdomen (Q49_18)	○	○	○	○	○
Abdominal pain (Q49_19)	○	○	○	○	○
Emotional/mental well-being support (Q49_20)	○	○	○	○	○
Medical complication e.g. unstable blood glucose levels (Q49_21)	○	○	○	○	○

Q50 **Would you like to add anything further on the topic of telephone triage?**

_____

_____

_____

_____

Q51

Thank you for your valuable time and input into this research.

Would you like to discuss this topic further?

The researchers would like to further explore your experiences on this topic by inviting you to participate in a in an interview.

If you would like to participate in an interview on the topic of telephone triage, please email Carolyn Bailey by clicking on this email address: cmbai1@student.monash.edu

End of Block: Risk

Appendix 4 Phase two – Participant explanatory statement

EXPLANATORY STATEMENT

Project title:
Midwives management of telephone consultations (telephone triage) with pregnant or postnatal women.

Chief Investigator's name
Associate Professor Jennifer Newton
School of Nursing and Midwifery
email: jenny.newton@monash.edu

Student's name
Carolyn Bailey
Phone : (03) 5122 8140
email: cmbai1@student.monash.edu

This information sheet is for you to keep.

You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers listed above.

What does the research involve?
Research project
My name is Carolyn Bailey and I am conducting a research project as part of my PhD studies in the School of Nursing and Midwifery at Monash University under the supervision of Associate Professor Jennifer Newton and Dr Helen Hall. The aim of this study is to explore Victorian midwives current practices in the management of telephone calls from pregnant or postnatal women.

The aim/purpose of the research
The purpose of this part of the project is to explore further data collected from the anonymous online survey to develop a better understanding of how midwives manage this aspect of their work. Your participation in this project will involve a semi-structured interview either over the phone or face-to-face depending on your availability. These interviews will be audio recorded and transcribed for analysis.

Why were you chosen for this research?
You expressed interest in participating in this research following completion of the electronic online midwifery telephone triage survey. All midwives completing this survey were invited to participate as they have specific insights about this topic.

Consenting to participate in the project and withdrawing from the research
Being in this study is voluntary and you are under no obligation to consent to participate in the interview. However, if you decide to participate, you may decline to answer questions that you feel are too personal, intrusive or inappropriate. You can withdraw your participation at any point throughout the research.

Possible benefits and risks to participants
Although there are no direct benefits to you personally, the findings from this study will be significant in providing information about the practice of telephone triage by midwives.

The questions you will be asked are designed to obtain detailed information about your insights into the midwifery practice of managing telephone calls from pregnant or postnatal women.

It is not anticipated that any distress to participants would occur, however if it does the participant will be debriefed by the researchers, reassured that findings will remain confidential, and the participant will be referred to the university counselling service or the employee assistance program at the participants employing hospital if required.

How much time will the research take?
It is estimated interviews will take 30-40 minutes.

Payment
No payment or reward, financial or otherwise is offered for participation in this research.

Confidentiality
The interview recordings and transcripts will be kept in confidence. You will not be identified in any papers, thesis or reports arising from this research. The link between you and the information you provide will not be made public and will remain confidential to the research team. Pseudonyms will be used to tag data rather than the use of more personal identifiers.

Storage of data
Storage of the data collected will adhere to the University regulations and be kept on university premises in a locked filing cabinet. Electronic information will be stored in a password protected computer database. All data will be destroyed after five years.

Results
Findings from this study will be reported in a thesis, and may be presented at a conference or as journal publications. No individual participant will be personally identified in any of these reports. On completion of the project, a summary of findings will be available to you by contacting the Chief Investigator (details listed above).

Complaints
Should you have any concerns or complaints about the conduct of the project CF16/348 - 2016000164, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):

Executive Officer
Monash University Human Research Ethics Committee (MUHREC)
Room 111, Building 3e
Research Office
Monash University VIC 3800

Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Thank you,

(insert Chief Investigator's signature)
Chief Investigator's name

Appendix 5 Phase two – Participant consent form

INTERVIEW CONSENT FORM – REGISTERED MIDWIVES

Project title:

Midwives management of telephone consultations (telephone triage) with pregnant or postnatal women.

Chief Investigator: Associate Professor Jennifer Newton, Dr Helen Hall and Carolyn Bailey (PhD student).

I have been asked to take part in the Monash University research project specified above. I have read and understood the Explanatory Statement and I hereby consent to participate in this project.

I consent to the following:	**Yes**	**No**
To be interviewed by the researcher	☐	☐
For the interview to be audio-recorded	☐	☐
Be contacted by the researcher if clarification about the interview is required	☐	☐

Name of Participant _____

Participant Signature _____ Date / /

Appendix 6 Phase two – Semi-structured interview guide

Project: Midwives management of telephone triage – qualitative interviews

Phase 2 – Semi-structured interviews

Please note: Interview questions were further developed after analysis of responses to the online telephone triage survey. The interview questions will allow the researcher to explore particular views of telephone triage of midwives. If a question has been answered during another, move on.

Initial guiding questions

Opening question

☐ Tell me your name, where you practice midwifery, and what you most enjoy about the profession.

Introductory question

Today we are interested in hearing your views on how you manage telephone calls from pregnant or postnatal women.

☐ Thinking back to the first time you received one of these calls, how did you manage that call?

Additional questions from survey results:

☐ Over time, has your approach to these calls changed? Why?

☐ What particular skills do you need to manage calls? If unclear, Can you explain what you mean?

☐ Are there any aspects of the workplace that affect the way calls are managed? How does this affect calls?

☐ Is care to other women affected when a midwife has to manage the incoming calls? Can you talk a little more about that?

☐ How are newly qualified/student midwives supported in developing telephone skills?

☐ Are there any challenges or risk associated with telephone triage?

☐ What aids or documentation is used. Can you talk a little more about that?

☐ Have you had any education or training in telephone triage? Is there a need?

☐ How is competence gained? Is it assessed or measured in any way?

☐ Have you ever experienced any anxiety during telephone triage? If so, what caused this anxiety?

☐ Have you ever had a difficult telephone call, if so, what made it difficult? How did you manage it?

☐ Do you prepare women antenatally for telephoning?

☐ Is there anything about midwifery management of telephone triage that is unique?

Final question

☐ Is there anything else that you would like to tell me about telephone triage?

Interview close

That is the end of the interview. Thank you for your time and for sharing your views and experiences with me today.

Appendix 7 Example of integration of quantitative and qualitative findings

Examples of how the qualitative data were used to expand the quantitative data

Quantitative survey item	***Qualitative domain and quotations***
Which best describes the environment that telephone triage takes place? • Office with no distractions • Ward area without distractions from staff or public • Ward area with distractions from staff or public • Other (please specify)	Workplace environment *"You do have to ask people to maybe keep it quiet, so you can actually hear the conversation".* *"I actually loath the setup of our ward because people standing at the counter can hear what you're saying to the women on the phone. When we answer our phone, it's not private. People sitting on the chairs waiting can sometimes hear what's happening".* *"If you are in a birth and the phone is ringing on your hip you can't answer it….that is annoying and I feel bad about that…"*
Telephone triage time is included in my workload allocation (5-point Likert scale from strongly agree to strongly disagree)	Workload statements *''It's not taken into consideration into your workday…or anything like that, how many phone calls you've taken''.* *"I honestly avoid the phone because if you're really busy, the last thing that you need is to be talking to someone for 10 minutes".* *"That phone call could take 5 minutes or 15 to 20 minutes, meanwhile the woman is waiting in her room, thinking what the hell? Where did she go?"*
To what extent do you believe the following skills are required for telephone triage? • Clear speaking voice • Active listening skills • Ability to judge tone of voice of caller • Ability to judge non-verbal cues from the woman • Assessing changes to tone of voice • Assessing breathing tones over the telephone • Eliciting further information from the caller • Giving examples for women to use to describe their current clinical situation	Skills for telephone triage *"Communication, how to ask questions, how to ask the same questions three or four different ways so that you're getting a wide view of the answer that you're looking for or the information that you're looking for".* *"You can't see the person so you are going by the sound of their voices or you know…you are listening to what they are doing when they have a contraction, and maybe other cues about where they are, in a car or you can hear other sounds in the background".*