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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

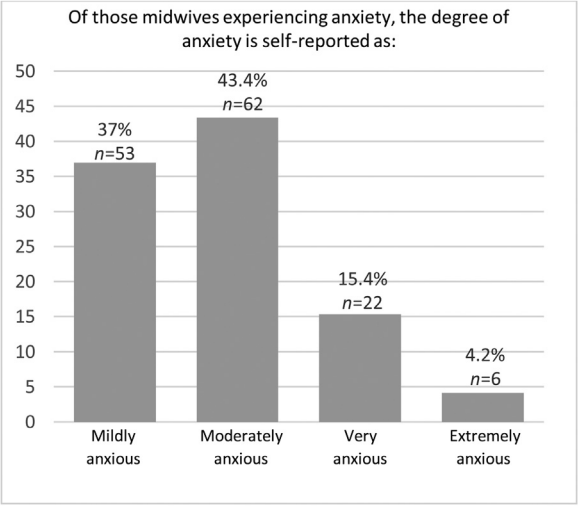

Fig. 1. Midwives self-reported anxiety related to telephone triage.

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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References

(AHPRA), A.H.P.R.A, 2017. Nursing and Midwifery Board of Australia - Registrant Data. pp. 13. .
Albers, M.J., 2017. Introduction to Quantitative Data Analysis in the Behavioral and Social Sciences. John Wiley & Sons, Incorporated, Somerset, Somerset.
Aluttis, C., Bishaw, T., Frank, M.W., 2014. The Workforce for Health in a Globalized Context – Global Shortages and International Migration. Taylor & Francis.
Ament, L., 1999. Quality management activities in the obstetric triage setting. J. Nurse. 44 (6), 513 592-535.
Angelini, D.J., 1999. The utilization of nurse-midwives as providers of obstetric triage services: results of a national survey. J. Midwifery Womens Health 44 (5), 431–438.
Australian Bureau of Statistics, 2017. Births. Australian Bureau of Statistics, Canberra.
Australian Institute of Health and Welfare, 2016. Nursing and Midwifery Workforce 2015. Canberra. .
Ayre, C., Scally, A.J., 2014. Critical values for Lawshe's content validity ratio: revisiting the original methods of calculation. Meas. Eval. Couns. Dev. 47 (1), 79–86.
Bailey, C.M., Newton, J.M., Hall, H.G., 2018. Telephone triage and midwifery: a scoping review. Women Birth 31, 414–421.
Benner, P., 1982. From novice to expert. Am. J. Nurs. 82 (3), 402–407.
Cherry, A., Friel, R., Dowden, B., Ashton, K., Evans, R., Pugh, Y., Evans, Y., 2009. Managing demand: telephone triage in acute maternity services. Br. J. Midwifery 17 (8), 496–500 495p..
Clarke, P., Bowcock, M., Walsh, M., Johnson, V., 2012. Call the midwife: an audit of a telephone triage service. Essent. MIDIRS 3 (10), 17–23 17p..
Creswell, J.W., Plano Clark, V.L., 2011. Designing and Conducting Mixed Methods Research. SAGE Publications, Los Angeles, Los Angeles.
De Vaus, D.A., 2014. Surveys in Social Research. Allen & Unwin, Crows Nest, N.S.W., Crows Nest, N.S.W.
DeVore, N.E., 1999. Telephone triage: a challenge for practicing midwives. J. Nurse. 44 (5), 414 471-429.
Dillman, D.A., Smyth, J.D., Christian, L.M., 2009. Internet, Mail, and Mixed-mode Surveys: The Tailored Design Method. Wiley & Sons, Hoboken, N.J., Hoboken, N.J.
Eri, T.S., Blystad, A., Gjengedal, E., Blaaka, G., 2011. 'Stay home for as long as possible': midwives' priorities and strategies in communicating with first-time mothers in early labour. Midwifery 27 (6), e286–e292.
Fan, W., Yan, Z., 2010. Factors affecting response rates of the web survey: a systematic review. Comput. Hum. Behav. 132–139.
Finlay, D., Brown, S., 2013. Maternity telehealth: ringing the changes. Pract. Midwife 16 (11), 32–34.
Francis, K.L., Mills, J.E., 2011. Sustaining and growing the rural nursing and midwifery workforce: understanding the issues and isolating directions for the future. Collegian 18 (2), 55–60.
Green, J.M., Spiby, H., Hucknall, C., Helen Richardson, F., 2012. Converting policy into care: women's satisfaction with the early labour telephone component of the All Wales Clinical Pathway for Normal Labour (Report). J. Adv. Nurs. 68, 2218.
Huibers, L., Smits, M., Renaud, V., Giesen, P., Wensing, M., 2011. Safety of telephone triage in out-of-hours care: a systematic review. Scand. J. Prim. Health Care 29, 198–209.
IBM Corporation, 2016. IBM SPSS Statistics for Windows. Armonk, New York.
Janssen, P.A.P., Still, D.K.M.D., Klein, M.C.M.D., Singer, J.P., Carty, E.A.M.S.N., Liston, R. M.M.D., Zupancic, J.A.M.D.S., 2006. Early labor assessment and support at home versus telephone triage: a randomized controlled trial. Obstet. Gynecol. 108 (6), 1463–1469.
Kaakinen, P., Kyngäs, H., Tarkiainen, K., Kääriäinen, M., 2016. The effects of intervention on quality of telephone triage at an emergency unit in Finland: nurses' perspective. Int. Emerg. Nurs. 26, 26–31.

Kaplowitz, M.D., Lupi, F., Couper, M.P., Thorp, L., 2012. The effect of invitation design on web survey response rates. Soc. Sci. Comput. Rev. 30 (3), 339–349.
Kelley, M., Mashburn, J., 1990. Telephone triage in the office setting. J. Nurse. 35 (4), 245–251 247p..
Kennedy, S., 2007. Telephone triage in maternity care. RCM Midwives 10 (10), 478–480 473p..
Mahlmeister, L., Van Mullem, C., 2000. The process of triage in perinatal settings: clinical and legal issues. J. Perinat. Neonatal Nurs. 13 (4), 13–30 18p..
Nardi, P.M., 2014. Doing Survey Research: A Guide to Quantitative Methods. Paradigm Publishers, Boulder, Boulder.
Nolan, S., Morgan, J., Pickles, J., Haith-Cooper, M., Phipps, F.M., 2007. Delivery Suite Assessment Unit: auditing innovation in maternity triage. Br. J. Midwifery 15 (8), 506–510.
North, F., Richards, D.D., Bremseth, K.A., Lee, M.R., Cox, D.L., Varkey, P., Stroebel, R.J., 2014. Clinical decision support improves quality of telephone triage documentation–an analysis of triage documentation before and after computerized clinical decision support. BMC Med. Inform. Decis. Mak. 14, 20.
Polit, D.F., Beck, C.T., Owen, S.V., 2007. Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. Res. Nurs. Health 30 (4), 459–467.
Purc-Stephenson, R.J., Thrasher, C., 2010. Nurses' experiences with telephone triage and advice: a meta-ethnography. J. Adv. Nurs. 66 (3), 482–494.
Reinhardt, A.C., 2010. The impact of work environment on telephone advice nursing. Clin. Nurs. Res. 19 (3), 289–310.
Richards, D.A., Meakins, J., Tawfik, J., Godfrey, L., Dutton, E., Heywood, P., 2004. Quality monitoring of nurse telephone triage: pilot study. J. Adv. Nurs. 47 (5), 551–560.
Spiby, H., Walsh, D., Green, J., Crompton, A., Bugg, G., 2014. Midwives' beliefs and concerns about telephone conversations with women in early labour. Midwifery 30 (9), 1036–1042 1037p..
Ström, M., Marklund, B., Hildingh, C., 2006. Nurses' perceptions. Nurses' perceptions of providing advice via a telephone care line. Br. J. Nurs. 15 (20), 1119–1125 1116p..
Weavers, A., Nash, K., 2012. Setting up a triage telephone line for women in early labour. Br. J. Midwifery 20 (5), 333–338 336p..
Webb, S., 2004. Is there a role for triage in midwifery? MIDIRS Midwifery Digest 14 (4), 493–495.
Welkowitz, J., Cohen, B.H., Lea, R.B., Welkowitz, 2011. Introductory Statistics for the Behavioral Sciences. John Wiley & Sons, Incorporated, Hoboken, UNITED STATES.