



New Zealand  
**College of Midwives**

TE KĀRETI O NGA KAIWHAKAWHANAU KI AOTEAROA

# JOURNAL

**He waka eke noa - We are all in this together!**

**Midwives as positive influencers on Samoan families' food literacy**

**Implications of an ultrasound prediction of a large baby**

**Midwifery acupuncturists caring for women with anxiety and depression**

**Women's experiences of accessing midwifery care**

**Protecting the vulvo-vaginal microbiota during pregnancy**

**Promoting positive interactions between midwives and obstetricians**

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# New Zealand College of Midwives Journal

The New Zealand College of Midwives Journal is a double-blind peer-reviewed journal that presents research undertaken within a continuity of midwifery care framework. It is the official publication of the New Zealand College of Midwives and is provided as a benefit to all College members. The Journal is aimed at both national and international readers with an interest in pregnancy and childbearing, including midwives, student midwives, midwifery managers and educators, allied health professionals and consumers.

The Philosophy of the Journal is:

- to promote wāhine/women's health issues as they relate to childbearing wāhine/women and their whānau/families
- to promote the view of childbirth as a normal life event for the majority of wāhine/women, and the midwifery professional's role in effecting this
- to provoke discussion of midwifery issues
- to support the development of Aotearoa New Zealand midwifery scholarships
- to support the development and dissemination of Aotearoa New Zealand and international research into midwifery and maternal and child health

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## EDITORIAL

# He waka eke noa We are all in this together!

Ruth Martis and Lorna Davis, sub-editors

The whakataukī (Māori proverb) above has particular resonance for us as midwives as we head toward the end of yet another challenging year of the Covid-19 pandemic.

This whakataukī reminds us that working in unity and paddling in rhythm are essential when, as a profession, we are all sitting in the same waka (canoe). If the waka moves faster in the rapids, we may feel anxious about the possibility of falling out but we have to trust the person who is guiding the waka to navigate us to the desired destination. This is not always easy to do when we feel out of our depth but, as the familiar midwifery mantra states, sometimes we have to “trust the process”.

The message in the whakataukī can be applied to the current situation in midwifery. At a time when there is uncertainty in the midst of a pandemic, midwives in Aotearoa New Zealand have shown incredible courage, determination and commitment to providing excellent midwifery care for wāhine, hapū and whānau. This is the 57th issue of the College Journal and it showcases the tenacity of midwives in producing interesting, evidence-based and informative research during challenging times. The articles are diverse and serve to increase the growing body of midwifery research in Aotearoa New Zealand.

- The first study published in 2021 demonstrates the role of Aotearoa New Zealand midwives as positive influencers on food literacy with Samoan families.
- The next study explores what happens for women when an ultrasound scan predicts the presence of a large baby in pregnancy and the concern of pathologising large babies for questionable benefits.
- The study that examines the experiences of a Midwife Acupuncturist in caring for women with antenatal anxiety and depression (AAD) shows promising results for acupuncture as an adjunct to usual treatment for AAD.
- The qualitative comparative study that follows considers women’s experiences in accessing midwifery care, encouraging midwives to reflect and review how they provide care in the community.
- A literature review about the microbiota of the vulva and vagina reminds the reader that caring for the vulva and vagina by washing with water is evidence-based practice and promotes the integrity of vulval skin, supports physiological self-cleaning of the vagina and optimises the protective function of the vulvo-vaginal microbiota.
- The last study published in the 2021 series ends this challenging year on a high note. The study explores and defines effective collaboration between midwives and obstetricians at the primary/secondary interface



Ruth Martis



Lorna Davis

in maternity care. We all know interprofessional communication is a critical component of safe maternity care and it is not surprising that the findings of this study identify that effective three-way communication promotes good maternity care.

This collection of research articles is a timely reminder that, even in the face of adversity, Aotearoa New Zealand midwives still rise to the challenge of producing quality research that is both relevant to our unique maternity setting and supports our midwifery community to “paddle” together through these challenging times.

He waka eke noa.

Wishing you a peaceful and restful holiday season from the Editorial Team.

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## AOTEAROA NEW ZEALAND RESEARCH

## The role of Aotearoa New Zealand midwives as positive influencers on food literacy with Samoan families: Report on a small Auckland-based study

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### ABSTRACT

**Background:** Healthy eating is crucial for optimal development during all stages of life and most particularly during pregnancy. According to Stats NZ, *Pasifika* people make up 8.1% of the total Aotearoa New Zealand population. Information from the Ministry of Health suggests that *Pasifika* people have the highest level of food insecurity and the highest level of obesity. Women are more likely than men to be involved with food preparation; therefore, it is important to know to what extent women are aware of what healthy eating means for themselves and their families.

**Aim:** This study aimed to explore an understanding of the levels of food literacy among representatives of three generations of women in five Samoan families; how each of the three generations ensured that their dietary intake contributed to their quality of health; and whether the extent of food literacy was influenced both within and between/across generations.

**Method:** The study used a combined Delphi-Talanoa approach to interview 15 Samoan women about the levels of their understanding of food literacy.

**Findings:** Midwives played an important role in helping pregnant Samoan women understand about healthy eating during pregnancy. Women shared with other female relatives what they had learned about healthy eating from their midwives. Learnings taken from midwives included the importance of choosing healthy foods, portion control and physical activity.

**Conclusion:** All study participants who had received antenatal care in Aotearoa New Zealand mentioned the important role of midwives in increasing their understanding of healthy lifestyle choices. What the women learned from their midwives also informed their wider family or *aiga*.

**Keywords:** dietary intake, food, gestational diabetes, healthy conversations, lifestyle choices, midwives, positive influencers

### INTRODUCTION

This article discusses some of the findings of a study undertaken in the context of a Master of Health Science thesis which examined the food literacy of a group of Samoan women belonging to three generations within five families. In general, women are more likely than men to be involved in the planning and preparation of meals and selection of food (Barreiro-Hurlé et al., 2010). It is therefore important to know to what extent women are aware of how to eat well for their own and their children's health (cf. Machín et al., 2016). A number of participants in the original study mentioned the role of midwives as positive influencers in terms of what women ate and how much they moved.

Healthy eating is crucial for optimal development during all stages of life and most particularly during pregnancy. According to Stats NZ (2019), *Pasifika* people make up 8.1% of the total population of Aotearoa New Zealand (Aotearoa NZ). Information from the Ministry of Health (MOH, 2019a, 2019b) suggests that

*Pasifika* people living in Aotearoa NZ have the highest level of food insecurity and the highest level of obesity. Women are more likely than men to be involved with food preparation; therefore, it is important to know to what extent women are aware of what healthy eating means for themselves and their families. The study this article is based on aimed to explore an understanding of the levels of food literacy among representatives of three generations of women in five Samoan families. It aimed to find out how each of the three generations ensured that their dietary intake contributed to their quality of health; and whether the degree of knowledge about food literacy was influenced both within and between/across generations. The study used a combined Delphi-Talanoa approach to interview 15 Samoan women about their understanding of what are healthy and unhealthy foods, in order to gauge the level of food literacy and how it varies from generation to generation and between families, within a specified ethnic group. The original study did not set out to explore the role of midwives,

but interviews reflected the important role the latter had played as positive influencers on food literacy. The article starts with a brief overview of the literature and methodology before presenting, and then discussing, the findings.

Glossary	
<b>Aiga</b>	extended family, can mean nuclear family, but in this study it refers to a family that comprises several generations
<b>Aotearoa</b>	Māori name for New Zealand; Māori were the first settlers of New Zealand
<b>Fa'asamoa</b>	the Samoan way, which consists of language, customs, culture and traditional norms
<b>Fa'atosaga</b>	midwife, refers to both the traditional Samoan midwife and the registered midwife who has had formal Western midwifery training
<b>Pasefika</b>	the Samoan translation of Pacific/Pasifika, an "umbrella term" that refers to a multi-ethnic group who are of Pacific Islands origin. Pasefika is used rather than Pasifika or Pacific to reflect the Samoan heritage of the lead author, and particularly the Samoan elders and participants whom the lead author had the honour to work with
<b>Talanoa</b>	conversation, to talk; this can be formal or informal

## LITERATURE REVIEW

### Nutrition, food insecurity and obesity over the lifespan

Experts agree that, throughout the life course, a diet of a combination of wholesome, relatively unprocessed foods, mainly plants, is best for health, immunity and longevity (Katz & Meller, 2014). Optimal eating is of paramount importance at times of rapid development and growth, i.e., during pregnancy, childhood, and adolescence. Globally, and in Aotearoa NZ, food-based dietary guidelines (Food and Agriculture Organization of the United Nations [FAO], 2020; MOH, 2018) recommend a variety of foods and frequent movement, particularly among Māori and Pasefika populations (Borrows et al., 2011).

According to Stats NZ (2019), Pasefika people make up 8.1% of the overall Aotearoa NZ population and they have a median age of 23 years. Pasefika people have the highest prevalence of food insecurity; 40% of Pasefika children live in food insecure households (MOH, 2019a) and 67% of the Aotearoa NZ Pasefika population are classified as obese, with female obesity prevalence higher than male at 70% and 63% respectively (MOH, 2019b). Food insecurity, mainly driven by a lack of money for food, is associated with poor nutrition and obesity in children and adults. Many authors have described food insecurity as a growing concern, affecting 7.3% of households in Aotearoa NZ (Jackson & Graham, 2017; MOH, 2012). Poor nutrition, obesity and food insecurity become particularly significant during pregnancy. In South Auckland, the high number of morbidly obese pregnant women has become the new normal (Counties Manukau District Health Board [CMDHB], 2013, 2019; Raven & Stewart-Withers, 2019).

Based on their critical discourse analysis of 30 government, media and academic documents, Raven and Stewart-Withers (2019) argue that society regards pregnant women as being solely responsible for their own nutrition. They argue that, in fact, for some women malnutrition is more the result of food insecurity and disempowerment. They maintain that midwives need to - among other things - advocate for "woman-centred, policy-based approaches towards nutrition, whereby the underlying drivers of poverty are actively addressed" (Raven & Stewart-Withers, 2019, p. 35).

They assert that "[i]f these issues are to be truly addressed then a more nuanced understanding of reasons for women's malnutrition during pregnancy is required" (Raven & Stewart-Withers, 2019, p. 36).

Obesity is a form of malnutrition, with cheap foods not meeting the nutritional requirements for optimal health (Rush, 2009). Signal et al. (2013) believe the lack of food security is a "wicked" problem because it is complicated. There are many causes and no one solution. It is generally agreed that an environmental approach is needed to reduce food insecurity. This includes personal behaviours in the context of the physical, economic, sociocultural and political environments (Signal et al., 2013). However, Raven and Stewart-Withers (2019), also citing Pearce et al. (2011), argue that obesity "is strongly linked to an obesogenic environment, where culture, employment opportunities, the local housing market, and access to transport and healthy food impact on food accessibility and choices" (p. 37). People in the most economically deprived areas live in an obesogenic environment, with a higher than average representation of fast food outlets (Swinburn, 2020). Moreover, for a person being paid low wages, this makes the convenience of tasty but low-nutrient takeaway food all the more attractive. The Samoan women in this study made changes in what they ate and how much they moved, within the constraints of the environment, mentioning midwives as positive change influencers.

### Researcher positionality

The lead author is a Samoan woman and working mother, who has experienced many of the constraints, including but not limited to: commitment to the extended family, church and wider Pasefika community, limited disposable income, time combining work and study, and juggling different work commitments. The lead author grew up in Samoa and completed her schooling there before moving to Aotearoa NZ. This has allowed her further insights into both life in Samoa and life in Aotearoa NZ with all the many challenges. It also gave her an in-depth familiarity with *fa'asamoa* and the ability to interact with the older generation in Samoan, in a respectful and culturally appropriate manner. This was very important in the study as culturally inappropriate communication may be a significant barrier to *talanoa* with older generations. The lead author watched her mother struggle with, and succumb to, the complications of Type 2 diabetes mellitus (T2DM) and this was the main impetus for her to undertake her study. The links between obesity, gestational diabetes mellitus (GDM) and a predisposition to developing the metabolic disease T2DM later in life have been well documented (Agarwal et al., 2018), as has the important role midwives play in providing guidance (Arrish et al., 2016).

The term "health literacy" emerged to describe knowledge and skills individuals need to make informed choices about their health (Vidgen & Gallegos, 2014). The World Health Organization defines health literacy as "the cognitive and social skills which determine the ability of individuals to gain access to, understand and use information in ways which promote and maintain good health" (Nutbeam, 2008, p. 2074). Similarly, food literacy can be related to an individual's understanding of dietary intake and its influence on health (Velardo, 2015). Studies have shown the importance of food literacy (Gallegos & Vidgen, 2010; Vidgen & Gallegos, 2011); the environment, including financial, transport, housing and climate considerations (Cullen et al., 2015); and culture (Snyder, 2009). For Pasefika people, food is also about connectedness and relationships at individual, family and societal levels. Ahio (2011) found that, for Tongan and other Pasefika peoples, providing food might be more about quantity than quality.

The question is whether current health messages are effective at reaching Pasefika people. Researchers such as Savila and Rush (2014) and Okesene-Gafa et al. (2016) emphasise the importance of maternal health and maternal lifestyle choices in relation to the health of their children.

Midwives aim to work in partnership with women (Krisjanous & Maude, 2014). Working in partnership entails empowering women to make informed decisions about their own health and that of their unborn babies. Tui Atua (2009) describes the role of the traditional Samoan *fa'atosaga*, who is seen as the promotor and protector of human life. In their 2013 study, Garnweidner et al. (2013) found that midwives proved to be effective and trustworthy when they promoted a healthy diet and provided associated information to pregnant women, something that also resonates with findings by Wilhelmoova et al. (2015). Szwajcer et al. (2009) argue that midwives can help pregnant women by addressing specific nutrition-related questions during consultation. Similarly, Boyle and colleagues (2016) assert that it is important to develop a partnership relationship between midwives and pregnant women, which will enable midwives to provide care and support in response to pregnant women's needs. There have been no previous reports in Aotearoa NZ about the role of midwives in the food literacy of Pasefika women, nor of the intergenerational transmission of knowledge.

The current paper reports on semi-structured interviews with 15 women from five Samoan families in the South Auckland area of Auckland, Aotearoa NZ, and includes their comments on what they learned from their midwives.

## AIM

The aim of the original study (Wong Soon, 2016) was to firstly explore the extent of understanding of food literacy among three generations of women in Samoan families, all related along matrilineal lines. Secondly, the study aimed to examine how each of the three generations navigated the food system to ensure that their dietary intake contributed to the quality of their health and was consistent with nutritional recommendations. Lastly, the study aimed to identify whether food literacy was influenced within a generation (intragenerationally), or between and across the generations (intergenerationally), or both. The aim of this article is to report on the role of midwives as positive influencers on raising the level of women's food literacy.

## METHOD

The study involved a modified Delphi method in combination with the *talanoa* approach.

The Delphi approach involves a staged process and uses a panel of experts (Fletcher & Marchildon, 2014; Graham et al., 2003; Norcross et al., 2002; Rowe & Wright, 2011). This study did not use the full traditional Delphi method but used elements from the method to find out the most consistent consensus, based on the views of participants who are the "experts" in the topic being examined. The initial round of the Delphi process (Round One) enabled the author to generate ideas and uncover the issues relating to the topic being examined. The researcher summarised the participants' first interviews and provided feedback to the participants who then reviewed and discussed their initial responses in Round Two until consensus was reached.

Tunufa'i (2016) traces the etymology and meaning of *talanoa* and its relevance to different Pasefika populations. Clery (2014) describes *talanoa* as to chat, to yarn, and to tell stories, writing: "[t]alanoa is context specific and responds to the needs of people

in a given situation... It functions to strengthen relationships" (p. 108). For their study, Schleser and Firestone (2018) describe *talanoa* as an "appropriate Pacific research method... because it is based on a deep interpersonal relationship between the participants" (p. 165).

The lead author combined the Delphi and *talanoa* approaches because this allowed her to have multiple communications with each participant. The lead author particularly wanted to explore the role the extended *aiga* has on food choices.

This combined technique was appropriate to use in this study because of the focus on drawing views from the Samoan women as experts and what it meant for their health. All participants were related along the maternal side because the lead author wanted to see if there was any intergenerational influence affecting these women in terms of food literacy.

Two rounds of Delphi-Talanoa sessions were completed. The 15 semi-structured interviews in the first round ranged in length from 30 minutes to two hours. A summary of responses was reviewed and clarified in the second round.

## Recruitment and selection

Participants were recruited, using the snowballing technique (Streeton et al., 2004), through churches, school alumni and village subcommittee networks in the South Auckland area of Auckland, Aotearoa NZ. While this is not a usual recruitment technique used with the Delphi method, the *talanoa* approach involves stakeholders and the women interviewed were stakeholders and experts because they were Samoan women involved in making food choices for their families.

## Analysis

All interviews were transcribed by the lead author. NVivo 11 (Bazeley & Jackson, 2013) was used to extract, code and recode the themes emerging from both rounds of *talanoa*. The transcribed interviews and coding were reviewed with the thesis supervisors and co-authors (IC, ER) for consistency and validity.

The authors used thematic analysis to analyse recurrent themes from the *talanoa*.

## Ethics

Ethics approval was granted by the Auckland University of Technology Ethics Committee (AUTEK) under number 15/179.

## FINDINGS

The 15 women participants were divided into three groups, in accordance with their status within the families. The oldest group are referred to as "the grandmothers" and ranged in age between 65 and 85. Two of the five grandmothers had completed primary education; while two had completed secondary education (in Samoa) and one had completed tertiary level education in both Samoa and Aotearoa NZ. The second group of women participants are referred to as "the mothers". They ranged in age between 41 and 59; four had completed tertiary level education in Aotearoa NZ and one had completed secondary schooling in Samoa. The youngest participants are referred to as "the granddaughters" and ranged in age between 18 and 38. Three of the granddaughters had tertiary level education and two had completed secondary education.

The following final themes emerged from the two rounds of *talanoa*:

1. An understanding of food literacy
2. The role of midwives and other health professionals

3. The importance of attending community programmes
4. Sharing information within the family environment

The focus of this paper is on themes two and four; the other themes have been published elsewhere (Wong Soon, 2016).

## The role of midwives in all five families

### Family 1

In Family 1, Mother 1 (M1) explained how midwives had encouraged her understanding of the importance of reading food labels for information about nutrients. Pointing at the nutritional label on a loaf of brown bread, she said:

*Before I didn't understand it. When the health professionals such as my midwives informed me, I started researching things like nutrients and what was on the back here.*

Within Family 1, M1 was the main informant who shared what she had learned in terms of health and food literacy with other women in the family. She said that her midwife had emphasised the importance of healthy eating during pregnancy. M1 said:

*During my pregnancies, there was a lot of sessions with midwives and pregnant women about balanced meals and cooking food such as preparations and things that should not be mixed in food or you would get sick. That was the time I got more information. They also advised me to attend community health programmes that some health professionals provide services to help improve knowledge on a healthy lifestyle from those programmes.*

*Reading this [referring to brown bread nutritional information] and knowing what was good for me when I was pregnant. My midwives and family doctor showed and explained these, making me understand and I got to eat in moderation.*

Based on M1's quote above, she shared this information with Grandmother 1 (GM1) and Granddaughter 1 (GD1) and other members of her aiga. M1 conveyed to the other two family members the benefits of eating healthy food and in moderation. Other health professionals mentioned included the family doctor, diabetes nurse and dietitian.

### Family 2

In Family 2, it was the grandmother (GM2) who shared her knowledge of food literacy and healthy eating with other members of the aiga. GM2 had continued her practice of having a vegetable garden when she moved to Aotearoa NZ from Samoa. GM2 had also undertaken tertiary level training in nutrition at the University of the South Pacific and shared her knowledge with her family. She said:

*It is good because of different nutrients that are used in your body – those nutrients that we get from different foods such as iron, calcium, it is good for your eyes; you will also get different vitamins that are good for your bones. It is good [for] the blood and the body.*

GM2's daughter (Mother 2 [M2]), said that her midwife and family doctor had also provided her with important information about a nutritional dietary intake and a healthy lifestyle. The granddaughter (Granddaughter 2 [GD2]) specifically mentioned the advice she received from her midwife about maintaining a healthy diet and body weight, through eating a variety of nutritious foods, portion control and physical activity. GD2 said:

*When I was pregnant ... I tried to eat good food for her [pointing at her 2-month old daughter] ... Eating heaps of vegetables, fish, chicken and stuff... In the right amount, because I don't want to overeat.*

GD2's midwife had advised her that any choices GD2 made could affect her baby's health, and GD2 commented on this in the context of the life-changing experience of becoming a mother.

### Family 3

In Family 3, the mother (Mother 3 [M3]) and the granddaughter (Granddaughter 3 [GD3]) acted as main sources of information for other family members. Again, different health professionals had played a role in encouraging the family's understanding of a healthy diet and lifestyle choices. GD3 stated that she had learned most from midwives as they had been more specific and "simple" in how they explained to her what she should do in order to have healthy pregnancies. She said the midwives were the ones who had recommended that she should take part in community health classes, the better to manage her GDM. GD3 said:

*I know it is important to eat a balanced meal. A portion of meat, some vegetables. I feel it is important to know how much I am eating. If this is what I get on my plate, I eat it, and not go for a second serving, because you will get sick. This was the advice that I got from my midwives and family doctor during all my pregnancies, because I had diabetes during my pregnancies.*

One midwife had told her that attending community health programmes would help her not only find out about GDM, diet and physical activity, but also about health checks, walking groups and other community programmes where she could improve her knowledge around health. GD3 had told her midwife that, since she was her grandmother's fulltime carer, she would ask her grandmother (GM3) to come along to these community programmes. Both the midwife and the family doctor told GD3 that there were in fact special community programmes for older people. Overall, she had found the midwife's advice extremely beneficial, because by coming along, GD3 had learned about healthy living for seniors.

### Family 4

In Family 4 it was Mother 4 (M4) who was the main source of information for the rest of the family. M4 had been diagnosed with GDM and her midwives had encouraged her to make changes to her diet and remain physically active, in order to have healthy pregnancies. M4 said:

*My family doctor and midwives advised me not to overeat, but [eat] in the right portions, in order to have healthy pregnancies. From there on I knew that it was not [about] eating a lot to keep my babies strong during my pregnancies, which is what my mother always told me: to eat more to keep my unborn baby strong during pregnancy.*

M4 in turn encouraged her mother (Grandmother 4 [GM4]) to make healthy lifestyle changes and attend community health programmes for the sake of the health of the "grand- and great-grandchildren". Granddaughter 4 (GD4) mentioned that several family members, including her grandmother (GM4), had been diagnosed with borderline hypertension and diabetes, and that this had been a real impetus for her to make healthy lifestyle changes. She said she had learned a lot from her mother (M4), about healthy eating. This in turn had motivated GD4 to learn more about nutrition and to pursue health studies at one of the tertiary institutes.

### Family 5

A health scare had also been the impetus for the women in Family 5 to make healthy lifestyle changes, after Grandmother 5 (GM5) had suffered a stroke. Her daughter (Mother 5 [M5]), was the main source of advice on a healthy lifestyle. M5 believed that making healthy changes in terms of food and fitness should start within the home and that it was her task as a mother to make sure such changes took place. She said:

*My mother does not know [referring to nutritional information and other food labels] and my children are young. It is my task as a mother to know this information in order to cook balanced meals for my family.*

M5 said her midwives had taught her how to read food labels during pregnancy and that her pregnancies had changed her "view on food" and her habits. She had been diagnosed with GDM during her first two pregnancies and her midwives had asked her to try and be more physically active and change her dietary intake. M5 said:

*My midwives advised me when I got pregnancy diabetes. That was when I decided I must practise a healthy lifestyle with my family...my doctors also advised me and I saw that it was a mother's responsibility to prepare healthy meals for her family. No mother would want to see her children getting sick.*

M5 in turn had taught her daughter about the importance of a healthy diet and played a role in her joining the gym. Granddaughter 5 (GD5) referred to this sharing of information when she said:

*My mum always talks about healthy food and what's healthy for us.*

### DISCUSSION

Two things became very clear. Firstly, midwives were positive influencers within Samoan families; their influence related to improving an understanding of choices impacting on the health of the unborn child. Midwives talked about portion sizes and vegetables but also made women aware of the importance of staying active and of programmes in the community. Secondly, whatever women had learned from the midwives, they then shared within the family. The positive influence of midwives resonated long after women had given birth. Mothers shared with their mothers – the grandmothers in the study – and also with their daughters, as they grew up.

The original study did not set out to explore the role of midwives or other positive influencers, and participants were not asked *why* they had felt supported by midwives. This was probably due to the original nature of the research with its focus on food literacy, rather than positive influencers, that such questions were not explored more in-depth. Similarly, women did not share comments about the ethnicity or culture of the midwives; however, some did share that in general they enjoyed having health conversations in their home language (i.e., Samoan). This might mean that it would be good to encourage more Samoan - and other Pasefika - women to become midwives.

The authors would speculate that midwives working in partnership with, and empowering, women resulted in the former being viewed by the women as positive influencers. Women then took control of what they were able to implement, within the constraints of their own social, financial and other circumstances. What came out through many interviews was that midwives shared information with women. Previous studies have shown that positive influencers

can only be positive influencers when they have the trust of the other person, and we can assume this was the case here.

### STRENGTHS AND LIMITATIONS

Limitations of the research include the small number of participants. The snowballing method may have led to "like" participants referring the researcher to each other. The findings of this small study add weight to the likelihood of the important role midwives play in ensuring the health of Samoan mothers and their families. Midwives equipping women with important information about nutritious food, portion control and physical activity had consequences in "ever increasing circles" in all of the families involved in the research.

As the findings are not generalisable and the study did not focus on positive influencers, it would be useful to conduct research that specifically focuses on midwives' role in influencing women's food and other lifestyle choices, particularly amongst groups with reported low levels of health literacy and/or high incidence of GDM.

### CONCLUSION

The important role of midwives in increasing women's knowledge of healthy lifestyle choices was relayed by all those participants who had received antenatal care in New Zealand: M1, M2, M4, M5, GD2 and GD3. These participants all agreed that midwives had been their first source of advice in helping them identify the type of food that would benefit both the mother and her unborn child. They received information from midwives related to reading nutrition labels to identify nutritious food stuffs, physical activity, portion control, free health checks, and participating in community health programmes. Previous studies (Arrish et al., 2017) found that guidelines for Australian midwives as to how to provide information on food choices during pregnancy may be vague, yet the present study suggests that midwives were very successful in imparting important dietary advice to the Samoan women interviewed. The women interviewed followed this advice and also shared it with other women in their aiga. It is interesting to note that while the obesogenic environment itself did not change, women started making changes. Women made changes because they believed these were important for their families.

It is important that midwives are aware of what works and what does not, and that guidelines around healthy conversations in pregnancy are developed, as was the case in New Zealand (GRAVIDA, 2013). The importance of food literacy among Samoan women in furthering better health outcomes for themselves and their families cannot be overstated.

Women involved in meal preparation ensured healthier food choices were put in place to benefit the entire family. This aligns with findings by Rosenkranz and Dziewaltowski (2008) and Barker (2015) that parents and families influence children's dietary habits and that the home food environment is an important factor of this. Women felt it was their role to share health-related information with other members of the wider aiga. Increased food literacy also enabled women to ask more pertinent questions of their family doctors, which is aligned with findings by Crezee and Roat (2019) about the similar effect of improving health literacy in low-literate families. There is no doubt in the authors' minds that this was helped by midwives working in partnership with women, and talking to them on an equal footing. Trust played an important role and this is again in line with findings by Crezee and Roat (2019). Women trusted midwives and this trust resulted in midwives being positive influencers on the level of these Samoan women's food literacy.

## CONFLICT OF INTEREST DISCLOSURE

The authors declare that there are no conflicts of interest.

### Key points

- Midwives played an important role in helping a group of pregnant Samoan women understand about healthy eating during pregnancy
- In the study, women shared what they had learned about healthy eating from their midwives with other female relatives
- Learnings taken from midwives included the importance of choosing healthy foods, portion control and physical activity

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## LITERATURE REVIEW

## A weighty issue: The implications of an ultrasound prediction of a large baby in pregnancy

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### ABSTRACT

**Introduction:** The assessment of fetal growth in Aotearoa New Zealand is governed by a largely medical model of care which highly values the purported objectivity of sonographic assessment. Ultrasound scans are an increasingly normalised part of pregnancy care, and expectant parents may advocate strongly for access to them. It could be questioned whether the increasing number of scans is aligned with clinical need. This paper presents a literature review that explores the implications of an ultrasound diagnosis of a large baby during pregnancy.

**Method:** Databases searched were CINAHL, PubMed, Proquest, and Google Scholar. Search terms used were “macrosomia”, “large for dates” and “large for gestational age”. This search was first undertaken in May 2019, and then repeated in November 2020.

**Findings:** Sonographic assessment of fetal size can be inaccurate and the existence of a predicted fetal weight on scan increases the likelihood of birth interventions, regardless of the baby’s actual size. While there are potentially negative outcomes associated with a larger baby, it is unclear whether birth interventions will significantly reduce the occurrence of these outcomes. There is limited research that focuses on the parents’ experience of having a predicted large baby, offering contradictory insights, which suggests the influence of conflicting meanings applied to large babies and ignoring the experiences of women whose babies were predicted to be large but were born “normal” sized.

**Discussion:** Midwives are encouraged to openly discuss with women the limitations in available evidence in this area. Midwives can consider the context of the woman and whānau (wider family), and how they may assess risk uniquely. Finally, midwives can honour the woman and whānau as the decision-makers in their own experience. There are further opportunities for research to provide a counter-narrative to medicalising discourses about large babies, grounded in a midwifery belief in normal birth.

**Conclusion:** Midwives and women are drawn into a risk-centric paradigm that pathologises large babies for questionable benefit. To support informed decision-making within the midwifery partnership, midwives need to critically evaluate existing research and communicate its limitations and risk-centric orientation.

**Keywords:** macrosomia, large baby, ultrasound, risk, normal birth, informed decision-making

### INTRODUCTION

Ultrasound is now omnipresent in Aotearoa New Zealand (NZ) maternity care. The Ministry of Health (MOH) co-funds two routine ultrasound scans in all pregnancies (MOH, 2019a); however, Aotearoa NZ midwives have raised concerns about a culture of expectation around frequent additional routine scans, overuse of scans, and unnecessary social scans (Morris, 2020; New Zealand College of Midwives, 2019). The complexities of ultrasound, as both a medical intervention and a socio-cultural practice, have been well established in the literature (e.g., Frost & Haas, 2017). Ultrasound is frequently framed and understood as an opportunity to meet the baby and gain reassurance that all is well with the pregnancy (e.g., Thomas & Lupton, 2016). However, in practice, ultrasound can irrevocably change the clinical pathway of pregnancy and childbirth care as well as expectant parents’ confidence, regardless of actual improved birth

outcome. Whether a scan is undertaken specifically to obtain an estimation of the baby’s size, or whether this is an incidental finding in a scan undertaken for another reason, there is no doubt that the finding of an apparently large baby on ultrasound has significant implications for the childbirth journey (Blackwell et al., 2009; Jarvie, 2016; Peleg et al., 2015; Reid et al., 2014; Sadeh-Mestechkin et al., 2008).

This paper presents a literature review that explores the implications for midwifery practice of an ultrasound prediction of a large baby during pregnancy. The literature reveals current limitations in existing evidence relating to the identification and management of predicted large babies and the dominance of risk-centric approaches typical of a medicalised model of maternity care. We begin with a consideration of how large babies are defined and discuss current practices related to prediction of this during pregnancy. We then explore the literature relating to the

accuracy of an ultrasound estimated fetal weight (EFW), clinical outcomes in the presence of a predicted large baby and women's experiences of this phenomenon. We highlight the dominance of a risk-centric paradigm in existing literature relating to the prediction of a large baby during pregnancy and the resulting maternity care pathways intended to manage them. As a result, large babies are being constituted as a pathology of pregnancy that requires medical surveillance and management. We question the implications of this framing for midwifery practice grounded in normal birth, for the information shared with parents and for their informed decision-making. We conclude by presenting a discussion about current best practice midwifery care, taking into account the limitations of existing evidence and the existing bias towards risk. We affirm the need for further research to support midwifery practice in relation to the care of expectant parents with predicted large babies by making room for a midwifery belief in normal birth and for other cultural understandings about large babies that are de-pathologising.

### Rationale for literature review

Midwifery practice in Aotearoa NZ is grounded in a fundamental belief in normal birth. This includes the belief that normal birth supports optimal outcomes for birthing whānau and that most well women want to, and can, give birth normally (New Zealand College of Midwives, 2009). The midwife is seen as having a key role in protecting the physiological process of pregnancy and birth at all levels of her interaction with birthing whānau (New Zealand College of Midwives, 2009). In the face of rising levels of unnecessary intervention occurring in childbirth, both internationally and in Aotearoa NZ, this increasingly requires midwives to take a critical and questioning stance on existing evidence in support of medical interventions during pregnancy and childbirth (New Zealand College of Midwives, 2009). In particular, midwives need to be alert to the extent to which existing evidence underpinning medical interventions is partial and influenced by a medical paradigm grounded in pathology and risk. Various scholars have observed that risk has become a pervasive feature of a dominant medical paradigm, which has become authoritative and hegemonic in contemporary maternity care (e.g., Chadwick & Foster, 2014; Davis-Floyd, 2018; Lupton, 2012). The medical model of childbirth promises to predict and minimise risk but, in the process, has redefined childbirth as a medical event, renders a normal event pathological and is argued to have disempowered birthing people (Chadwick & Foster, 2014). The language of risk as it has become embedded in contemporary childbirth practices emphasises expert and evidence-based knowledge, prediction and control. To minimise risk, childbirth must therefore be managed by experts, constantly monitored and is subject to a series of investigations in order to probe dysfunction and abnormality (Chadwick & Foster, 2014). Ideas about risk in childbirth are reshaping childbirth but are also socially constructed and threaten a midwifery belief in normal birth. Midwives, therefore, have an important role to play in engaging critically with risk-centric discourses that are implicated in the pathologisation of large babies and other sites of medicalisation. This awareness will help ensure midwives can fulfil our professional responsibility for evidence-based practice alongside, and in tandem with, our belief in normal birth and our professional responsibility to uphold women's right to make informed decisions throughout the childbirth experience (New Zealand College of Midwives, 2009).

The ultrasound prediction of large babies provides a fertile example of the need for midwives to evaluate and engage critically with the evidence underpinning childbirth interventions. In Aotearoa

NZ, midwives' practices in relation to fetal growth assessment are guided by professional frameworks laid out by the New Zealand College of Midwives (the College). As part of the *Choose Wisely* initiative, the College (2018) recommends that, "in the absence of other clinical concerns ultrasound scans should not be offered routinely to check if a baby is bigger than normal for its gestational age" (para.3). This statement is further clarified in the draft practice guidance *Assessment and promotion of fetal wellbeing during pregnancy*, which does not include fundal height measurements above the 90th percentile in its list of potential growth issues (New Zealand College of Midwives, 2021). Nationally, district health boards are requiring customised growth charts to be used for all pregnant women (Auckland District Health Board, 2015), and the College has suggested a preference for recording fundal height on a customised growth chart (New Zealand College of Midwives, 2021). Customised growth chart protocols themselves do not suggest that an ultrasound scan is necessary for a fundal height measurement over 90th centile (Perinatal Institute for Maternal and Child Health, 2020). However, the MOH's *Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines)* direct midwives to offer referral for obstetric consultation where there is an EFW on a customised growth chart that is greater than the 90th percentile (MOH, 2012). Midwives themselves acknowledge an increasing reliance on ultrasound scans, while at the same time questioning their accuracy and expressing reservations about the increasing medicalisation of pregnancy through reliance on technology (Morris, 2020).

The rationale for pregnancy ultrasound scans is to identify anomalies in order to improve pregnancy and childbirth outcomes through responsive care (MOH, 2019a). However, concern has been expressed by government maternity advisors that pregnancy ultrasound numbers are increasing and that a scan may at times be performed without clinical need (National Maternity Monitoring Group, 2015). Further, it is recognised that there is an increase in birth interventions nationally (MOH, 2019b). A consideration of the literature in relation to ultrasound scans and birth outcomes may illuminate the question of whether an increase in ultrasound scans may contribute to an increase in interventions.

Women also bring their own set of meanings and expectations to pregnancy ultrasound scans, beyond those intended in clinical care. These meanings are shaped by the social, cultural, and political implications of technologically mediated pregnancies, that reconfigure the relationship between pregnancy, the fetus, and society (Lupton, 2012; Taylor, 2008; Thomas & Lupton, 2016). Ultrasound scans have been shown to hold significance for expectant parents as an opportunity to meet and bond with their babies, to be reassured about the progress of their pregnancies and to connect with family and friends throughout the transition to parenthood (Mitchell, 2004; Taylor, 2008). Expectant parents frequently strongly advocate for access to scans during pregnancy (Thomas et al., 2017).

However, while ultrasound technologies have been embraced as a social-cultural practice, they are not benign. Critical midwifery and feminist scholars have pointed to the ways in which ultrasound scans can disembodify and disempower pregnant people, increase vulnerability to surveillance and control, induce anxiety in expectant parents, and medicalise otherwise normal and healthy pregnancies (Frost & Haas, 2017; Lupton, 2012; Mitchell, 2004; Roberts, 2012; Taylor, 2008; Thomas et al., 2017). Where there is a growing level of technological monitoring, there comes an increased awareness and decision-making around management of risk. This greater discussion of risk encourages greater dependence

on technology and undermines low intervention approaches that are the focus of midwifery care (Lupton, 2012; Van Wagner, 2016).

The clinical, socio-cultural and political implications of pregnancy ultrasound scans form an important backdrop to health professionals' recommendations and women's decision-making around a prediction of a large baby in pregnancy. Ultrasound scans are an increasingly normalised and expected part of pregnancy care and, as a result, are identifying variations in fetal size in greater numbers. It is therefore timely to understand the implications of a large baby prediction for care pathways as well as the experiences of expectant parents. This can help inform and support holistic midwifery care in this context.

## METHOD

For each aspect of the review, a number of databases were searched (CINAHL, PubMed, Proquest, and Google Scholar), and references for relevant papers were also hand searched. This search was first undertaken in May 2019, and then repeated in November 2020. Search terms included “macrosomia”, “large for dates” and “large for gestational age”. Further specific search terms relating to the subsequent sub sections were: fetal weight estimation, ultrasound, accuracy, risk, outcome, complications, women, pregnant people, experiences and perceptions. A broad date range from 1995 to 2020 was chosen. Papers that were published in a language other than English were excluded.

## FINDINGS

This section reviews literature relating to how large babies are clinically defined (macrosomia), the accuracy of EFW by scan in the diagnosis of macrosomia, potential clinical outcomes for mothers and babies and, finally, parents' experiences of a prediction of a large baby and the resulting care pathways. Note that we have chosen to use the term “large babies” except where specifically discussing research findings that reference macrosomia, as we believe that the clinical term macrosomia is value-laden with a pathological view of large babies. “Large” or “big” themselves are not value free but lack the same extent of medicalising stigma as macrosomia. Note also that while we refer to “women”, we acknowledge that not all people who are pregnant and give birth are women and we recognise gender-diverse pregnant people as consumers of maternity care.

### Assessing babies for largeness in pregnancy

The clinical term macrosomia is used to describe a large baby. There are inconsistencies in how the literature defines macrosomia, with definitions largely varying between a birthweight of greater than either 4000g or 4500g (Colman et al., 2006; Ray & Alhusen, 2016). In Aotearoa NZ, reporting by the district health boards and the MOH focuses on the latter, the justification for which is not clear. In 2017, 2.4% of babies were 4500g or greater at birth (MOH, 2019b). Other terminology that is frequently used in this space is “large for gestational age” which is defined as a baby having an EFW above the 90th customised percentile (New Zealand College of Midwives, 2021).

The actual size of the baby, whether large or small, can only be confirmed once the baby is born. However, providers of antenatal care place great importance on the estimation of fetal size, particularly regarding identifying smaller babies, who are at greater risk of poor outcomes such as intrauterine growth restriction and stillbirth (Figueras & Gardosi, 2011; Stacey et al., 2011). Three main methods for estimating fetal size during pregnancy are described in the literature: clinical (palpation and fundal-symphysis height measurement), maternal estimation and

sonographic assessment, with each having their own limitations (Ray & Alhusen, 2016). Abdominal palpation and maternal estimation both rely heavily on the subjective experience of either the midwife or the mother, and can therefore occupy a more marginal status in fetal size estimation (Morris, 2020). Very limited research has explored the utility of maternal estimation (embodied knowledge) in assessing fetal size, suggesting a devaluing of women's own embodied experiences as part of clinical assessment in antenatal care (Chauhan et al., 1992; Morris, 2020; O'Reilly-Green & Divon, 2000). Inversely, ultrasound is positioned as an objective, and therefore more accurate, approach to the assessment of fetal size. There is a tension between the clinical and the social meanings applied to ultrasound, in that ultrasound is considered objective and accurate, but the reality is that ultrasound uses biometric measurements to predict weight. Such measurements can only ever be just that – a prediction, i.e., not necessarily accurate.

We will now discuss the complexities (and limitations) of the use of ultrasound for the estimation of fetal weight, as identified in the literature.

### Estimating fetal weight: complexities

A number of studies have found that the use of ultrasound for the estimation of fetal weight is substantially inaccurate, particularly for larger babies (e.g., Chauhan et al., 2005; Colman et al., 2006; Milner & Arezina, 2018; Peregrine et al., 2007; Stubert et al., 2018). Chauhan et al. (2005) reviewed 20 papers that calculated the sensitivity and specificity of an ultrasound estimation of fetal weight of 4000g or greater. They found that while scans' ability to correctly predict normal-sized babies in uncomplicated pregnancies (specificity) was relatively high (68%-99%), the ability to correctly predict larger babies (sensitivity) was much lower (12%-75%). Peregrine et al. (2007) found that sensitivity for predicting large babies was 40%-48% whereas specificity for predicting normal-sized babies is much higher (76%-83%).

A local retrospective study undertaken in Aotearoa NZ found that 75% of EFWs were within 10% of actual birthweight but that, for 25% of women, the margin of error was greater than 10%. For 3% of women, the margin of error was greater than 20% (Colman et al., 2006). This study affirmed that there is “no formula for estimating fetal weight [that] has achieved an accuracy which enables us to recommend its use” (Colman et al., 2006, p. 6). More recently, Stubert et al. (2018) examined early labour ultrasound in a German hospital. They found that the EFW was within a 10% margin of error in 72.2% of cases (and only 45.2% where the scan was undertaken by a less experienced doctor). EFW was more frequently overestimated in smaller babies and underestimated in larger babies. Despite the study embracing a very medico-legal approach, noting the possible forensic relevance of EFW in the case of birth-related damage and subsequent litigation, it concluded that EFW at term was not reliable for the prediction of macrosomic babies, and should not be recommended.

How this information is presented to families has the potential to greatly affect their experiences and decision-making process. Ray and Alhusen (2016) describe a case study in which a woman underwent a scan which reported an EFW of 4500g at term. She was advised to have an elective caesarean due to risks to herself and her baby of planning a vaginal birth. She duly agreed, gave birth to a 3800g baby by caesarean, and suffered some distress about whether this was a necessary intervention. This review stressed the importance of open communication and shared decision-making, considering both the inaccuracy of the EFW method and the risks inherent in both caesarean births and inductions. Despite this,

women who undergo late pregnancy scans in Aotearoa NZ may still be offered the diagnosis of macrosomia based on a predicted fetal weight (Horizon Radiology, personal communication, February 1, 2019).

### Clinical outcomes

Any search for literature on large babies reveals a surfeit of quantitative-based, obstetric-dominated analyses that uncritically describe the clinical outcomes associated with a diagnosis of macrosomia. These studies problematise larger babies and position them as a pathology of pregnancy. Macrosomia is associated with a range of poor obstetric outcomes, including higher rates of shoulder dystocia, brachial plexus injuries, low Apgar scores, admission to special care units and neonatal asphyxia (e.g., Jolly et al., 2003; King et al., 2012; Mocanu et al., 2000; Zhang et al., 2008). Women are described as more likely to experience prolonged labour, assisted vaginal birth, emergency caesarean, third degree perineal tears and postpartum haemorrhage (Jolly et al., 2003; Mocanu et al., 2000; Zhang et al., 2008).

While it is important for both midwives and women to understand the potential negative outcomes that may arise with a larger baby, it is possible to take a more critical approach to the centering of risk in the existing evidence related to macrosomia (Bacchi, 2012). A critical approach allows midwives to consider the ways in which medical knowledge about babies' size is not entirely objective and value free, and may only reflect a partial story about the relationship between EFW and birth outcomes (Bacchi, 2012). Studies pointing to the poor outcomes associated with macrosomia sit within a framework where the mere presence of an EFW (regardless of actual birthweight) has been shown to increase the likelihood of interventions. Stubert et al. (2018) found that the existence of an EFW increased the likelihood of an abnormal cardiotocography (CTG) finding, an obstructed labour finding, and an emergency caesarean. This was regardless of the actual size of the baby the woman gave birth to. They hypothesised that the obstetricians were hyper alert to deviations of labour and seeking an indication to perform a caesarean following the estimation of fetal weight. Another study also found that when there was an EFW of 4000g to 4500g, the caesarean rate was two to two-and-a-half times higher, regardless of actual birthweight (Melamed et al., 2010). A recent systematic review found that EFW predicting a large baby does not have a clinically significant effect on successfully predicting shoulder dystocia (Moraitis et al., 2020), with one study identifying numbers needed to treat, which can provide more tangible information for helping communicate the uncertainty surrounding EFW and poor outcomes. This study focused on the outcome of permanent brachial plexus injury as more clinically significant than shoulder dystocia, or maternal injuries from shoulder dystocia, which both tended to be short term in regard to consequences for mother and baby (Rouse et al., 1996). They found that for each potential permanent brachial plexus injury prevented by a policy of planned caesarean with an EFW of greater than 4500g, 443 caesareans were performed on diabetic women, and 3695 caesareans on non-diabetic women. For comparison, a 2018 Canadian study found that 135 repeat caesareans would need to be performed to avoid one case of uterine rupture including scar dehiscence, or 372 to avoid a case of uterine rupture not including dehiscence (Joseph et al., 2018).

When assimilating data on complications, it is important to consider those studies that have found no improvement in outcomes despite preventative interventions. Stubert et al. (2018) found that even with an increased rate of caesarean birth for suspected macrosomia, short term fetal and maternal morbidities

were not improved. Another study compared outcomes for women with correctly predicted macrosomia and those with unsuspected macrosomia and found that the likelihood of caesarean was nine times higher for women with a correctly estimated macrosomic baby than for those where it was not predicted (Peleg et al., 2015). Importantly, there was no commensurate decrease in the rate of shoulder dystocia despite the increase in the number of caesareans (Peleg et al., 2015).

Other studies have found that induction of labour and planned caesarean showed no decrease in shoulder dystocia, and that induction resulted in a higher rate of caesareans with no improvement in perinatal outcomes (Pundir & Sinha, 2009; Sanchez-Ramos et al., 2002). It is barely mentioned in much of the literature, but we must acknowledge the hidden group of people who may be impacted by recommendations to undertake interventions where a large baby is predicted but does not eventuate. The nature of this retrospective diagnosis means that these women may have been exposed to unnecessary interventions, which carry their own risks, for no possible improvement in outcome (Ray & Alhusen, 2016).

### Women's experiences and informed decision-making

This lack of certainty about the benefits of obtaining a prediction of a large baby is amplified when insight into parents' experiences of a macrosomia is added to the mix. There is very limited research that has asked how expectant parents are affected by being told they are carrying a large baby, and what does exist is restricted to women who have been confirmed postnatally to have a large baby. There is no exploration of the experiences of whānau Māori (the indigenous people of Aotearoa NZ), and there are no Aotearoa NZ-based studies. The experiences of those people who were incorrectly predicted to be carrying a large baby have also not been considered at all in research to date, which is a significant gap in the literature.

A key piece of existing research on women's experiences by Reid et al. (2014) asked women postnatally about their experiences of receiving a diagnosis of macrosomia during their pregnancies. This Northern Ireland study was a qualitative interview-based study of eleven women. Ten out of the eleven women were multiparous, and the sample was purposively selected with a 50/50 split of caesarean and vaginal birth. Key findings included uncertainty around whether baby was large or not (and some women felt their own predictions around this were ignored), both fear and calm about the impending birth, and a notable lack of control around their input into planning for birth. There was no specific mention of place of birth; however, women noted a sense of fear and anxiety particularly around the size of the baby and proposed mode of birth. Women also experienced challenging antenatal symptoms relating to the size of their babies and had concerns about birth trauma. Regarding their interactions with health professionals, women experienced both positive and negative interactions, valuing the professionalism of their caregivers but at other times not feeling listened to, with little voice in decision-making.

The study also explored women's perceptions around macrosomia itself. Women generally felt positively about their large babies. Perhaps influenced by the activity/nutrition goals of the larger cohort study and an uncritical approach in which the authors took up obstetric discourses unquestioningly, the analysis implied that women were wrong to feel positively about the size of their large babies and should instead feel culpable due to their poor lifestyle habits. The study did acknowledge uncertainty in predicting birthweight and encouraged women to be a part of the decision-

making process; however, the study authors failed to question their own assumptions about large babies, nor did they acknowledge the power imbalances that may be present in decision-making in the presence of a macrosomia. By deploying the idea that women are wrong to feel positively about their large babies and are culpable for them, the study authors also held true to the tradition of mother blaming that is prevalent in Western healthcare discourses (Jackson & Mannix, 2004). Mothers and, increasingly, pregnant women are held responsible for the well-being of the children, including the maladjustment of their children, in ways that fathers are not and without regard to the context and circumstances of their lives (Jackson & Mannix, 2004).

By contrast, Jarvie (2016) used a critical/constructivist paradigm to look at the multiple discourses around shifts in values relating to large babies. The study considered the shifting societal values around large babies; what was once considered a “bonny” healthy baby, regarding a robust birthweight, now draws clinical attention. The authors argue that the trend in problematising large babies is informed by concerned dialogue around obesity, maternal nutrition, genetic programming of metabolism in utero, and the ever-undesirable label of “fatness” (Jarvie, 2016; Parker & Pausé, 2018).

The study identified two main discourses (medical and popular media) linking macrosomia to maternal responsibility and explored the experiences of a much more diverse sample of 30 women. It acknowledged the impact of these discourses and the power of language in constructing women who birthed large babies as bad mothers, something the women were acutely aware of. The women described an intense focus on their behaviours and consumption practices during pregnancy and felt positioned as individually responsible and to blame for carrying a large baby. They described being more concerned about this stigmatisation and its effects, rather than any particular health concerns about their babies and considered that for the most part they, their babies and their pregnancies were healthy.

Importantly, women were not simply passive recipients of oppressive medicalised meanings about macrosomia. They used a number of strategies to resist the dominant discourse that frames women as neglectful and careless in pregnancy. Women constructed an alternative narrative for themselves including the role of genetics in fetal largeness, assertion of a healthy diet, absence of diabetes, a generally larger population, and a preference for a larger rather than smaller baby. The women also reflected on scaremongering by health professionals ruining their pregnancies.

Two further studies offer a fairly narrow obstetric view of women’s experiences of a diagnosis of macrosomia which can be critiqued from a midwifery standpoint (Heery et al., 2013; Vercellini et al., 2015). Both studies reproduce the problematisation of large babies as a pathology of pregnancy, assume obstetric management as standard practice, and engage women’s perspectives only as a way of refining rather than questioning medical management approaches. As part of a wider study looking at the relationship between excessive weight gain in pregnancy and macrosomia, Heery et al. (2013) observed that women did not adequately fear the consequences of a diagnosis of macrosomia. Indeed Heery et al. (2013) were critical of women’s positive feelings about the health of their babies, and their reluctance to alter their lifestyle habits (diet and exercise patterns) that may have influenced the size of their babies in utero. As with Reid et al. (2014), Heery et al. (2013) default to a position of mother blame, positing pregnant women who gain weight and/or are carrying large babies as neglectful of their maternal responsibilities and to blame for the consequences.

There is a level of paternalism about women’s perceptions and understandings of their pregnant bodies and babies in this study that is troubling from a midwifery standpoint.

Vercellini et al. (2015) undertook a quantitative study in an Italian tertiary hospital of around 500 women, aiming to measure satisfaction with the birth of a macrosomic baby. The study concluded that women with macrosomic babies planning a vaginal birth were significantly less satisfied with their birth experience (67% in vaginal birth group, 69% in caesarean in labour group, and 89% in planned caesarean group). The study boldly concluded that women should be informed of a reduced likelihood of satisfaction when planning a vaginal birth following diagnosis of a macrosomic baby. The study context was difficult to relate to Aotearoa NZ, undertaken as it was in a hospital where all women were routinely given epidurals and episiotomies, and with a much higher assisted birth rate. Further, the data *neither dissatisfied or satisfied* were classified into the *dissatisfied* cohort. There was also a failure by the study’s authors (as in many others) to consider the experiences/satisfaction of mothers suspected to be carrying a large baby who, in fact, were not.

## DISCUSSION

It is clear from this review of the literature, that the labelling of babies as macrosomic in utero has implications both for the experiences of expectant parents and for their care pathways. We have identified a number of midwifery practice considerations that may assist midwives in working with women in this situation.

Firstly, we have identified the need for an open discussion with women about what evidence is available and any limitations inherent in it. In Aotearoa NZ, midwives are ideally placed in their partnership with women to undertake this. This discussion will need to cover the ways in which midwives and obstetricians estimate fetal growth, and the limitations inherent in these methods. This may be particularly challenging for women as it can often be assumed that ultrasound scanning is an exact science (Ray & Alhusen, 2016). Midwives must be clear that an EFW is purely a prediction and that although a quoted margin of error is commonly given as 10%, in fact as many as one in four scans will have a higher margin of error than that. Furthermore, midwives also need to ensure women are informed about the possibility of complications with a larger baby, but within the difficult context that the interventions that may be proposed (such as early induction or elective caesarean) do not guarantee improvement in the outcome for mother or baby and do carry their own risks. Midwives have an important role in discussing the benefits of normal birth so that this can be included in the information to be weighed up by the woman.

Secondly, midwives need to consider that women and whānau will assimilate this information in their own way and may assess risk differently (to either the midwife or other families). Women must be seen as situated within their own individual context. That may include things such as their previous birthing histories, their cultural perspectives, whānau perspectives and/or experiences of large babies, the presence of complications such as diabetes, the women’s own views on the experience, and how they assess/balance risk. This will include consideration of the ways that this phenomenon may be experienced by wāhine Māori (Māori women) and how cultural context may be relevant. As highlighted in the review of literature, there is currently no research that considers the experiences of parents within an Aotearoa NZ context and, as such, no research on the experiences of Māori whānau. However, we hypothesise that the prediction of a large baby may disproportionately affect Māori whānau. Māori are more likely to

be labelled as obese and as “high risk” (MOH, 2019b; Ratima & Crengle, 2013), and being overweight/obese pre-pregnancy is a risk factor for macrosomia (Dai et al., 2018). Wāhine Māori are also more likely to birth in primary units (Ratima & Crengle, 2013) and so may also be disproportionately affected by facility criteria that preclude bookings for suspected large-for-dates babies (Capital and Coast District Health Board, 2019). And finally, but not least importantly, midwives should honour women’s decision-making sovereignty in the midwifery partnership. Reid et al. (2014) noted that women reported not being listened to and feeling that they had no voice in decision-making about birth. This highlights the importance of placing the woman in the role as decision-maker and not seeking to take away any of her power in living and directing this experience. The Code of Health and Disability Services Consumers’ Rights mandates the role of health consumer as decision-maker, and this is also captured in the midwifery partnership model (Guilliland & Pairman, 2010; Health and Disability Commission, 2020). Reid et al. (2014) discussed the importance of women feeling valued and *part* of decision-making; however, we would argue that this would represent something of a token approach to informed decision-making and, in fact, the final decisions regarding choices such as place of birth, timing of labour and mode of birth remain with the woman, as supported by our professional midwifery frameworks. Honouring the woman also means avoiding stigmatising the woman or the baby, where there is a prediction of macrosomia, and affirming the woman in her ability to grow and birth her baby.

What little research there is on the experience of an ultrasound prediction of a large baby leaves plenty of room for further exploration and development of midwifery knowledge. There is a need for further research that can guide midwives on how best to communicate the nuances of “evidence” and “risk” with women. This will help ensure that whānau decisions are informed by an accurate understanding of the limitations of ultrasound technology in estimating fetal weight and the questionable ability of medical interventions to improve outcomes for themselves and their babies. Research undertaken in an Aotearoa NZ context will help inform midwives working with the unique aspects of Aotearoa NZ whānau, both Māori and non-Māori.

Midwives also need access to research that provides a counter-narrative to dominant risk-centric medical discourses about large babies by making visible the experiences of women who have had positive experiences of carrying and birthing large babies. This needs to include attention to the experiences of that hidden group of women – those who live through the consequences of a prediction of a large baby and then birth a normal-sized baby. Barring one study (Jarvie, 2016), all the research explored in this review was informed by an obstetric paradigm that assumes the growth of large babies as pathological and grounds solutions in the assumption of medical management and intervention as beneficent. We suggest it is necessary and timely to begin to disrupt the dominance of obstetric understandings of large babies. Midwives need an evidence base informed by, and contributing to, midwifery knowledge grounded in normality, partnership, shared decision-making, and empowerment.

## CONCLUSION

In summary, this literature review has raised important questions about the existing evidence base for a medically interventionist approach to predicted large babies during pregnancy, with important implications for midwifery practice. We have demonstrated limitations and inconsistencies in the literature related to macrosomia and pointed to the orientation of existing

literature as being towards a risk-based paradigm that is dominant in contemporary maternity care, yet often times inconsistent with a midwifery belief in normal birth. We suggest that midwives need to support families with a critical engagement with the existing evidence related to macrosomia. This means supporting families to question the pathologisation of large babies and to question the benefits of medicalised management and intervention in the face of a prediction of macrosomia. Furthermore, existing knowledge suggests that scan prediction of large babies can be erroneous, emphasising the need for women to have accurate information about the efficacy of scans, the actual risks of having a large baby, and the likelihood of interventions improving birth outcomes. Given the potential disproportionate impact of this issue on Māori wāhine, current practices are also an equity issue for maternity services. Evidence grounded in midwifery paradigms of birth that normalise the range of women’s experiences is urgently needed.

## CONFLICT OF INTEREST DISCLOSURE

The authors declare that there are no conflicts of interest.

### Key points

- Evidence regarding ultrasound prediction of large babies in pregnancy is inconsistent and weighted towards a risk-centric, medical model of care.
- Drawing on a midwifery belief in normal birth and professional responsibility for informed decision-making, midwives need to critically evaluate the current evidence and practices related to macrosomia.
- This will help to ensure that midwives can support informed decision-making within the midwifery partnership when there is a prediction of a large baby in pregnancy.

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TE KĀRETI O NGA KAIWHĀKAWHANAU KI AOTEAROA

## AOTEAROA NEW ZEALAND RESEARCH

## Midwives' experiences of caring for women with antenatal anxiety and depression: A qualitative study with midwifery acupuncturists

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### ABSTRACT

**Background:** Pregnant women seek help for a range of physical and emotional pregnancy symptoms from traditional acupuncturists. Whether midwifery acupuncturists in Aotearoa New Zealand (Aotearoa NZ) provide acupuncture for antenatal anxiety and depression (AAD) in practice is currently unknown.

**Aim:** This qualitative arm of a mixed-methods study aimed to explore midwifery acupuncturist experiences of caring for pregnant women with AAD in Aotearoa NZ. The aim of the research was to examine the factors that influence midwifery acupuncturists' perceptions of acupuncture use for AAD.

**Method:** This was a mixed-methods study involving an online survey and in-depth interviews from a convenience sample of Aotearoa NZ midwifery acupuncturists who had completed a Certificate of Midwifery Acupuncture. This paper describes the thematic analysis of the semi-structured interviews.

**Findings:** The eight interviewees were mostly NZ European (n=6) and Lead Maternity Carers (LMCs; n=6) caring for pregnant women in rural and urban locations throughout Aotearoa NZ. The interviews revealed an overarching theme, "helping midwives to navigate the ocean of AAD", which identified the lack of support participants experienced from current maternity health services for AAD in Aotearoa NZ. Subthemes "Missing the boat during pregnancy" expressed how participants felt no options were available for AAD prevention, while "keeping women afloat with no ship in sight" represented how interviewees tried to keep women in their care stable even though access to maternal mental health services was difficult. Participants felt acupuncture was a useful non-pharmaceutical tool that works; however, they had reservations about "adding acupuncture to the midwifery toolbox".

**Conclusion:** Aotearoa NZ midwifery acupuncturists were concerned about AAD and the limited conventional options available for women in their care. Acupuncture was viewed as a promising adjunct to usual treatment for AAD. Reservations included adding acupuncture to an already heavy midwifery workload, the cost of acupuncture, and the appropriateness of the treatment.

**Keywords:** acupuncture, antenatal, anxiety, depression, midwifery practice

### INTRODUCTION

Anxiety and depression during pregnancy can cause adverse perinatal outcomes for both the mother and her baby (Eastwood et al., 2017; Grigoriadis et al., 2018), with an association found between antenatal anxiety (Grigoriadis et al., 2018) or antenatal depression (Underwood et al., 2016) and postnatal depression (PND). A considerable lifetime cost to individuals and the public sector for perinatal anxiety and depression in the United Kingdom has also been reported (Bauer et al., 2016). Within the context of this study, antenatal anxiety and depression (AAD) is defined as mild to moderate symptoms of anxiety and/or depression during pregnancy, which may or may not be clinically diagnosed.

Traditional acupuncture uses fine needles on specific points along body pathways to maintain balance in the body. This is in

relation to traditional medicine theories such as those from China. Acupuncture has been found to be an effective intervention for antenatal depression in trials (Manber et al., 2009; Ormsby et al., 2020). This intervention may also offer potential relief for anxiety, stress, and comorbid physical symptoms for pregnant women with AAD. Acupuncture appears to be an acceptable treatment, as women with AAD have presented at an Aotearoa NZ hospital outpatient clinic for treatment by traditional acupuncturists (Betts, McMullan, & Walker, 2016).

In Aotearoa NZ, some midwives practise acupuncture after completing a short midwifery acupuncture course (Betts, McMullan, & Walker, 2016). These midwifery acupuncturists were taught limited acupuncture point strategies to support emotional wellbeing for pregnant women, along with basic pre-

birth/labour treatments. However, it is currently unknown whether midwifery acupuncturists find acupuncture useful for AAD.

## BACKGROUND

PND has been identified as a disorder that health resources in this country have been focused on, leaving antenatal mental health (AMH) under-served (Signal et al., 2016). Although there has been a significant reduction in maternal suicide recorded between 2006 and 2016, suicide continues to be the leading cause of maternal mortality (4.06/100,000 new mothers; Perinatal and Maternal Mortality Review Committee, 2018). Interventions for AMH have been identified as being needed (Cornsweet Barber & Starkey, 2015) and acupuncture may offer the potential to bridge this gap in conventional care.

Acupuncture has been found to be safe when administered by well-trained practitioners and there is evidence for its safety in major depressive disorders from a systematic review (McDonald & Janz, 2017). Research on acupuncture specifically for antenatal depression is limited. However, one recent review found acupuncture may offer a referral pathway and reduce antenatal and postnatal depression (risk ratios 1.68, 95% CI, 1.06 to 2.66, 1 trial; Smith et al., 2019). A more recent feasibility trial adds to this evidence, finding a significant reduction in the Edinburgh Postnatal Depression Scale ( $p < 0.001$ , mean difference [MD] 5.84, 95% CI, -9.10 to -2.58); the Depression, Anxiety and Stress Scale (-0.002, MD-4.83, 95% CI, -7.65 to -2.01); and the Kessler-6 ( $p < 0.001$ ; MD-6.42, 95% CI, -10.05 to -2.79) for those treated with acupuncture compared to usual treatment (Ormsby et al., 2020). The qualitative arms of this research reported that pregnant women described usual care as unsatisfactory, while they found acupuncture helpful for antenatal depression (Ormsby, Dahlen, & Smith, 2018). Further, maternity health professionals viewed acupuncture for antenatal depression as worth trying if it is safe (Ormsby, Dahlen, Ee, et al., 2018) and acupuncture was found to be an acceptable treatment for pregnant women with no reported adverse effects (Ormsby et al., 2020).

A systematic review of trials involving acupuncture use in general populations suggests a positive effect for anxiety, insomnia and depression (McDonald & Janz, 2017). This perhaps also suggests the potential of acupuncture to alleviate these symptoms in pregnant women. A Cochrane review found that acupuncture may induce moderate reduction in depression severity compared to usual care/no treatment (standard mean deviation -0.66, 95% CI -1.06 to -0.25, 5 trials, 488 participants; Smith et al., 2018). One randomised controlled trial involving 572 participants reported reductions in the Patient Health Questionnaire (PHQ-9) depression scores for both acupuncture (22.46, 95% CI, 23.72 to 21.21) and counselling (21.73, 95% CI, 23.00 to 20.45) when compared to usual care, finding the effect was sustained for six months (MacPherson et al., 2013). Further, analysis of these data found acupuncture also relieved symptoms like fatigue and insomnia (Hopton, MacPherson et al., 2014). This may be promising for pregnant women because physical symptoms such as insomnia (Emamian et al., 2019), fatigue (Qiu et al., 2012), and low back/pelvic pain (LBPP; Virgara et al., 2018) have been associated with perinatal depression and/or anxiety. Another Cochrane review (Liddle & Pennick, 2015) also found that when acupuncture was used alongside usual care, there was a significant improvement of the LBPP during pregnancy when using the Disability Rating Index (DRI; median DRI 44 and 55 respectively,  $p = 0.001$ ). Both physical and emotional pregnancy symptoms (back pain, pelvic/hip pain, emotional problems and

insomnia) have been treated by traditional acupuncturists in an Aotearoa NZ hospital maternity acupuncture clinic with high levels of satisfaction (Betts, McMullan, & Walker, 2016).

Evidence-based referral pathways available to midwives for women with AAD in Aotearoa NZ are limited. Treatment of AAD symptoms may be an important preventative to avoid more serious AMH problems and acupuncture may offer an option in this area. Midwifery acupuncturists are well positioned to assess whether acupuncture might be a useful adjunct support for women with AAD. Their experiences of caring for women with AAD can inform other midwives, acupuncturists, pregnant women and healthcare providers on this topic.

## METHOD

The qualitative aspect of this mixed methods study aimed to explore the experiences of midwifery acupuncturists in Aotearoa NZ who provided care to women with AAD. It involved a survey and semi-structured interviews. The findings from the survey will be reported at a later date. A constructivist pragmatic approach was applied for the study's qualitative arm. Exploring experiences can be useful for the complexity of health services research (Wisdom et al., 2012). A constructivist view implies participants construct reality from their experiences (Lee, 2012) which can allow the researcher to uncover consistencies and conflicts. Pragmatism suggests that consequence, context and circumstance can reveal the meaning of action and belief (Morgan, 2014). Thus, complexities of practice and pragmatism form the foundation for mixed-methods approaches (Long et al., 2018) that are relevant to examine complex interventions like traditional acupuncture and a midwife's experiences with this modality.

## Ethics

Participants for the interviews were identified from the survey participants who provided names and contact details for interviews. Verbal consent was obtained before interviews were conducted. All data were de-identified and anonymised; email addresses, correspondence from surveys, and audio and transcription files from interviews were stored on password-protected devices with a two-step verification. Data and information will be kept securely for five years post-publication and then deleted.

Ethical approval was obtained from the New Zealand School of Acupuncture and Traditional Chinese Medicine Ethics Committee (NZSATCM/010).

## Recruitment

Invitations to participate in an anonymous online survey (www.surveymonkey.com) were distributed by email to 172 midwives who had completed the Certificate of Midwifery Acupuncture between 2007 and 2019. A convenience sample of eight midwifery acupuncturists who met the criteria were interviewed. Inclusion criteria were that the participants were registered midwifery acupuncturists who worked with women during the antenatal period. English fluency with access to online services were also required. Interviews of 25-50 minutes duration were conducted in December 2019 and January 2020. Interviews were recorded via Skype (www.skype.com) or telephone, and then transcribed using Temi, an artificial intelligence online transcribing service (www.temi.com).

## Data collection and analysis

Transcripts were de-identified and scrutinised for consistency with the recordings, and interviews were evaluated using thematic analysis (Castleberry & Nolen, 2018) with a reflexive approach

(Berger, 2015). Initial coding of data was undertaken and peer reviewed and themes developed based on the data.

Participants (P) were provided with an interview number, and all quotes are identified by this number. An ellipsis indicates where words have been removed and [ ] indicates where wording has been added for clarity or to retain the anonymity of participants.

## FINDINGS

### Participants

Interviewees came from a range of locations, servicing urban (n=3), rural (n=2) or both urban and rural (n=3) populations of pregnant women. They had varying levels of midwifery experience and were mostly NZ European (n=6) and/or Māori (n=2), with six interviewees being LMCs and two being core midwives (Table 1).

**Table 1. Demographics of midwifery acupuncturist interviewees**

Demographic	n=8
<b>Years practising midwifery</b>	
<10 years	4
10-<20 years	2
20+ years	2
<b>Completed midwifery acupuncture course</b>	
In last 2 years	4
2-<5 years ago	2
5+ years ago	2
<b>Work type</b>	
Lead Maternity Carer midwife	6
Core midwife	2
<b>Area type</b>	
Urban	3
Rural	2
Both urban and rural	3
<b>Age</b>	
25-44	3
45-54	3
55-64	2
<b>Ethnicity*</b>	
NZ European/Pākehā	6
Māori	2
Other	1

\*Multiple ethnicities possible

### Helping midwives to navigate the ocean of AAD

An overarching theme from the eight participant interviews emerged as “helping midwives navigate the ocean of AAD”. This theme identifies the lack of support these midwives felt existed within the current healthcare system for women with AAD, and also the lack of available treatment options, with acupuncture considered a viable additional treatment option. This overarching theme was derived from three themes, the first being “missing the boat during pregnancy” in which the participants suggested that treatment options were unavailable until women’s mental health became extremely unstable. The second theme, “keeping pregnant women afloat with no ship in sight” reflects the situation where, although midwives did what they could to support women with mild to severe AAD, they sometimes had no options available from within the public health services, as illustrated by the phrase

“no ship in sight”. Finally, the theme of “adding acupuncture to the midwifery toolbox” identified that the participants felt integration of acupuncture is a potential “help” (a treatment option) for midwives when caring for women with AAD. Hence, the overarching theme captures the sense of acupuncture being an adjunct treatment option to inadequate mental health (MH) services and which might be of help to midwives. Several sub-themes were also present (Table 2). *I would love to see DHBs [district health boards] employ an acupuncturist that works in the maternity unit. Wouldn't that be wonderful? And so, the women didn't pay for it (P5).*

**Table 2. Themes arising from interviewees' experiences of working with antenatal anxiety and depression**

Overarching theme: Helping midwives navigate the ocean of AAD	
Theme	Subthemes
Missing the boat during pregnancy	Pregnant women feeling adrift
	Warning bells
	Watching women deteriorate
Keeping pregnant women afloat with no ship in sight	It's a big concern
	Strained resources
	More options needed
	Where's our help?
	Building our own raft
Adding acupuncture to the midwifery toolbox	Acupuncture really helps
	Considerations are required
	Knowing the true story for AAD
	Education
	For acupuncturists
	For pregnant women

### Missing the boat during pregnancy

The participants identified “warning bells” which they described as being alerts for AAD. These included fatigue, crying, not being able to switch off, aches and pains, traumatic previous birth experiences, unrealistic expectations, hyperemesis, repeat admissions/presentations, anxiety, exhaustion and sleeplessness. Pregnancy progression was identified as potentially aggravating and escalating some women’s mental instability, as identified by participant 8: *anxiety...sleeplessness and things...really ramping up (P8).*

The sub-theme “pregnant women feeling adrift” described women feeling as though they are not being taken seriously by partners, family and/or healthcare professionals, leaving them not knowing *where to turn (P3)* and/or feeling *judged (P4)*.

The sub-theme “watching women deteriorate” illustrated the helplessness some interviewees felt, due to there not being adequate services available for women with mild to moderate AAD. One participant described:

[a woman with nausea and] *quite mild anxiety [who] phoned saying... she was concerned and...recognised she was probably more concerned than she needed to be. [After referring her to a social worker and general practitioner (GP) to no effect, this] escalated in...two weeks, [getting to the point where] the woman wasn't answering the phone... she was...crying and demanding an abortion because she had decided the baby was trying to kill her. (P3).*

The midwifery participants described having to learn as they go: *It was like a domino effect...when you look back it could have been almost like we missed the boat in pregnancy (P1).*

## Keeping pregnant women afloat with no ship in sight

The theme “keeping pregnant women afloat with no ship in sight” highlighted services and options for AAD as being unsatisfactory, leaving midwives feeling overloaded, unsupported and asking “Where’s our help?” *If we nip it in the bud earlier in the pregnancy... it doesn't escalate* (P3).

Participants identified that healthcare resources were “stretched”; however, this didn’t mitigate the sense of frustration felt. For non-acute cases of AAD, LMCs are required to refer to GPs (Ministry of Health, 2012) who can then refer women to limited free counselling if the GP agrees with the diagnosis. The participants described this pathway as problematic and “strained”, with services being overrun: *The last two referrals I've done for anxiety or depression, those women have been put on a waiting list* (P3).

Participant 3 resorted to a *convoluted* pathway by getting women to ask their GP for referral to maternal mental health (MMH) services because referrals from midwives were not being accepted.

Another participant had no MMH services available in her area, stating *if they're not acute... it can be a six-week lead in time* (P5). Acute cases also experienced wait times: *We were going to refer [to] emergency psych services, and they said there's about an eight hour wait* (P5).

Participants identified “more options needed” because women were often reluctant to follow the conventional option because they had *been down that road before and [were] not that interested* (P8) or *They just keep saying 'no, no, no' or 'I've tried that before, it won't work'* (P5).

Participants explained that women would follow through for *physical things* [but] *when it comes to... anxiety and depression and MH issues, that's when they're a bit more reluctant... they're... like, oh yeah, okay. But then not do it* (P8).

One interviewee described her scope of practice as *normal pregnancies* (P8), yet participants found themselves *often learning as [they] go* and feeling they almost had to *treat* women for AAD (P1).

*It's so dumb... we do the screening, but we can't do anything with the screening... we don't have any options* (P6).

Participant 8 stated *I need to hand her over, but the people that I need to really hand her over to, are just not actually available... on paper they are. But in reality, it's just lacking... it takes its toll* (P8).

One interviewee thought the lack of options was *why midwives get a bit overloaded* (P5), while another described a colleague who found it *exhausting having to do the needles all the time, stating we're helping women, but where's our help?* (P6).

Although most participants identified that more support was necessary, one experienced participant with an interest in MH stated that, *if [women are] better supported antenatally then potentially they'll have a better birth, so then they'll recover better* (P7). She felt that acupuncture was one way she could address this, although she did not believe acupuncture to be the only answer. It was believed the more women were referred to various modalities, *the better they do* (P7). She suggested to *let them have... whatever they need... the sooner the better* (P7). This core midwife made use of various free complementary and alternative medicine (CAM) services from a traditional acupuncture clinic, a hospital and a marae, along with the acupuncture she was able to administer herself, with there being no cost to women. She felt it was *all quite good really* (P7).

## Adding acupuncture to the midwifery toolbox

The theme “adding acupuncture to the midwifery toolbox” was identified by participants who felt positive about the effects of acupuncture as a treatment option for AAD.

The participants felt “acupuncture really helps”: *I don't think I've ever had any negatives about acupuncture* (P2); *It actually does work* (P6); *It's really been such a useful tool* (P8); *Even though I don't practise [acupuncture anymore] I do refer* (P1).

Participants stated that acupuncture for AAD *would be amazing... especially if [women] can access it for free* (P4), and for those that *want to avoid medication* (P8).

One participant identified that a woman’s wellbeing and outlook *were quite uplifted*. [She] *actually sought help... doing... those needles, it's actually changed their mindset* (P6). While discussing another case where a *first baby was very preterm* [and the woman became] *quite agitated at the point where that baby had been born*, this same participant described how points for calming, anxiety and sleep were used, which *really relaxed* the woman, so she *slept really well afterwards* (P6).

“Considerations are required” summed up the reservations midwifery acupuncturists held about acupuncture for pregnant women. These included the financial barrier of accessing care due to the cost of acupuncturists in the private sector, as well as considering the different types of acupuncturists and whether they have experience of treating pregnant women.

Interviewees thought it would be good to have a *funded acupuncture clinic... so it's no cost for [women] but we're not out of pocket either* (P6).

One participant also felt by having acupuncturists working in hospitals *it would reduce the woman's hospital stay* [for conditions like] *hyperemesis* (P5).

Participants thought it important that acupuncturists know the medical history of women with AAD from midwifery colleagues, rather than relying on women to pass on information. This sharing of information was also thought important in the case of referrals for induction and high-risk pregnancies.

In addition, participants felt that their midwifery colleagues needed to be better educated about acupuncture and what it can do, with most knowing about its effects for *getting ready for birth or turning babies... but not really for the emotional stuff* (P8). Participants identified that most pregnant women *have never had acupuncture before or considered it as a treatment option* (P3) and some participants had never thought to use acupuncture for AAD. Acupuncture was described as *a new thing for people to get their heads around*, [and educating people] *that that's an option is needed* (P2).

Aversion to needles was described as a potential barrier to acupuncture; however, participants explained that it was helpful showing women how unlike acupuncture needles are to needles that *take blood or give injections* (P3). One participant started with just one needle, and commented that then women *realise it doesn't actually hurt* (P8). Another interviewee described the *absolute needle phobia* and anxiety of one woman who was *not keen to use [acupuncture] for pre-birth* but when she didn't go into labour using acupressure, acupuncture was then acceptable, *and it worked a treat. If a need... comes up... they will actually just... do it* (P4).

## DISCUSSION

This study set out to explore the factors that influence midwifery acupuncturists' perceptions of acupuncture use for AAD. The

participants have identified that there is little existing support for women with mental health issues and that providing acupuncture may be an additional tool of support. They described acupuncture for AAD as a novel approach which would require education to support its adaptation into practice, even though women have been found to view acupuncture as acceptable and satisfactory (Betts, McMullan, & Walker, 2016; Williams et al., 2020). Positive perceptions of acupuncture by midwives have been reported previously and include the perception that acupuncture had potential as a preventative to medicalised treatment (Ormsby, Dahlen, Ee, et al., 2018).

The participants identified that women's mental health appeared to deteriorate during pregnancy. Evidence suggests that this may be the case, with the prevalence of self-reported anxiety in the first trimester from 102 studies in 34 countries estimated as 18.2% (95% CI, 13.6-22.8, 10 studies, n=10,577) compared to 24.6% (95% CI, 21.2-28.0, 33 studies, n=116,720) in the third trimester (Dennis et al., 2017). A randomised controlled trial found that acupuncture was as useful as counselling, with both interventions significantly reducing depression compared to usual care (MacPherson et al., 2013). This trial also found fatigue and insomnia were relieved (Hopton, MacPherson et al., 2014).

Participants in this study saw a need for other options and identified that some women will refuse conventional treatments because they have not worked in the past; this aligns with the findings of Ormsby, Dahlen, and Smith (2018). National and international studies have found that some women with AAD are less likely to be honest when consulting with, or perceive risk differently to, medical professionals (Cornsweet Barber et al., 2017; Forder et al., 2019). This may result in "at risk" women not being identified, making prevention and treatment of comorbid physical symptoms an important part of assessment for AAD. Participants described pregnant women as readily exploring treatments for physical symptoms yet being less likely to follow through with conventional options should they feel mentally unwell. This study emphasises the need for further research into preventative interventions for AAD for pregnant women in Aotearoa NZ. Participants expressed a desire for more support in caring for women with AAD. They viewed acupuncture as a beneficial treatment option; however, affordability of the treatment by acupuncturists who practise privately was a major concern.

Acupuncture may be perceived as relating more to treatment for physical symptoms in Aotearoa NZ, due to its inclusion in the treatment of injuries that are subsidised by public health insurance (Accident Compensation Corporation, n.d.). Having this increased acceptance, it may offer another option for AAD, with potential for promoting "passive recipients" to "active participants" (Hopton, Eldred, & MacPherson, 2014). One participant described how when acupuncture points were used for emotional wellbeing, they helped change a woman's outlook, enabling her to seek help. Previous studies have identified acupuncture as supporting empowerment, optimism (Betts, Smith, & Dahlen, 2016), motivation (Schnyer et al., 2003), and physical and emotional wellbeing (Smith et al., 2002) for pregnant women.

Physical symptoms such as sleep problems, fatigue and pain were termed by the participants as "warning bells" and were viewed as potentially amplifying AAD, a finding that has also been identified by Emamian et al. (2019). Early treatment options for these symptoms are worthy of further investigation to prevent potential mental health deterioration. More research is needed to identify whether providing acupuncture for these early physical pregnancy symptoms has a potential to influence AAD.

A lack of referral options and the desire for education on AAD were emphasised by the participants. Making options, such as

acupuncture, available as preventative strategies may help to spread the work overload participants felt when caring for women with AAD.

Most midwifery acupuncturists know to refer to traditional acupuncturists for more complex problems, as has been found in other CAM research (Hall et al., 2013). Closer collaboration between midwives and acupuncturists was thought important for acupuncture use in AAD, as well as in situations involving induction and high-risk pregnancies.

This research highlights that, for midwives, pregnant women and the wider community, education about acupuncture and the evidence that supports its use are needed. Acupuncture was perceived as a useful preventative treatment option for AAD by the midwifery participants, with the potential to change women's outlook, enabling them to proactively seek help.

There is promising evidence for acupuncture as a preventative treatment for AAD as well as for physical symptoms of concern, such as insomnia, fatigue, pain, nausea and vomiting, and the stress for some around pregnancy progression. Interviewees in this study expressed support for adding acupuncture to their "toolkit" for AAD. Exploring ways of establishing easy referral pathways that could minimise extra work burden for midwives will be required.

## STRENGTHS AND LIMITATIONS

This research has been the first to explore Aotearoa NZ midwifery acupuncturists' experiences of caring for women with AAD. Participants were from a range of regions, servicing both urban and rural populations. This is a strength and allows a range of views to emerge from midwifery acupuncturists caring for women with AAD, who encounter or interact with various regional rural and metropolitan MMH services. This sample may not represent midwifery acupuncturists and the results cannot be generalised to others. Aotearoa NZ midwifery acupuncturists may have differing views of acupuncture to those of the general midwifery population in Aotearoa NZ and overseas. It would be interesting to make comparisons between these groups in future research.

Twelve to sixteen interviews are thought adequate to reach code saturation, with as few as six revealing basic main themes (Hennink et al., 2017). However, only eight interviews were achieved, which is a limitation. Several participants found Skype access burdensome, having to download an app they did not normally use. As a result, the majority of interviews were conducted by telephone, which limits the researchers' ability to observe visual cues. Main meta-themes were obvious within the eight interviews and the last interview yielded no new information.

## CONCLUSION

Midwifery acupuncturists in this study expressed concern about the limited services available for pregnant women displaying mild to moderate, and sometimes severe, AAD. They discussed how women currently have few options for AAD treatment and that acupuncture may be an acceptable and beneficial option for AAD prevention; but further research is needed.

With conventional treatment for AAD sometimes being found unsatisfactory, difficult to access or unacceptable, acupuncture may provide a physical, non-pharmaceutical alternative. Participants described acupuncture as a useful tool, and having the potential to change the mindsets of women with AAD. Some participants desired to see acupuncture funded publicly so there was no cost to women. Greater collaboration between midwives and acupuncturists may be required, bearing in mind Privacy Act obligations (Ministry of Justice, 2020), to ensure acupuncturists have the correct and relevant information about women for AAD treatment. Education about acupuncture and acupuncturists is

needed for pregnant women and midwives, as acupuncture was not well known as an option for AAD. By using acupuncture, participants felt they were helping women; however, this was viewed by some as adding to their already stretched workload.

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### Key points

- The midwifery acupuncturist participants identified that current options for AAD are limited in Aotearoa NZ.
- Midwifery acupuncturists perceive acupuncture as helping pregnant women and view it as a preventative/alternative to usual care for AAD.
- Greater midwifery and traditional acupuncturist collaboration would be beneficial.

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## AOTEAROA NEW ZEALAND RESEARCH

## A daunting journey: A qualitative comparative study of women's experiences of accessing midwifery care

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### ABSTRACT

**Background:** Early engagement with a maternity carer is recommended as a means of reducing stillbirth and neonatal mortality. This is especially important for women who live in high deprivation areas, as these areas have been associated with late access to maternity/midwifery care and significantly higher rates of stillbirth and neonatal mortality. Co-locating midwives at general practitioner (GP) clinics in such an area was established with the aim of facilitating women's early access to midwifery care.

**Aim:** To explore the experience of multiparous women who live in socio-economically deprived communities within the Counties Manukau Health region and who accessed the services of midwives at co-located clinics.

**Method:** Interpretive descriptive methodology was used to explore the experiences of each woman before and after using a co-located midwifery clinic. One-to-one, semi-structured interviews were undertaken and data examined using thematic analysis.

**Findings:** The eight women interviewed found accessing Lead Maternity Care (LMC) midwives during early pregnancy a daunting journey before being able to use a co-located clinic in the Counties Manukau Health region. Barriers identified were: a lack of knowledge about how to find a LMC midwife, limited finance and limited time. These impacted on women's ability and confidence to find a suitable LMC midwife. The women expressed the need for help to circumvent the maternity care maze through receiving a recommendation for a LMC midwife and having access to a midwife co-located at their GP clinic.

**Conclusions:** The participants encountered numerous barriers accessing early LMC midwifery care. Enablers to accessing early LMC midwifery care include receiving recommendations from GP clinic personnel, and midwives being co-located at GP clinics to make maternity care convenient and with a smooth transition from GP to LMC midwife care.

**Keywords:** accessing antenatal care, co-located midwifery clinics, high deprivation, interpretive description, midwifery care

### INTRODUCTION

Aotearoa New Zealand's (Aotearoa NZ's) maternity services are unique as they are based on women-centred community care, integrating with secondary/tertiary hospital services when required. Women select a lead maternity carer (LMC) – who can be a midwife, a general practitioner (GP) or an obstetrician – to provide and coordinate care during their childbirth experience. In 2018, 94.5% of women who registered with a LMC chose a midwife (Ministry of Health [MOH], 2020). LMC midwives work autonomously and collaboratively within the midwifery scope of practice (Midwifery Council of New Zealand, 2010).

Women living in areas of high socio-economic deprivation are less likely to register early with a midwife and are at increased risk of experiencing stillbirth or neonatal death (Perinatal & Maternal Mortality Review Committee [PMMRC], 2018).

The Counties Manukau Health (CMH) region includes a large number of families/whānau living with high social deprivation. Women living in this region have been identified as having higher perinatal mortality rates than women in areas of higher socio-economic status across Aotearoa NZ (Atkinson et al., 2014; CMH, 2014; Jackson, 2011; PMMRC, 2018). Data from the Aotearoa NZ PMMRC demonstrate better maternity outcomes for women and babies when antenatal care is commenced early in the pregnancy (PMMRC, 2018); preferably before 10 weeks' gestation (MOH, 2018; National Institute for Health & Clinical Excellence, 2010). The Aotearoa NZ National Maternity Monitoring Group similarly prioritises timely registration with a LMC (MOH, 2018).

Following a 2011 MOH-commissioned report, Priday and McAra-Couper (2016) captured statistical outcomes achieved

over 15 years by the model of midwifery clinics co-located at GP clinics in the CMH region.

In 2012, the MOH presented its report to CMH. This report then informed the External Review of Maternity Care in the Counties Manukau District (Paterson et al., 2012). The report concluded that women utilising co-located midwifery clinics had a higher rate of both early registration with antenatal care and positive birth outcomes. Thus, the external review recommended the co-located maternity service model be replicated and expanded throughout other high deprivation communities in CMH. From 2013 to 2015, CMH implemented the recommendations with the aim of women engaging early within the support of co-located midwifery clinics in these communities.

To date there has been no research capturing the women's experiences of utilising this expansion of co-located midwifery clinics at GP clinics. The aims of this interpretive descriptive study were: 1) to explore women's experiences of accessing and engaging with midwifery care before and after using a co-located midwifery clinic; 2) to determine if the co-located clinics serve women's needs; and 3) to offer recommendations, if warranted, for improved services based on findings.

## METHOD

Interpretive description was used as the methodology as it was fit for purpose to address the research question, which asked: What are the experiences of multiparous women who live in socio-economically deprived communities of the CMH region who have received midwifery care located at their GP clinic? Thorne's (2008) concept of interpretive description is an inductive approach designed to explore clinically relevant phenomena, particularly in social and primary health care environments. Interpretive description is particularly applicable for understanding complex experiential clinical and practical phenomena, events or processes (Berterö, 2015; Thorne, 2008), such as this study where women interface with a primary health service specifically designed for pregnant women's health care. This research approach encouraged women to speak freely, eliciting rich data.

## Ethics, confidentiality and consent

Ethical approval was granted by the Auckland University of Technology Ethics Committee in June 2016 (ref: 16/320). As we anticipated most participants would be of Māori or Pasifika ethnicity, consultation occurred throughout the study with two representative midwives, one from Nga Maia and the other from Pasifika Midwives Aotearoa. Confidentiality was maintained by using pseudonyms and removing any identifying information given in the interviews. All interviews were transcribed verbatim by a transcriptionist who signed a confidentiality agreement. Written consent from participants was obtained prior to commencing and digitally recording the interviews.

## Participant recruitment

GP clinic personnel and midwives who worked in co-located clinics in the CMH region were approached to give information sheets to eligible women. Women interested in the study were invited to phone or text their interest. The inclusion criteria were multiparous women who: a) in the last five years had received previous pregnancy care at a location other than their GP clinic, and with subsequent pregnancies had received midwifery care from midwives located at their GP clinic; (b) were conversant in English; (c) were over 18 years of age; and (d) were residing in the high socio-economic deprivation areas of CMH. The exclusion criterion was women who had received past midwifery

care from the first author or her back-up midwife. In total, eight women were recruited and interviewed over a three-month period (Table 1).

**Table 1. Participant demographics for current or most recent pregnancy (n=8)**

<b>Ethnicity</b>	
Māori	2
Pasifika	2
Pasifika/Māori	1
Māori/European	1
Indian	1
European	1
<b>Age range</b>	28-38 years
<b>Gravida</b>	
Gravida 2	5
Gravida 4	1
Gravida 5	1
Gravida 6	1
<b>Distance from home to GP clinic</b>	
1-10 mins drive	8
10 mins walk	3
Unable to drive	2

Data were collected through individual, semi-structured, face-to-face interviews at a location of the woman's choosing. The interviews were participant led and guided by an interview prompt sheet to keep the dialogue related to the research topic. Interviews began by asking demographic questions which served as springboards; women often recalled further information when responding to the demographic questions about accessing midwifery care. For example, "Where do you live in relation to your GP clinic and where have you accessed a midwife?" was then further explored by asking "How long does it take you to walk or drive to these clinics?" These questions were reviewed after each interview to fine-tune the exploration of the topic with the evolution of the interviews. For example, in the first interview the participant described in-depth being able to walk to her clinic when driving or vehicle transport was not possible, hence in her case the initial question was expanded upon; for example, "Tell me about driving in a car when you are pregnant?"

As we wanted to interview women who had experienced both co-located and non-co-located midwifery care, we explored the processes each woman undertook to find a midwife. The interviews lasted between 40 and 70 minutes and were audio recorded; handwritten notes taken during the interview aided management of the record-keeping processes.

In keeping with descriptive interpretive methodology, interviews ceased once the data from the final participants were seen as repeating similar themes.

## Data analysis

The data were analysed using thematic analysis: the process of discovering recognisable patterns or themes captured within the participants' recollections about the topic in question (Thorne, 2008). By using an iterative and inductive method of analysis guided by Thorne, Kirkham and O'Flynn-Magee (2004), Thorne, Con et al. (2004) and Thorne (2008), we were able to generate rich data from the women's experiences. The analysis process was constantly open to discussion, which allowed the data to be coded according to similarities; from these codes, themes were

developed. The complexities of health and social issues during these care episodes were also looked for and explained.

The trustworthiness criteria – credibility, dependability, confirmability and transferability for judging the data analysis process – were informed by Guba and Lincoln (1982). To meet these, we employed multiple strategies throughout the research process. They included: purposive sampling of participants who had experiences of accessing midwifery care both independently and via co-location with their GP practice; gaining participants' perspectives and describing these accurately; prolonged engagement with the data; keeping a decision trail and practising reflexivity; and presenting preliminary findings to a group of peer midwives. Participants were each sent a copy of their transcript for any changes or comments.

To further promote trustworthiness, the first author discussed her experiences of working in and researching co-located clinics, revealing any assumptions and prejudices (Smythe, 2012; Temple, 1997). This was especially important given the 'insider-outsider' phenomenon (Dwyer & Buckle, 2009) which can result in bias within qualitative research, where the researcher is inseparable from the study. During the process of data analysis, presumptions were challenged to ensure codes and themes arose solely from the participants' data.

## FINDINGS

Two themes emerged from participants' experiences accessing co-located midwifery care at their GP clinic: "a daunting journey" and "circumventing the maternity care maze". All the participants described their previous journey of accessing midwifery care as daunting, whereas being able to access a co-located midwife circumvented the maternity care maze.

### A daunting journey: Accessing midwifery care

All participants found the process of accessing LMC midwifery care onerous. Most women signalled knowing how to find a LMC midwife as the first barrier to accessing early midwifery care:

*There should be an information sheet or something for people who don't know what the next step is...there needs to be more information on what the next step is and what we need to do to find a midwife. How do I do that? Who do I turn to? Who can you suggest...It is a daunting task finding the right person. (Sui)*

Sui explained her concerns; the process started with having her pregnancy confirmed by her GP. However, she then found the next step an intimidating and discouraging struggle. The paucity of information regarding how to connect with a midwife was a major obstacle for Sui.

Phoning to ask if a specific midwife could care for them could frustrate participants' efforts to access early midwifery care:

*I rung my old midwife and asked if she had any recommendations and she said to go on a website...it had so many midwives. It was a long process. Quite daunting having to go through all these ladies and you'd find one and she'd be booked out. To be honest...I gave up, it was just too daunting. (Mohi)*

The established system for finding a midwife was assumed to be helpful by Mohi's previous midwife. However, for Mohi the process of accessing the website, identifying possible midwives, contacting them and then finding they were already fully booked, meant she did not persevere with phoning further midwives. The website, although accessible, was not in her case a helpful resource.

Nisha also grappled with the pathways to finding a midwife:

*There's a lot of midwives' numbers and names, which one to ring? ...I have to decide. How am I supposed to know they're good or bad? I didn't think it was a good idea ringing all of them up because I don't know where or who they are. (Nisha)*

Nisha found having to phone many midwives challenging, let alone knowing what questions to ask to ascertain if they were going to satisfy her quest for a "good" midwife. Nisha wanted assurance that her choice of midwife would bring safe care for her and her baby; she was unable to see how it would happen with this system of finding a midwife.

Another barrier was the level of the woman's confidence. Most participants were uncomfortable and fearful of being "bold" with midwives they did not know. They did not wish to ask the midwives to qualify themselves and feared being rejected by a midwife. Phoning and asking for the service of a stranger required courage:

*People sometimes don't have the confidence to ring up and ask. (Mia)*

*I don't want to ring them up and ask them how much experience they have. (Nisha)*

Not being able to drive was another barrier to engaging a midwife. Some participants cited reasons, like cultural beliefs, for not wishing to drive and travel distances.

*In our tradition we're not allowed to drive in the first stage of pregnancy because we believe that if the road is pondit [pot holed] it will make the baby inside easy to get a miscarriage...I think I should find a new one [midwife] that is closer to home. I can't manage to drive there, it's long, not just around the corner where the [GP] clinic is [which is] a five-minute walk [from Ana's home]. If I can walk it would be good if I don't want to drive. (Ana)*

For her first pregnancy Ana had a co-located midwife who was recommended for her. Ana wished to reconnect with the same midwife but the midwife's new clinic was about a 20-minute drive from Ana's home. The midwife did try to accommodate Ana's reluctance to drive to this new location by visiting Ana at her home. However, when home visits were not possible, Ana drove herself to the new clinic. Ana's family held the cultural belief around being in a car that, in the early phase of pregnancy, this might cause a miscarriage. Secondly, there was additional distance to travel to see her doctor if this was recommended by the midwife. These challenges culminated in Ana considering finding midwifery care closer to her home.

The final barriers participants discussed were limited finances and time, citing limited phone credit, lack of or limited internet access, parking costs and being time poor.

*I don't always have credit on phone and [if it] goes to message, credit is wasted...I don't use buses, too much money and I don't know where they go. (Ana)*

*People sometimes don't even have access to the internet... In the city you pay for parking. At a hospital you pay for parking. At the [GP] clinic you don't...it's easy and great! Ahh the to and fro, like the travel distance plus parking. My chemist is right downstairs so everything was all in one. If you can get your doctors, your midwife, your lab tests, your chemist, all in the one facility, it's like a cost bonus! (Mia)*

Ana's and Mia's comments challenge the assumption that everyone can afford these costs or has easy access to a phone and the internet. They also highlight the time that antenatal care can take, especially when services are not within an easy distance to one another. All these factors required consideration and were hurdles to the attending of midwifery appointments.

### Circumventing the maternity care maze

Participants wanted help circumventing the maternity care maze. When reflecting on their experiences of co-located midwifery care, all valued receiving a LMC midwife recommendation from the GP clinic personnel. It relieved the burden of finding a midwife through their own efforts.

Rata describes receiving guidance:

*Our [GP] nurse, she always looks out for me and my son, so the moment she said this person [the midwife] was good, it was a relief. She could have said I could go to Arnold Schwarzenegger and I still would have believed her. It was awesome.* (Rata)

It was about needing reassurance that the midwife could do her job and do it well. Having her GP's practice nurse recommend a midwife relieved her of this concern. Similarly, other women appreciated receiving a recommendation from their trusted health practitioner:

*Having my GP rate her [the midwife] quite highly made the decision so much easier...I value her [the GP's] opinion.* (Kelly)

Kelly had a relationship of trust with her GP; the midwife recommendation was highly regarded and facilitated her finding a suitable midwife.

All participants valued having a midwife co-located at their GP clinic. It made maternity care a smooth transition from GP to LMC midwife. It also enabled women to address other family/whānau health needs during the same visit:

*It was convenient and stress free, when you're working you have kids, other commitments... It takes a bit of work off your plate having a midwife out of your GP clinic, convenient.* (Kelly)

*It was great, easy getting the vaccinations [whooping cough and flu]. I'm so busy with the kids and you know it makes it a whole lot easier...I went through a bit of depression, so my midwife helped me through that, to get on to some sort of counselling and work together with my doctor.* (Mia)

*To not drive elsewhere. Just to have her [the midwife] in the same location with the practice...Yeah, like with the pharmacy and everything on the same location. Not having to go out of my way to see a midwife.* (Alia)

As for most of the participants, Kelly, Mia and Alia were busy women, having multiple demands such as work and extended family/whānau responsibilities. Having midwifery care, their GP and other health services located together saved time and money. Co-location eased both the process of enlisting a midwife and also facilitated the opportunity for the GP and midwife to work together. Furthermore, for these busy women, being able to piggyback other health-related appointments on to an antenatal visit was a convenient timesaver.

Being familiar with the location and the people at their GP clinic assisted them to engage with midwifery care, as participants felt at ease. For example:

*It [midwifery care] was in a space which I was familiar with. I know where it is, it's really close to home. It feels more comfortable walking in there, it's intrinsically important for me. Being part-Māori, I can't stress enough how much better it feels going somewhere where you know, my mum trusts, my dad did, my husband does, my son goes too. You know, they know my whole history.* (Rata)

Rata noted the importance of her family connectedness with the GP clinic. She described herself as feeling more relaxed receiving midwifery care for her second pregnancy in a known, trusted environment which her family/whānau frequent and where they too trust the GP clinic. Additionally, being in a place where her health history is known was seen as another positive factor.

Lastly, participants valued the co-located midwife and GP being able to easily communicate between each other, in person, about their health, pregnancy outcomes and family planning needs:

*When I did [my baby's] 6 weeks vaccination my midwife told everything to my doctor, she actually went face to face [with the GP] about family planning, what I have to do, which one she suggested is better for me. Also, she [the baby] had a cord problem, so my doctor also knows because my midwife went there. And the midwife called me and she goes "I spoke to your GP and that's what she suggested", all these things. So, it was easy. I don't have to go to my GP and say everything. So, she did the half of the job for me after postnatal. Yeah, and also my GP goes "oh I heard about you, [your midwife] told me all about you, your labour was very good".* (Nisha)

When Nisha attended her first GP appointment after the midwife discharged her, she valued the communication that had occurred between the midwife and her GP. It took the pressure off Nisha having to explain to the GP aspects of her maternity care such as family planning and the concern re baby's cord.

### DISCUSSION

The findings in this study identified that our participants encountered their first barrier at the entry point of the LMC midwifery system – knowing how to find a midwife. All the women experienced difficulties having to find their own midwife with their first pregnancy and described this as a daunting journey. In comparison, having a midwife co-located at the GP clinic, or a LMC midwife being recommended to them by their GP or practice nurse, circumvented the time, cost and stress that finding a midwife entailed. Women in this study identified being appreciative of receiving a recommendation, guidance and information from their GP or practice nurse to help them take the steps needed between pregnancy confirmation to finding a midwife. Lovell (1996) asserted that providing pregnant women with information and support will empower them to have choices and make decisions within their parenting journey.

It is important to note that all the women in this study went to their GP to have their pregnancy confirmed. In Aotearoa NZ a large proportion of women first see a GP to confirm their pregnancy (Corbett et al., 2013; Jackson, 2011). It is therefore important that GPs and/or practice nurses, during their conversations with women at the time of pregnancy confirmation, support navigation to local LMC midwives. Aotearoa NZ and overseas literature supports improving public health communication and interventions to increase specific knowledge on the importance of accessing early antenatal care (Aquino et al., 2015; Copland et al., 2011; Griffiths et al., 2013; Lindquist et al., 2014; Makowharemahihi et al., 2014; MOH, 2017).

The women in this study described how they found the process of phoning LMC midwives to check availability an exhausting process. The midwife contact list, given to women by the GP clinic personnel, had limited information, providing only the midwife's phone number and geographical location. Even more perplexing, once having found an available midwife, the women were then required to converse with the midwife about their needs. The women felt uncomfortable with this independent way of finding a midwife; and this was an obstacle for those women who preferred the GP or practice nurse's help to recommend a midwife. The GP or practice nurse were viewed as trusted advisors who provided guidance as to which midwife would meet the woman's needs.

For Māori and Pasifika women, having to ask a health professional to care for them is a culturally and socially uncomfortable task and avoided where possible (Bartholomew et al., 2015; Corbett et al., 2013; Makowharemahihi et al., 2014). On the other hand, for the women in this study, to have their GP or practice nurse recommend a LMC midwife saved them the embarrassment of either having to directly contact a midwife, or not making contact at all, thus delaying care. Our findings echo/reflect those of Makowharemahihi et al. (2014) who found that women in their study phoned many different midwives only to find them unavailable, or their messages left for midwives went unanswered. They needed to go to extraordinary lengths to find a midwife; some became exasperated and self-referred to the hospital maternity system or returned to the GP.

Public transport was cited as another barrier for women who were new to the region and not confident with navigating an unfamiliar city. Moreover, for some women their cultural beliefs would not allow them to travel alone on public transport and driving was deemed to possibly cause miscarriage. This led to women who did not drive, or did not want to drive, experiencing limited access to LMC midwifery care.

Our participants identified their reality that limited finances influenced ownership of a mobile or landline phone. Limited credit prevented phone calls to multiple LMC midwives to ascertain their availability. This added another layer of tension to accessing a LMC midwife. Limited finance also impacted their ability to afford petrol and parking, especially if needing to drive to a clinic location not on their usual route. The women expressed appreciation at the convenience of being able to access GP care at the same time as seeing the midwife, specifically for their maternal immunisations, mental health and physical ailments. Having this option saved them petrol costs, parking costs and time. Much of the Aotearoa NZ and overseas literature reports that multiparous women do not prioritise accessing early antenatal care for reasons similar to those raised in the current study – time restraints, prioritising the needs of other family/whānau members, and financial limitations (Corbett et al., 2013; Dixon et al., 2013; Haddrill et al., 2014; Hatherall et al., 2016; Ratima & Crengle, 2013). All the women in our study had pressured, busy lives which impacted their ability to access midwifery care. It could be argued many women have pressured, busy lives; however, the difficulties of the lives of these women were exacerbated by poverty.

This study revealed that the women trusted information, recommendations and referrals from their GP and/or practice nurse. Women wanted reassurance that they would find a “good” midwife. When a midwife was recommended by their GP or practice nurse, the recommendation was perceived to come with an endorsement that the midwife “must be good”. The women then accessed the midwife easily, with confidence and with less fear and anxiety about the quality of the care she was to receive.

Through the endorsed recommendation from the GP or practice nurse, the women described a sense of knowing the midwife, despite not having met the midwife previously, and a confidence to contact the midwife to book an appointment when they were ready. However, in order for midwives to be recommended to women, inter-collegial relationships are important. GPs, practice nurses and midwives need to have strong professional relationships to uphold trust and the knowing of each other. “Shared knowing” between health professionals is the basis of a trusted relationship the women then build on when establishing the new LMC midwife relationship (Crowther & Smythe, 2016). This prior “knowing” helped women feel they could ask the GP or practice nurse important questions about the recommended midwife, which enabled them to build a profile of the midwife and inform their decision-making with regard to choosing a LMC midwife.

The women in this study valued the ease and convenience of having their midwifery care at their GP clinic. Moreover, this came with the advantages of the environment being a familiar place where they knew the staff, as well as lessening the potential for women to be lost between providers. The model of co-location of midwives at GP clinics enabled the women to connect with a LMC midwife who was available and accessible. Co-locating midwives with GP clinics was suggested by Corbett et al. (2013) and Paterson et al. (2012) as a specific health care access strategy for women who live in CMH high deprivation communities to increase their accessibility to LMC midwifery care. Several studies have identified that health services being provided within a familiar environment is important to people accessing and engaging with the health service (Corbett et al., 2013; McAra-Couper et al., 2018; Priday & McAra-Couper, 2016; Ratima & Crengle, 2013; Southwick et al., 2012; Tanuvasa et al., 2013). The women in our study reflected the added advantage of feeling their health history was already known and the GP clinic staff and LMC midwives could share health information. This provided the potential for open dialogue between health professionals, which was valued by the women and enabled their maternity care to remain connected with their primary health care providers. The women witnessed and valued this collegiality, describing that face-to-face communication between LMC midwife and GP clinic personnel added to their sense of completeness of their maternity care, particularly for the hand back process at six weeks post-partum.

Findings from this study confirm that co-located midwifery services at GP clinics were acceptable to, and appreciated by, these participants. Further research could be undertaken to: 1) explore alternative venues for co-located midwifery services that ensure accessibility and acceptability for women living with poverty in Aotearoa NZ; 2) explore the possibility of an accessible internet-based means to assist women seeking midwifery care in a culturally sensitive forum; and 3) assess the role of navigational support workers and early pregnancy midwifery clinics that support navigation to LMC midwives.

## STUDY LIMITATIONS

This study focused on eight multiparous women who live in socio-economically deprived communities of the Counties Manukau region; hence, our findings might be specific to this geographical region and these women. While concerted efforts were made to recruit women uniquely related to the research question of this study, time restraints may have limited participant numbers and perhaps excluded women who live transiently who were unaware of the study. Finally, this study focused on the experiences of women who utilised the co-location midwifery service and did not explore the experiences of LMC midwives in co-located clinics.

Although these are limitations, the findings may, regardless, have relevance to other urban localities with high social deprivation.

## CONCLUSIONS

The women in this study found accessing LMC midwifery care early in their pregnancies a daunting journey, made onerous by the effort required to find a LMC midwife. They valued being able to access a clinic which co-located their LMC midwife with their GP, finding this helped them circumvent the maternity care maze. Barriers to accessing early LMC midwifery care included: not knowing how to find a LMC midwife, not having the confidence to contact a midwife, limited finances and limited time. Enablers to accessing early LMC midwifery care included receiving a recommendation from GP clinic personnel, and knowing that the co-location would probably make maternity care convenient, with a smooth transition from GP to LMC midwifery care.

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### Key points

- Some women encounter barriers to accessing early LMC midwifery care, including a lack of resources and limited knowledge about finding a midwife.
- A group of women in the Counties Manukau Health region expressed the need for help to access midwifery care.
- These women valued midwife recommendations from their GP clinic personnel, and having midwives co-located at their GP clinic.

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## LITERATURE REVIEW AND DISCUSSION PAPER

# The microbiota of the vulva and vagina: Ways of washing to optimise the protective function of the vulvo-vaginal microbiota during pregnancy

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## ABSTRACT

**Background:** The microbiota of the vulva and vagina has a crucial protective function, which is important for all women and has particular significance in pregnancy. Yet this microbiota is part of a delicately balanced ecosystem, susceptible to extrinsic factors which include the simple matter of how women wash themselves. Clinical observation and anecdotal evidence indicate that women in Aotearoa New Zealand have washing practices that may compromise the naturally acidic vulvo-vaginal environment crucial to optimising the protective function of the microbiota.

**Aims:** The aims of this review are: to determine if there is dissonance between how women are washing their vulva and vagina and recommended washing practices; and to raise awareness of the emerging significance of the vulvo-vaginal microbiota to women's health, particularly in pregnancy.

**Method:** A literature review was undertaken to discover what is reported (in the published literature) about the ways women wash themselves, products used, and their effect on the vulvo-vaginal microbiota. The evidence behind the “wash with water” recommendation was investigated.

**Findings:** There is a lack of primary research on ways of vaginal washing used by women in Aotearoa New Zealand. Globally, women are routinely using a variety of products that include soap, anti-bacterial wipes, gels and baby wipes, and invasive vaginal washing practices such as douching, flannel scrubs and internal soap cleansing. All washing products, including gentle soap but excluding lactic-acid based gels, alter pH levels when used on either the vulva or the vagina. Washing practices that alter vaginal pH levels can cause a microbial shift into a sub-optimal state that compromises the protective function of the vulvo-vaginal microbiota and is more susceptible to bacterial vaginosis and group B streptococcus vaginal colonisation. The frequency and duration within suboptimal states may be predictors of risk.

**Conclusion:** There is dissonance between the ways women wash their vulva and vagina, and evidence-based advice to just wash with water. The back-to-basics message “just wash with water” promotes a way of washing that optimises the protective function of the vulvo-vaginal microbiota, while also protecting the integrity of vulval skin, and supporting physiological self-cleaning of the vagina.

**Keywords:** bacterial vaginosis, microbiota, pregnancy, vagina, vulva, washing

## INTRODUCTION

A deeper understanding is emerging of the unique nature of female-related microbiota, its highly evolved relationship with health outcomes for women, neonates and children, and its role in reproduction (Younes et al., 2018). The maintenance of a healthy vulvo-vaginal microbiota has been recognised as important for optimal pregnancy outcomes (Barthow et al., 2016), for neonatal gastro-intestinal colonisation at birth and for subsequent development of the baby's immune system (Dominguez-Bello et al., 2010; Younes et al., 2018). Yet the vulvo-vaginal microbiota is part of a delicately balanced ecosystem, susceptible to many extrinsic factors that include the simple matter of how women wash themselves.

The rapid development of molecular testing techniques in the last 20 years has led to an exponential information explosion,

revealing a dazzling diversity of microbes existing in and on all ecological niches of the human body. Bacteria have now been identified in the placenta, uterus and amniotic cavity in women with healthy pregnancy outcomes, challenging the long-held belief that the human fetus develops in a sterile environment (Younes et al., 2018). Human skin has trillions of resident microbes seen as “partly us, partly not”, and is now viewed as a dynamic interface with, rather than a barrier to, the external environment (Hamblin, 2020). Increasingly, dermatological advice promotes washing practices that protect rather than eradicate skin microbiota (Gunter, 2019; Hamblin, 2020). Washing the genital area with water, and avoiding the use of scented soaps, shower gels, bubble baths, shampoos and antiseptics, is recommended by reputable health organisations including New Zealand Family Planning (Stewart, 2019) and

the United Kingdom National Institute for Health & Care Excellence (British Association for Sexual Health and HIV, 2014). However, clinical observation and anecdotal evidence indicate that women in Aotearoa New Zealand (Aotearoa NZ) are using soap, anti-bacterial wipes and vaginal flannel scrubs as part of their washing routines of the vulva and vagina.

“Feminine hygiene” products available include soap, “gentle” soap, soap with lactic-acid, body washes, foam, pre-moistened wipes, flavoured suppositories, powders and deodorant sprays, with women encouraged by mass media to wax, shave, douche, steam, sheet mask and flavour their vulva and vagina (Chen et al., 2017; Writes, 2020). Washing routines have become enmeshed with social constructs of cleanliness and wellbeing. The multi-million dollar feminine hygiene industry relies on women feeling their natural state requires “cleaning”, with the sinister implication that it is otherwise “dirty”. In 2015, for example, Canadian women spent Can\$6.8 million on vaginal wipes, with the use of vaginal washing products increasing amongst the younger generations (Crann et al., 2018). Why women choose certain washing practices is not well researched nor well understood, even by women themselves (Cottrell, 2010). Influences can be deep-seated, and range from family and local cultural practices, to broader societal influences such as religion, patriarchy, colonisation and marketing strategies inherent to capitalism.

The rather confronting question of “How do you wash your vulva and vagina?” is not routinely discussed with pregnant women. Women can be reluctant to raise the intimate and sensitive topic of the health of their vulva and vagina. This sense of *whakamā*, or shyness, is acknowledged by many cultures as a barrier to open conversation, effective interventions and more healthful practices (Farage & Bramante, 2006). In Aotearoa NZ, “recent studies confirm that it is Christianity and Victorian values ... that have suppressed talk about sexual and reproductive health, and marginalised Māori understandings of sexuality, relationships and reproduction” (Green et al., 2016, p. 28). Ambiguous colloquialisms used by women when referring to the vulva and vagina, such as “down there”, “mea”, “cooch” and “vajayjay”, reflect this discomfort and can contribute to confusion when clearer identification is required (Moran, 2020; Wiles, 2017).

This lingering taboo exists within the broader context of fragmented provision of healthcare to the women of Aotearoa NZ, and differential health outcomes between men and women, and between women of different ethnicities and socio-economic levels. Recent petitions for an integrated National Women’s Health & Wellbeing Strategy (Shahtahmasebi, 2021) reflect the critical need to more effectively address the health needs of Māori wāhine and Pasifika women, as well as maternal mental health, the health impact of intimate partner violence, and cervical cancer screening technologies. Vulvo-vaginal health has been stigmatised and under-researched (Younes et al., 2018). At a micro-level, the back-to-basics message “just wash with water” is fundamental to prioritising the health of women and their children, by supporting the physiological processes that ensure resilience and equilibrium of the unique ecosystem of the female microbiota.

This discussion paper considers the value of introducing a new conversation into early pregnancy care and the implications for midwifery practice. As background to this discussion, the vulvo-vaginal microbiota is outlined and findings of a literature review that establishes how women wash and the impact on the vulvo-vaginal microbiota are presented. Bacterial vaginosis (BV),

characterised by the disruption of the vaginal microbiota, is one of the most common vulvo-vaginal disorders experienced by women of reproductive age. BV in pregnancy is associated with increased risk of obstetric complications. Hence, this discussion paper also offers clinical considerations and practice points for the management of BV in pregnancy.

## The physiology of the vulvo-vaginal microbiome

The *microbiome* is defined as a microbial community associated with a particular environmental niche. The term *microbiota* refers to the microorganisms found in a specific environment, including bacteria, viruses and fungi (Microbiome Expert Working Group, 2017). Within the vulvo-vaginal microbiome there are multiple and diverse environmental niches, with discretely different microbiota residing within the vulva and vagina. This paper uses the terms “optimal” and “suboptimal” to identify microbiota community states, in favour over other commonly used terms such as “healthy/unhealthy”, “eubiosis/dysbiosis” or “balanced/imbanced”. War analogies, commonly used in microbiology, have been avoided where possible.

### The vulva

The vulva has been described as “a transitional zone between the arid desert of external skin surfaces and the tropical rainforest of the vagina” (Berg & Davis, 2006, p. 43). Yet the vulva has its own complex ecosystem with multiple habitats within the anatomical structures of the mons pubis, labia majora, labia minora, clitoris, hymen and vaginal vestibule. The appearance of the vulva is unique to each woman, with differences in symmetry, shape, size and colour. Gunter (2019) describes the vulva as the “ultimate multitasker”, as it provides physical and microbial protection to the female genital tract, as well as having an integral role in sexual pleasure and birth.

The external mons pubis and labia majora protect the more delicate tissues of the internal structures of the vulva and the vaginal vestibule. The skin has a keratinised epithelium that toughens and waterproofs, is relatively dry and produces hair. In contrast, the skin of the internal labia minora and vaginal vestibule is non-keratinised mucosa, hairless and has a thinner stratum corneum. While skin integrity is maintained by higher moisture levels, anti-microbial fatty substances, and sebum from sebaceous glands, the labia minora and vaginal vestibule are more permeable and susceptible to topical agents (Chen et al., 2017).

Vulval microbiota may include staphylococci, micrococci, diphtheroids, lactobacilli, streptococci, gram-negative rods and yeasts (Chen et al., 2017), with no single species common to all women. Due to the proximity of the vulva to the anal, vaginal and urethral orifices, it is continuously exposed to opportunistic pathogens, and relies on a naturally acidic environment (pH 3.8-4.2) to inhibit pathogen colonisation (Bruning et al., 2020).

### The vagina

The vagina is positioned beyond the vaginal vestibule and is composed mainly of mucosa-lined smooth muscle. The vagina has a dynamic, yet delicately balanced, ecosystem that is self-regulating, self-cleaning and resilient (Lewis et al., 2017). Extrinsic factors such as sexual activity, birth, contraception, antibiotics and hygiene practices and products, as well as intrinsic factors that include menstruation, hormonal levels and diet (Barrientos-Durán et al., 2020), can affect this environment. Chen et al. (2017) state: “The normal vaginal flora, acidic vaginal pH, and vaginal discharge are all components of the innate defense mechanisms that protect against vulvo-vaginal

infections” (p. 60). The vaginal microbiota are relatively stable but can still be variable, with natural fluctuations and significant differences between individuals, making consensus challenging as to what actually constitutes an optimal versus suboptimal microbiota (Microbiome Expert Working Group, 2017).

Vaginal microbiota are commonly classified into five or six community state types (CSTs; Jayaram et al., 2020; Ravel et al., 2011; Sabo et al., 2019). The first four are optimal CSTs, found in 73% of women and characterised by the dominant presence of one of four common lactobacillus spp. (*crispatus*, *iners*, *gasseri* and *jensenii*). The remaining CSTs, which are suboptimal, are characterised by fewer lactobacilli and dominated by a diversity of anaerobic bacterium, including the *prevotella* and *megaspheera* spp., *gardnerella vaginalis*, *sneathia vaginalis* and *atopobium vaginae* (Romero et al., 2014). The suboptimal CSTs are more susceptible to disease (Barrientos-Durán et al., 2020) and are associated with BV (Ness et al., 2002), group B streptococcus (GBS) vaginal colonisation (Yudin & Money, 2017), and candidiasis (van der Veer et al., 2019). However, numerous studies report the occurrence of suboptimal CSTs in healthy, asymptomatic women (Younes et al., 2018), challenging the assumption that healthy women are always colonised with high numbers of lactobacilli. Significantly, shifts may occur naturally between CSTs, but it is the frequency and duration within suboptimal states that are considered predictors of the risk of pathogenic overgrowth and infection (Ma et al., 2012).

The maintenance of a slightly acidic environment of pH < 4.5 is accepted as a hallmark beneficial activity of lactobacilli, achieved through the production of lactic acid (Younes et al., 2018). Lactobacilli also inhibit pathogen colonisation by forming a physical barrier on epithelial surfaces, producing antimicrobial agents and competing for nutrients, while also influencing immune modulation (Stojanović et al., 2012; Younes et al., 2018).

The vaginal microbiota of healthy pregnant women show significantly higher levels of lactobacilli compared to non-pregnant women, with a reduction of bacterial diversity. As pregnancy advances, levels of lactobacilli increase, with the exception of *L. crispatus* (Romero et al., 2014). Lactobacilli actively discourage colonisation by pathogenic bacteria that are implicated in adverse pregnancy and neonatal outcomes (Barthow et al., 2016; Marziali et al., 2019), including chlamydia trachomatis, *escherichia coli*, *neisseria gonorrhoea*, GBS, and BV-related bacteria such as *gardnerella vaginalis*.

The vaginal mucosa sheds surface cells approximately every four hours. This frequent shedding is useful for rapid repair, is a nutrition source for resident bacteria, and acts as a decoy to pathogens that attach and are then flushed out as part of the normal vaginal discharge. Involuntary actions of the smooth muscle assist in moving transudate, mucus and sloughed epithelial cells to the vaginal opening (Gunter, 2019). Vaginal discharge commonly measures between one and four millilitres per day, and increases in pregnancy in response to a greater circulating blood volume. This is a highly effective and natural cleansing process.

It is clear that supporting the vulvo-vaginal ecosystem to sustain optimal lactobacilli levels and maintain a naturally acidic environment is crucial to optimising the protective function of the vulvo-vaginal microbiota.

## LITERATURE REVIEW

The objective of the review was to establish, from what has been published, the ways women wash their vulva and vagina, the

products commonly used and the impact of these on the vulvo-vaginal microbiota. The review focussed on regular washing practices and excluded washing practices in the context of menstruation, aesthetics or sexual activity, including non-consensual.

Scholarly sources searched were PubMed, CINAHL, Cochrane Library, Google Scholar, Web of Science, Medline, and Biosis Previews. Search terms used were (vulv\* OR vagina\* OR genital) AND (washing OR hygien\*). Then separate searches were made with the following added: (AND microbio\*), (AND New Zealand), (AND (education OR promotion)), (AND 'bacterial vaginosis'). Another search trail was soap AND (washing OR hygiene\*) AND (vulv\* OR vagina\* OR genital) – then AND pH, AND microbio\*. A total of 98 papers were identified, with 56 having relevance to the topic. Other material included relevant web resources and recent book publications.

### How do women wash their vulva and vagina?

Globally, women would appear to use a wide variety of practices and products to wash their vulva and vagina. Anti-bacterial wipes, washes/gels, douches and baby wipes were identified as regularly used products in a large, Canadian, cross-sectional survey (Crann et al., 2018). Other common practices found were the use of wet wipes (Farage & Bramante, 2006), the insertion of a washcloth or tissue to wash the vagina and internal cleansing with soap and water (Esber et al., 2016; Ness et al., 2002). A relatively new, anti-microbial gel wash containing lactic acid is widely available (Bruning et al., 2020) but levels of usage have not yet been studied.

The practice and prevalence of douching, which is the insertion of a device into the vagina to flush liquid, have been comprehensively researched. Commercial preparations can consist of antiseptics, antibacterial preparations, alcohol, surfactant solutions and anti-microbials, while home-made preparations may use herbs, vinegar and water, household bleach, baking soda, yoghurt and water. A large, systematic review revealed that “vaginal douching is a common practice for almost one-third of women in the United States” (Cottrell, 2010, p.102). Other studies show that douching is also routinely practised in Canada (Crann et al., 2018), the United Kingdom (Farage & Bramante, 2006), Indonesia, Mozambique, South Africa and Thailand (Hilber et al., 2010), Turkey (Hacıoğlu et al., 2009), Brazil (Marconi et al., 2020), Korea (Ahn, 2013), Lebanon (Attieh et al., 2016) and the Netherlands (van der Veer et al., 2019).

No studies were found that specifically address the ways of washing used by women of Aotearoa NZ. Observations from a large, cross-sectional survey of Canadian women (Crann et al., 2018) are arguably the most transferable to the Aotearoa NZ setting. Given the multicultural nature of Aotearoa NZ society, it can be assumed with caution that the literature review findings may be similar and confirm my clinical observations and other anecdotal evidence of similar washing practices by women of Aotearoa NZ.

### Impact on the vulvo-vaginal microbiota

There is an acknowledged paucity of research on how vulval washing practices affect the vulval and vaginal microbiota (Barrientos-Durán et al., 2020; Gunter, 2019), with more attention given to how they affect pH levels. Chen et al. (2017) describe how harsh soaps irritate the vulval skin and mucous membranes and impact the local microbiota. They then detail how exogenous factors, for example the use of soap, detergents, perfumed products, lubricants and spermicides, occlusion with tight clothing or sanitary pads, and depilation practices, can increase pH levels of the vulval skin. The effect of soap on

human skin is well researched, with soap alkalinity associated with long-standing alterations to pH levels and disruption of the resident microbiota (Bruning et al., 2020; Skotnicki, 2018). All soaps, including gentle soaps, strip away natural oils and bacteria that are an important part of the skin's defence (Gunter, 2019). Alterations to skin microbiota can be long-standing after a disruptive event, as observed in a study by Nielsen and Jiang (2019) who found alterations to leg microbiota after swimming in the ocean persisted for at least 24 hours.

Products closer to the pH of vulval skin, such as lactic acid-based washing gels, appear to have minimal impact (Bruning et al., 2020), and can be recommended when washing is important to prevent inflammation or injury, such as with moderate to severe urinary or fecal incontinence. However, they are not necessary for routine washing of the vulva (Gunter, 2019).

There are numerous studies on the impact of vaginal washing practices on the vaginal microbiota. Douching is consistently associated with shifts to a suboptimal, lactobacillus-reduced microbiota with increased diversity of anaerobic microorganisms (Chen et al., 2017; Cottrell, 2010; Crann et al., 2018; Ness et al., 2002; van der Veer et al., 2019) that promote the growth of *C. albicans* (van der Veer et al., 2019) and predispose women to BV (Ness et al., 2002). While there is some debate as to the causal direction (Barrientos-Durán et al., 2020; Sabo et al., 2019), the weight of evidence concludes that vaginal douching should be avoided.

The use of gel sanitisers has been associated with higher rates of candidiasis and BV; feminine/baby wipes with higher rates of urinary tract infections; and vaginal moisturiser/lubricant with higher rates of both candidiasis and urinary tract infections (Crann et al., 2018). Bubble bath preparations and antiseptic solutions on the vulva or in the vagina are associated with an increased risk of BV (Chen et al., 2017). Washing inside the vagina (using cloth, lemon juice, soap or detergent) on a regular basis is associated with BV (Sabo et al., 2019), and is also an independent risk factor for vaginal GBS colonisation, a leading cause of early-onset neonatal sepsis (Cools et al., 2016).

### Bacterial vaginosis during pregnancy

Disturbing the vulvo-vaginal microbiota has particular significance during pregnancy. BV is the most common cause of abnormal vaginal discharge in reproductive women (Lewis et al., 2017; Ma et al., 2012), with an estimated 25% of pregnant women in the US affected (Stojanović et al., 2012). There is currently no published Aotearoa NZ data, with routine reporting of BV not required. BV is generally characterised by disruption of the vaginal microbiota equilibrium, with significantly reduced numbers of lactobacilli, decreased lactic acid concentrations, and elevated pH levels (Petrova et al., 2015). This supports an overgrowth of pathogenic bacteria such as *Gardnerella vaginalis*, *Mycoplasma hominis*, and/or *Mobiluncus* species (Lamont, 2015). Ma et al. (2012, p. 2) speculate that “the disturbed state itself may constitute the clinical syndrome known as BV, which as a disruption of ecological equilibria is believed to increase the risk of invasion by infectious agents”. Despite decades of research the specific aetiology of BV remains controversial (Muzny & Kardas, 2020).

BV in early pregnancy has been classified as a risk factor for preterm birth (Integrative Human Microbiome Research Network Consortium, 2019; Lamont, 2015; Leitich et al., 2003), although the precise causal pathway is unclear. BV is also associated with an increased risk of premature rupture of fetal membranes and chorioamnionitis (Jayaram et al.,

2020). Furthermore, BV facilitates the acquisition of sexually transmitted infections such as gonorrhoea, chlamydia and HIV (Petrova et al., 2015). There is some speculation that the thick, multispecies biofilm typical of BV may play a part in bacterial transmission from vagina to fetal membranes (Jayaram et al., 2020; Lim et al., 2010). Until a more precise aetiology of BV is known, management in pregnancy remains an important issue (Livengood, 2009; Shimaoka et al., 2019).

### Clinical considerations

The classic presentation of BV is of a moderately increased vaginal discharge that is thin, whitish-grey, sometimes “frothy”, and adherent to the vaginal wall (Table 1). There is usually a distinctive “fishy” odour. Symptoms often self-resolve; however, it is recommended that symptomatic BV is treated in pregnancy (Perkins, 2019; Yudin & Money, 2017). Anti-microbial treatment aims “to improve symptoms and possibly reduce the complications associated with BV in pregnancy” (Jayaram et al., 2020, p.4). Treatment can be commenced immediately with pregnant women who are clearly symptomatic, or once diagnosis is confirmed (Perkins, 2019; Yudin & Money, 2017).

The routine screening for BV and treatment of asymptomatic women with an incidental BV diagnosis are not currently supported in pregnancy (Perkins, 2019; US Preventive Services Task Force [USPSTF], 2020). Some practitioners may choose to screen pregnant women with a history of previous preterm birth <35 weeks and treat accordingly (Jayaram et al., 2020; Yudin & Money, 2017). However, the evidence is inconclusive on the benefits of treating asymptomatic women who test positive within this group (Lamont, 2015; USPSTF, 2020).

Diagnosis of BV from a Gram stain-based test (the current gold standard) is determined by the relative concentration of lactobacilli (long gram-positive rods) to gram-negative and gram-variable rods and cocci, using the Nugent score. This method of diagnosis has led to speculation that there may also be over-diagnosis (Ma et al., 2012), with healthy, asymptomatic women who have innate low levels of lactobacillus potentially receiving a BV diagnosis. New molecular tests for diagnosis represent promising point-of-care diagnosis (American College of Obstetricians and Gynecologists [ACOG], 2020).

Recurring BV is common, with up to 30% of women experiencing a recurrence within three months and 50% within twelve months of treatment (ACOG, 2020). There are few data available regarding optimal management strategies for women with persistent or recurrent BV. Retreatment is an acceptable initial approach (ACOG, 2020; Perkins, 2019), before considering medical referral. Switching between approved antibiotic medications and modes of administration may then be considered (Remaly, 2020). New treatments being explored emphasise biofilm disruption; the re-establishment of normal acidic vaginal pH, for example with microbiota transplants and lactic acid gel (Remaly, 2020); and treatments that manipulate and restore an optimal vulvo-vaginal microbiota, for example probiotic therapies (Barthow et al., 2016).

BV is a perplexing condition but, due to associations with increased risk of obstetric complications, should not be underestimated. Establishing clear prevention strategies without precise aetiology is difficult, but consideration of washing practices would appear to be reasonable. Avoiding washing practices associated with an increased risk of BV, and washing in ways that maintain the naturally acidic vulvo-vaginal pH, may reduce the frequency of shifts from an optimal to suboptimal vaginal environment and minimise opportunities for BV-related

bacteria to establish. Targeting women’s modifiable behaviour in pregnancy to reduce the chance of BV and the appropriate management of BV are both relevant to midwifery practice.

**Table 1. Practice points regarding bacterial vaginosis\***

<b>Identifying</b>	
Woman concerned about vaginal discharge symptoms:	
	<ul style="list-style-type: none"> <li>• Increased vaginal discharge</li> <li>• Discharge is whitish grey and may be “frothy”</li> <li>• Distinctive “fishy” odour</li> </ul>
<b>Assessment</b>	
Take a history and identify:	
	<ul style="list-style-type: none"> <li>• Volume</li> <li>• Colour</li> <li>• Frequency (constant or intermittent)</li> <li>• Odour</li> <li>• Pain or itchiness</li> <li>• Pelvic or urinary symptoms</li> <li>• Any contact with STI</li> <li>• General history</li> </ul>
Routine screening is not currently supported.	
<b>Tests</b>	
	<ul style="list-style-type: none"> <li>• Examination of vulva and vagina (speculum)</li> <li>• Take a high vaginal swab for Gram stain and culture</li> <li>• Take a vulvo-vaginal swab to test for chlamydia, gonorrhoea and trichomonas</li> <li>• Check antenatal blood tests for serology results</li> </ul>
BV is not considered an STI but other STIs need to be excluded.	
<b>Treatment</b>	
	<ul style="list-style-type: none"> <li>• If symptomatic of BV, treatment of pregnant women in Aotearoa NZ can be offered and commenced with informed consent before swab results are back.</li> <li>• Metronidazole 400mg bd for 7 days. Advise to take with meals to reduce possible side effects such as nausea or upset stomach.</li> <li>• Metronidazole 2gm stat (5 x 400mg) remains a valid option if there are issues of compliance or at woman’s request, but is less efficacious with a higher rate of relapse.</li> <li>• Advise women to contact either midwife or GP if symptoms persist or return.</li> </ul>
Please note that treatment of BV with pharmacological boric acid or metronidazole vaginal suppositories is not recommended for use in pregnancy.	

\* Adapted from New Zealand Sexual Health Service (2017).

**A new conversation in pregnancy?**

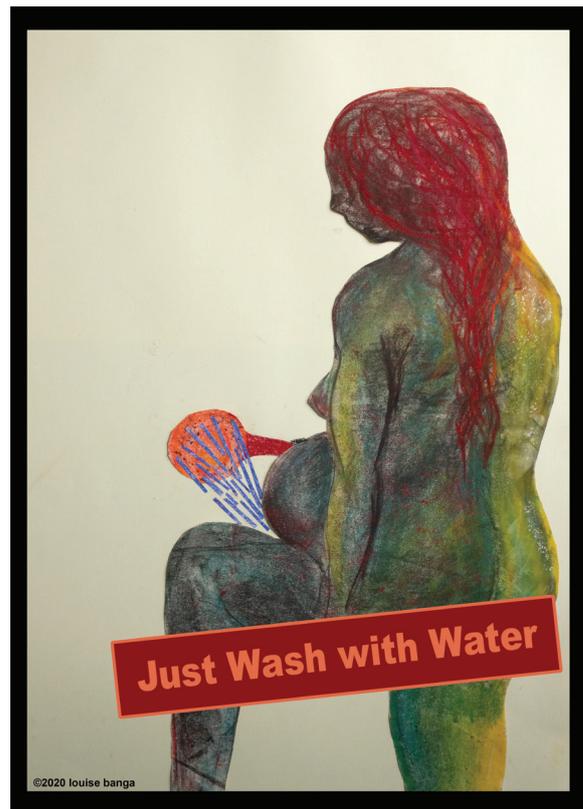
It appears that there is value in the integration of a conversation about vulvo-vaginal washing practices into early pregnancy care. It will be important that this highly intimate conversation is approached with sensitivity, and in a way that honours the diversity of meaning and experiences for all women of Aotearoa NZ. Midwives are well placed to support women through this conversation, having a practice model that enables women to control the determinants of their health, and that focusses on building a trusting relationship.

There are various ways to integrate this conversation into antenatal care and discuss ways of washing that optimise the protective function of the vulvo-vaginal microbiota during pregnancy. Taking the time to discover and then use the words women are comfortable with to identify their genital anatomy, while at the same time taking the opportunity to demystify and inform, may encourage women to talk more freely about their bodies in the future.

The “just wash with water” message sits easily alongside “always wipe from the front to the back after having a bowel motion”, and “pass urine soon after sexual activity” self-care advice. These messages are usually delivered in the context of pregnant women being more susceptible to urinary tract infections (Betschart et al., 2020). As health practitioners discussing healthy ways of washing, being aware of the deep-seated nature and diversity of factors that influence a woman’s attitude to her genital health is important. Women may have changed their usual practices in response to being pregnant; for example, not using condoms, washing more or washing less, using different products, changing sexual behaviours and frequency etc. There may be a history of sexual or genital abuse, or fear-based behaviours that include blocking out or, conversely, acutely focussing on genital health. With current levels of poverty and homelessness in Aotearoa NZ, there may also be issues with easy access to washing water.

The “just wash with water” message has synchronicity with advances in skin care that prioritise the preservation of microbiota, and with environmental and anti-consumerist movements, while challenging the ethics of capitalism and the advertising industry. These are issues that may also trigger women to reconsider how they care for their vulva and vagina.

**Figure 1. Author’s visual tool to help introduce the topic of vulvo-vaginal care**



The graphic (Figure 1) was created by the author, and permission is given for it to be used as a visual tool to help introduce the topic, or display as a poster in antenatal clinics. There are also some excellent YouTube clips with evidence-based scripts that discuss vulvo-vaginal care; two examples are *Pelvic love: vulval/ vaginal hygiene - how to keep the vulva happy* (<https://www.youtube.com/watch?v=BzUvimxWWc>) from the United Kingdom and *Madge the vag* (<https://www.youtube.com/watch?v=f35fxT0sHEs>) from the United States. No Aotearoa

NZ-based resources have been found on this subject, so development of context-specific educational resources for women and midwives (including multilingual versions) would be helpful. Integrating the “just wash with water” message into other Ministry of Health pregnancy resources may be a useful first step.

There is growing scientific interest in female-related microbes and their relationship to health outcomes for pregnant women. However, more research is needed, looking specifically at the Aotearoa NZ context, to explore the factors that influence women’s choices when considering washing practices of the vulva and vagina.

## CONCLUSION

Women are regularly using a variety of products and ways of washing that are not evidence-based and do not follow professional recommendations for optimal vulvo-vaginal health. All washing products, including gentle soap but excluding lactic acid-based gels, alter protective pH levels when used on either the vulva or the vagina. Washing practices that alter vaginal pH levels can cause a microbial shift into a suboptimal state that is more susceptible to pathogenic overgrowth and infection. High frequency and longer duration within suboptimal states are thought to be predictors of risk. Douching and invasive vaginal washing practices increase the risk of BV and GBS vaginal colonisation, conditions associated with an increased risk of obstetric and neonatal complications. Gentle washing of the vulva with water and avoidance of any vaginal washing are best practice to help maintain optimal vulvo-vaginal microbiota and support the protective function. Vulval washing with water also protects the integrity of vulval skin, and supports physiological self-cleaning of the vagina. This paper argues that discussion on women’s ways of intimate washing is an important aspect of pregnancy care and the simple “just wash with water” message is evidence-based and requires more resources to support its use.

## CONFLICT OF INTEREST DISCLOSURE

The author declares that there are no conflicts of interest.

### Key points

- The microbiota of the vulva and vagina has a crucial protective function, yet is part of a delicately balanced ecosystem susceptible to extrinsic factors that include the simple matter of how women wash themselves.
- Evidence supports that gentle washing of the vulva with water and avoidance of any vaginal washing products are best practice to maintain an optimal vulvo-vaginal microbiota.
- The “just wash with water” message sits easily alongside advice such as “always wipe from the front to the back after having a bowel motion” and “pass urine soon after sexual activity”, delivered in the context of pregnant women being more susceptible to urinary tract infections.

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## AOTEAROA NEW ZEALAND RESEARCH

## Promoting positive interactions between midwives and obstetricians at the primary/secondary interface

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### ABSTRACT

**Background:** Interprofessional communication is a critical component of safe maternity care. The literature reports circumstances in Aotearoa New Zealand and overseas when interprofessional collaboration works well between midwives and obstetricians, as well as descriptions of unsatisfactory communication between the two professions.

**Aim:** To explore and define effective collaboration between midwives and obstetricians at the primary/secondary interface in maternity care, in order to generate suggestions to foster positive collaboration.

**Method:** Eight primary care midwives, three obstetricians and two obstetric registrars from a single District Health Board in Aotearoa New Zealand were interviewed about their interactions at the primary/secondary interface and their understanding, and use, of the Referral Guidelines. The theoretical perspective was Appreciative Inquiry. Data were analysed using thematic analysis.

**Findings:** Results indicate usually positive interprofessional interactions. Dominant emergent themes are the need to negotiate differing philosophies, to clarify blurred boundaries that sometimes lead to lack of clear lines of responsibility, and the importance of three-way conversations. Of the three themes, this article focuses on three-way communication between midwife, obstetrician/registrar and woman. Participants reported that, when effective three-way communication between woman, midwife and obstetrician occurred, philosophical difference could be negotiated, blurred boundaries clarified and understanding of the respective roles of the LMC midwife and the obstetric team promoted. Participants value the Referral Guidelines but report some limitations to their applicability.

**Conclusion:** Effective three-way communication promotes good maternity care. This study has identified ways to support optimal communication.

**Keywords:** interprofessional communication or collaboration, maternity care, midwives, obstetricians, primary/secondary interface

### INTRODUCTION

When women transfer from primary to secondary or tertiary maternity care, pregnancy and/or birthing have departed from normal, sometimes acutely. This is an often stressful and risky time for women. Effective interactions between the health professionals involved are vital in maintaining the safety and wellbeing of women and babies. In Aotearoa New Zealand (Aotearoa NZ) most primary maternity care is carried out by community-based midwives, known as LMCs (Lead Maternity Carers), who practise autonomously and refer to obstetricians and allied medical specialists, within secondary or tertiary maternity hospitals. Care is supported by autonomous hospital-based (core) midwives.

#### Importance of communication in healthcare

Effective communication between health professionals has been identified as vital to safe healthcare delivery. Kohn et al. (2000) found that medical errors caused 44,000 to 98,000

deaths annually in hospitals in the United States of America (USA), reporting communication failures as a leading factor in many adverse events. Within maternity care, unsatisfactory communication has a similar role in causing adverse events. An international review, focused on handover of care in maternity, reported obstetrics and gynaecology as being overrepresented in adverse events due to poor handover of care (Spranzi, 2014). In Aotearoa NZ the Perinatal and Maternal Mortality Review Committee (2018), reporting on perinatal loss in 2016, stated communication failures were implicated in potentially avoidable perinatal loss.

#### Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines)

Clinical guidelines are used in many healthcare areas, including maternity, to standardise care (Behruzi et al., 2017; Healy & Gillen, 2016; Skinner & Foureur, 2010). The Referral Guidelines, published by the Ministry of Health (2012), aim

to clarify primary/secondary interface interactions in Aotearoa NZ, providing a list of conditions warranting consultation with, or transfer of care to, secondary obstetric services. The Referral Guidelines emphasise the importance of primary/secondary interface communication, epitomised by the explicit requirement for a three-way communication between woman, midwife and obstetrician, whenever there is a consultation with secondary services or a transfer of clinical responsibility. Three studies gave insight into Aotearoa NZ LMC midwives' use of the Referral Guidelines (Norris, 2017; Skinner, 2011; Skinner & Foureur, 2010). LMC midwives regarded the Referral Guidelines as a useful tool (Norris, 2017; Skinner, 2011). Consistent referral by LMC midwives to secondary or tertiary obstetric care was found across all midwife levels of experience, and regardless of prior nursing or direct entry midwifery education, or whether Aotearoa NZ or overseas midwifery education programmes had been undertaken (Skinner & Foureur, 2010), suggesting that LMC midwives usually followed recommendations laid down in the Referral Guidelines.

### Previous research on professional communication between primary care midwives and obstetricians

Amongst the literature were descriptions of successful collaboration between midwives and obstetricians, both in Aotearoa NZ (Skinner, 2011; Skinner & Foureur, 2010) and overseas (Beasley et al., 2012; Chang Pecci et al., 2012; Ogburn et al., 2012; Perdion et al., 2013; Romijn et al., 2018; Stevens et al., 2012). Factors promoting effective communication included flat hierarchies and greater midwifery autonomy (Barker et al., 2019; Beasley et al., 2012; Downe et al., 2010; Skinner & Foureur, 2010), clear role definitions and boundaries (Munro et al., 2013; Norris, 2017), trust and respect (Chang Pecci et al., 2012; Downe et al., 2010; Lane, 2012), regular interprofessional interaction and use of structured communication tools (Marshall et al., 2009; Norris, 2017; Romijn et al., 2018), robust conflict resolution processes (Chang Pecci et al., 2012), shared education, (Meffe et al., 2012; Murray-Davis et al., 2014) and effective communication systems (Psaila et al., 2015; Schmied et al., 2015; Shaw et al., 2013).

Some studies described predominantly unsatisfactory relationships between obstetricians and midwives (Barker et al., 2019; Behruzi et al., 2017; Downe et al., 2010; Lane, 2012; McFarland et al., 2019; Psaila et al., 2015; Ratti et al., 2014; Reiger, 2011; Schmied et al., 2015; Shaw et al., 2013; Watson et al., 2016). Factors leading to unsatisfactory relationships were historical interprofessional animosity and doctors' mistrust of midwifery education (Downe et al., 2010; Ratti et al., 2014; Watson et al., 2016), power imbalance favouring medical discourses (Barker et al., 2019; Lane, 2012; McFarland et al., 2019; Ratti et al., 2014; Reiger & Lane, 2009; Watson et al., 2016), differing philosophies and poor information systems and transfer processes (Psaila et al., 2015; Schmied et al., 2015; Shaw et al., 2013).

An Aotearoa NZ postal survey of 433 LMC midwives gave insight into LMC midwifery referral practices (Skinner & Foureur, 2010). Participants reported on data for 4251 women under their care. Consultation with secondary care was required for 35% of the women, with 43% of these referrals requiring transfer of care to obstetric services. LMC midwives continued to provide care in 72% of instances of transfer of care, demonstrating that LMC midwifery care often continued when secondary services became involved. Predominantly satisfactory relationships between LMC midwives and obstetricians were reported, with 72% of

LMCs reporting feeling supported by obstetricians to continue care after transfer of clinical responsibility.

A related study evaluated the experiences of a cohort of women requiring transfer of care to secondary services in Christchurch, Aotearoa NZ (Grigg et al., 2015). A postal survey of 174 women six weeks post-partum found generally positive experiences, suggesting that communication practices between their midwives and the obstetricians they were referred to, usually led to positive outcomes for women. Grigg et al. reported that when unsatisfactory experiences occurred, poor communication by LMC midwives, obstetricians and other health professionals had been a significant factor.

For meaningful collaboration, both parties needed equal input, and women needed involvement in decisions relating to their care. Midwifery autonomy was described as an important factor promoting successful interprofessional collaboration (Beasley et al., 2012; Downe et al., 2010; Hartz et al., 2012). Aotearoa NZ's midwifery-led maternity system fulfils this criterion (Grigg & Tracy, 2013). Skinner and Foureur (2010) identified that, while a significant proportion of the literature revealed components of positive collaboration between the two professions, there was minimal literature on how to promote positive collaboration.

The literature found on communication and collaboration between midwives and obstetricians emphasised the importance of good communication at the primary/secondary interface but did not explore in detail how to achieve this. This research sought to address this gap by identifying practices and ideas promoting positive interprofessional communication between midwives and obstetricians and the means to promote these practices. The research question is "How can positive communication between LMC midwives and obstetricians be promoted?"

### AIM

This study explored communication at the professional interface between LMC midwives, who provide most primary maternity care in Aotearoa NZ, and obstetricians who provide predominantly secondary or tertiary care. By exploring and defining effective collaboration between midwives and obstetricians at the primary/secondary interface in maternity care, positive interprofessional interactions can be identified.

### METHOD

Ethical approval for the study was obtained from the Otago Polytechnic Ethics Committee on 11 July 2017. To ensure that relevance and safety of the research for Māori were considered, an application for the research to proceed was requested from, and granted by, Otago Polytechnic's Kaitohutohu Office.

The theoretical approach was Appreciative Inquiry (AI). AI was first proposed as a theoretical perspective in the 1980s and initially applied to business (Cooperrider & Srivastva, 1987). More recently, AI has been adopted in qualitative healthcare studies (e.g. Smythe et al., 2009). The framework of AI encourages description of currently positive experiences, visualisation of ideal circumstances, and development of proposals to achieve this ideal. Application of AI to research involves a cycle described as the 4D cycle. The 4D cycle identifies four components: Discovery, Dream, Design, and Destiny (Trajkovski et al., 2013). In Discovery, study participants are encouraged to identify what currently works well. In the Dream component, participants are invited to imagine how things would look in an ideal world. For Design, participants are invited to give practical advice on how to achieve the dream. Destiny refers to participant involvement leading to positive change and further discovery.

For example, this study found that being known to each other improved interprofessional communication between LMCs and obstetricians (Discovery). Participants wanted to get to know each other more readily (Dream). One suggestion was for new staff members and LMCs to provide introductory vignettes with a photo of themselves for inclusion in the District Health Board's (DHB's) monthly email newsletter (Design). This action aimed to speed the process of becoming known to each other, thereby improving interprofessional communication (Destiny).

## Data collection

To recruit midwifery participants, permission was obtained to use the New Zealand College of Midwives' regional email database to invite LMC midwife member participation. To recruit obstetric participants, a submission was made to the study DHB's research committee. Approval was gained to use the DHB's email database to invite DHB-employed obstetricians and obstetric registrars to participate. The final participants were eight LMC midwives currently practising in the study region, and three obstetricians and two obstetric registrars currently practising in the public sector in the study region.

A semi-structured interview guide was designed, piloted and refined, using the principles of AI. Therefore, the questions were designed to explore the positive aspects of current interprofessional communication and how these could be developed. For example, all participants were asked "Can you describe a situation where communication with a midwife/obstetrician was optimal?" Signed consent for the recorded interview to occur was sought immediately prior to interviews. Interviews were conducted by the primary author, an LMC midwife access holder in the study DHB. All interviews were face-to-face and at a place of choosing of the participant. Interviews were recorded and recordings transcribed by a research assistant. Anonymised transcripts were emailed to participants with a request to check that the transcript was a true representation of their views. One participant removed a story as it was too identifying; otherwise, all were returned with minimal change. Data collection continued until no new information was emerging from the coding of interview transcripts. Coding of data was carried out by the researcher and reviewed by the thesis supervisors.

## FINDINGS

Data analysis resulted in the identification of three themes: a need to negotiate differing philosophies between LMC midwives and obstetricians, a need to clarify blurring of boundaries and professional responsibilities, and the pivotal role of three-way communications between women, midwives and the obstetric team. In this paper, only three-way communication will be addressed in detail, alongside its interaction with the two other themes.

Three-way communication was a key factor in promoting successful interprofessional collaboration, negotiating philosophical difference and clarifying blurred boundaries. Table 1 contains a summary of findings framed by AI.

### Positive relationships improve communication

A common theme of usually positive interprofessional relationships was widely reported by both participant groups. As one midwife participant reflected, *I often ring the WAU reg [Women's Assessment Unit registrar]... and I generally find the information I get back is good and I'm usually happy with that* (MW1).

Participants identified trust and respect as promoting positive communication between midwives and obstetricians. Respect and trust were promoted by using respectful language, including

both LMC midwives and obstetricians in conversations, and by listening and engaging in three-way communication. For example, MW7 reported feeling respected in an acute situation when she was listened to:

*I said, 'just had the first twin!' And I was supporting the tummy for the second one and everybody moved with speed. And I guess there probably was less talking and [the obstetrician] could see what was in front of them... I said to him, 'this is why she was being induced' and I was talking and no one else was questioning me... and everybody just manoeuvred.* (MW7)

### Personal relationships and interprofessional communication

The advantage of knowing each other was expressed strongly by both participant groups, promoting trust in clinicians' practice and better understanding of each other's philosophy:

*I think traditionally no matter where in the world you are, often doctors will have a different view to birth than midwives will. And a lot of that is just understanding why the midwives believe a certain thing and why the obstetric team may have a certain viewpoint and trying to work somewhere to come in between ... when you know each other, things work better but I don't know what the solution is. You have to get to know each other first for that to happen.* (OB5)

OB5's observation suggested that collaboration would improve if new doctors and LMC midwives had more opportunities to get to know each other, perhaps outside of the workplace context.

OB2 discussed practical difficulties in emergencies, when she did not know the LMC:

*I often find it very difficult because... I don't know their [the LMC's] name... one of the key things in an emergency is you say, 'Rachel can I get you to...'; because you have to get people's attention.* (OB2)

OB2's observation recognised a need for clear name and role identification for all health professionals. OB2 proposed that different coloured scrubs for different roles might improve role identification.

Knowing each other makes it easier for midwives to approach obstetricians:

*... when you've been around for a while and you know them, you probably are more able to... knock on their door... the longer you've been in the job, the more solid it is for communication.* (MW7)

Participants reported that being known to each other was promoted by shared education, interdisciplinary meetings where all were empowered, and social interaction. Participants reported that the study DHB provided some shared events, including perinatal mortality meetings, some education sessions and sporadic other events. Participants commented positively on interdisciplinary scenario-based training such as Practical Obstetric Multi-Professional Training (PROMPT) study days. OB2 used facilitative language to discuss her personal commitment to promoting shared education:

*I'd love to see more... coming together of midwives and doctors... that's in a small way what I've tried to facilitate... with the workshops that we've done... I'd love to have midwives in a learning space, to try and just nurture relationships.* (OB2)

Midwife participants' proposals to promote collegiality included open days at birthing units for doctors, regular social events and introducing new DHB staff members and LMCs in DHB newsletters to improve familiarity with each other.

### Referral Guidelines as an aid to communication

Both participant groups valued the Referral Guidelines, reporting that they played a significant role in reducing blurring of boundaries at the primary/secondary interface, ensuring safety for women and babies, and providing reassurance to women, midwives and obstetricians that appropriate timely referral was the expected norm.

*I think the guidelines are really good... I think some women are really concerned... that midwives don't want to refer... by showing them that you look at these... they understand... that we do have guidelines for our practice... (MW4)*

*... it's there, to ensure that LMCs do their minimum duty, and also that obstetricians don't reject really important things. (OB2)*

However, LMC participants discussed incidents where they found it unclear who should be responsible for care after secondary care

consultation, and where communications contained incomplete information which could not be queried:

*... I just got a text the other night from WAU... which said that my woman had been there... raised blood pressure. She [the woman] text me later to say... 'you need to check my blood pressure in two days' time'... she's 27 weeks, she's got essential hypertension, she's got a BMI [Body Mass Index] of 53... Is this my job?... The communication I then had... a text from the new WAU communication... saying that they'd seen her, and her follow up was [in] a week, with a scan and a follow up with the obstetric team... There was no request for repeat blood pressure... I didn't actually know, can I reply to that text and say, 'she says she needs a repeat blood pressure'? (MW2)*

Under the Referral Guidelines, consultation with secondary services is recommended for hypertension. For a BMI greater than 40, transfer of care to secondary services is recommended. There are no recommendations around the gestation at which hypertension manifests. The Referral Guidelines specify that after consultation with no transfer of care, the responsibility remains with the LMC midwife, while transfer of care should

**Table 1: Summary of findings framed by Appreciative Inquiry**

Component	Key findings
<b>Discovery:</b> What is already working well?	<ul style="list-style-type: none"> <li>Positive interprofessional relationships exist between obstetricians and LMC midwives despite the acknowledged philosophical difference</li> <li>Being known to each other promotes positive interaction</li> <li>Shared education and LMC midwife input into policy and protocols promote positive relationships</li> <li>The Referral Guidelines improve the clarity of primary/secondary interface boundaries</li> <li>Having intermediary midwives relaying information between LMC midwives and obstetricians improves communication if intermediaries are empowered to negotiate</li> <li>Phone communication between LMC midwives and obstetricians allows resolution of philosophical difference and blurred boundaries</li> <li>When three-way communication occurs effectively, philosophical difference and blurred boundaries are usually resolved</li> </ul>
<b>Dream:</b> What would be ideal?	<ul style="list-style-type: none"> <li>A world where all professionals are known to each other</li> <li>Optimal three-way communication between woman, LMC midwife and obstetrician at every primary/secondary interface interaction</li> <li>Phone calls from obstetrician to LMC midwife whenever there is potential need for negotiation over care</li> <li>Empowerment of core midwife intermediaries to negotiate with LMC midwives over secondary care decisions relating to women's care</li> <li>Straightforward processes to resolve communication breakdown</li> <li>Optimal use of up-to-date communication modalities</li> </ul>
<b>Design:</b> Participants' proposals to move towards the ideal	<ul style="list-style-type: none"> <li>Interprofessional social events for new midwives and obstetric doctors</li> <li>Open days at hospital and primary birth centres</li> <li>Large name badges, with clear name and role</li> <li>New staff members to introduce themselves in DHB electronic newsletters</li> <li>Communication between LMC midwife and obstetrician, by phone wherever possible, to negotiate responsibilities for ongoing components of care and timing of birth interventions</li> <li>Use speaker phone technology to allow three-way communication to include the LMC midwife in obstetric clinics</li> <li>Institute appropriate information technology (IT) systems to facilitate communication between primary and secondary care</li> <li>Set up phone and email contact points and pathways to resolve communication issues</li> <li>Institute policy allowing intermediary midwives to negotiate timing of inductions and roles for ongoing management following obstetric consultation</li> </ul>
<b>Destiny:</b> Anticipated outcome after instituting participants' proposals	<ul style="list-style-type: none"> <li>Social events, shared education and introductory vignettes facilitate being known to each other, leading to improved communication</li> <li>Optimal IT use facilitates appropriate timely communications between LMC midwives and obstetricians, improving three-way communication</li> <li>Simple processes to resolve breakdown in communication ensure safety for women and promote better three-way communication</li> <li>Facilitating women's access to their electronic records improves three-way communication</li> </ul>

result in transfer of responsibility. In the scenario above there was blurring of the boundaries between the ongoing responsibilities of the LMC midwife and the secondary care team. The Referral Guidelines did not clarify responsibilities for providing the extra care required, insufficient information was communicated, and no three-way negotiation occurred. In contrast, a more satisfactory interaction was described by MW1:

... [baby's] growth had dropped down to the 10th centile... she lived in [semi-rural location]... they saw her at [secondary care clinic] and then made a plan with us after communicating with us... [to] have scans in the community... they got what they wanted with the scans but it was woman focussed because she could just go to [radiology unit in her home town]... it meant more work for us but we were happy to do that because it kept her out of the hospital... we still did the monitoring, they're happy, we're happy... that was a phone call as well. (MW1)

The Referral Guidelines recommend consultation when ultrasound scans suggest the baby is small for gestational age (SGA) with an estimated fetal weight on ultrasound scan less than the 10th centile on a customised growth chart. Satisfactory communication was promoted by a timely phone call where the woman's needs were addressed and the roles of the obstetrician and midwife were negotiated, clarifying the primary/secondary interface boundary. The difference between this scenario and the previous one was that the Referral Guidelines' requirement for three-way communication was followed in the second case. Analysis of these two scenarios identified that when three-way communication occurred after consultation, a more satisfactory outcome for the woman, LMC midwife and obstetrician was negotiated.

### Three-way negotiation clarifies boundaries and creates common ground

Participants reported that, when effective three-way communication between woman, midwife and obstetrician occurred, philosophical difference could be negotiated, blurred boundaries clarified and understanding of the respective roles of the LMC midwife and the obstetric team promoted. This was particularly important when a woman's choices fell outside recommended medical practice. The woman's involvement in discussions supported woman-centred care:

... there was this woman who wanted a [vaginal] breech delivery... She knew she [only] wants a doctor to be in once she's fully dilated ... we knew what she wants... When we said, 'we need CTG monitoring' she declined... she knew what the risks are, and she had said 'I will be responsible for this'... So it made it easy for us, not to keep worrying... we won't be involved but we'll stand beside. (OB3)

Three-way negotiation clarified understanding of the woman's choices and the respective roles of the LMC midwife and the obstetric team. The obstetric participant reported reduced anxiety as a result.

Both midwives and obstetricians reported usually positive face-to-face or phone interactions. In most birthing situations, participants reported good three-way communication because all participants were present:

...when everybody's in the same room then actually that works very well... the vast majority of obstetricians are

respectful and communicate reasonably well in that three-way process. (MW2)

Obstetric participants reported that LMC midwives occasionally attended secondary care clinic with women. This LMC attendance facilitated constructive three-way conversations but was time inefficient for LMCs:

Do you know what was good? When midwives used to come to clinic with the patients and spend the whole afternoon waiting to be seen!... I know that's not good use of their time... when the LMC knew potentially that the patient was going to be maybe induced or that there was difficulty that they'd come... as their woman's advocate... but it wasn't like them and us. (OB4)

MW1 reported facilitating three-way conversations by phone, advising women to request the obstetrician phone the LMC during their consultations with potential to use speaker phone technology to facilitate three-way conversations:

I said, 'look, if you feel pressured then get them [the obstetrician] to ring me... you've made a good decision. You've made it [based] on informed consent... if you feel pressured or you feel as though you're having to argue your point then you ring us because that's our job'. (MW1)

Three-way communication facilitated by speaker phone technology was more time efficient than attendance at secondary care clinic for the LMC.

### Structured communication tools improve communication

At the time of this study, participants reported that the study DHB policy recommended use of the communication tool SBARR (Situation, Background, Assessment, Recommendation, Response) to organise communication at handover of care. Several participants discussed use of SBARR to give structure to communications between LMC midwives and obstetricians and reported improved content and clarity of communication: *Using that SBARR tool is very good so that information that I share with them is concise, objective, and very clear* (MW6).

### Use of intermediaries

A significant study finding was that communication between LMC midwives and obstetricians often passed through an intermediary, usually a core midwife. No literature was found directly pertaining to intermediaries in communication chains in healthcare. Two common intermediary roles were identified:

1. Assistant Charge Midwifery Managers (ACMMs), the shift coordinators of delivery suite: LMCs phoned the ACMM rather than an obstetric doctor when admission to the maternity unit was contemplated.
2. Core midwives: In the WAU, or sometimes in secondary care clinic, core midwives phoned LMC midwives to report on ongoing management plans.

Participants acknowledged both roles were important to ensure appropriate information transfer between obstetrician and LMC. Both LMC and obstetric participants reported they were usually satisfied with ACMMs acting as intermediaries. LMC participants saw this arrangement as an improvement on past practice when an obstetric registrar was the first point of call but was often unavailable:

*I do really like the fact that now... we have that one contact with the delivery suite coordinator... for many years it was very difficult to talk to a registrar... it used to be that... you'd spend a lot of time trying to find people. (MW4)*

There was less satisfaction with communications relayed from obstetricians in WAU or secondary care clinic to LMCs. Participants reported that, in WAU, no written communication was sent to LMC midwives after consultation. Instead, core midwives usually phoned or texted to inform LMC midwives of outcomes of obstetric consultation, providing information such as timing of induction of labour, secondary care follow-up plan or to request follow-up by the LMC. LMCs reported receiving incomplete information, and dissatisfaction that they were not involved in decisions:

*The three-way process when a decision's been made about how to birth the woman is poor... the LMC's usually left out of that three-way conversation. She's usually informed of the outcome of the two-way conversation... [by] someone who wasn't even involved in the two-way conversation! (MW4)*

Some obstetric participants were also aware of barriers to successfully achieving a three-way process:

*The three-way process is not always optimally facilitated, especially if a woman comes to clinic without a midwife and the clinic is overbooked and you give your recommendation and then the clinic [core] midwives are having that conversation with the [LMC] midwife. (OB1)*

Lack of adequate three-way communication could lead to breakdowns in communication. MW6 noted that addressing breakdowns in communication was not straightforward:

*... when I ring, to chase up... it's very difficult, to get someone to talk to... sometimes it can take an hour... it's about me being persistent. (MW6)*

Communication could improve if there were designated pathways for LMCs to address breakdowns in communication and resolve conflict.

MW6 reported a scenario when communication from a core midwife intermediary worked well:

*I've had one three-way conversation this year. I had the antenatal [core] midwife ring me to ask did I agree with the date that a woman was going to be booked for an induction. And that would be one of the first times I've ever had a three-way and that was when she was there with the woman as well. (MW6)*

Because she was able to negotiate with the core midwife, the LMC perceived this to be a three-way conversation despite absence of the doctor who had recommended induction of labour.

## Technological solutions to improving communication

Written communication was usually effective if it was timely. However, both participant groups reported that referral letters to secondary care clinics were sent by fax and replies were sent by post. These dated communication modalities impeded communication, as faxed letters commonly went astray, and post could mean delays of up to several weeks.

Increasing numbers of LMCs had remotely accessible electronic record-keeping systems, but these could not interface with the current DHB system, which needed an upgrade for shared electronic records to be contemplated. Two new

DHB initiatives were discussed by midwife participants: text communication by core midwives to communicate decisions for women seen by the obstetric team acutely in WAU; and proposed provision of tablets to all LMC midwives allowing secure access to some DHB records. Introduction of computer tablets for LMCs was regarded positively by LMCs: *we're still using fax machines which is so archaic... with the new tablets coming, I still haven't got mine but... I'm really excited about being able to just get lab results (MW8)*. Tablets would address security for the DHB computer network, improve LMC access to letters, scans and laboratory results, and raise the possibility of more extensive record sharing. Participants advocated for use of secure email to improve speed and reliability of interprofessional communication.

## DISCUSSION

Participants from both professional groups reported usually positive interprofessional relationships. This finding echoed that of Skinner and Foureur (2010), who found usually positive relationships between LMCs and obstetricians nationwide, suggesting that similarly positive relationships might be found in other New Zealand DHBs. Positive relationships set the stage for good interprofessional communication and were promoted when obstetricians and LMC midwives were known to each other. Participants identified proposals to improve familiarity with each other and these could be readily implemented with minimal cost. For example, vignettes and photos of new LMCs, obstetricians and other staff could be provided by new practitioners and included in already established electronic newsletters.

Other ways participants identified of getting to know each other were shared interprofessional education and meetings (such as at the perinatal mortality meetings and the collaborative production of guidelines and protocols). This reflects the findings of other studies which identified that sharing of education and policy decision making contributed to positive interprofessional relationships (Chang Pecci et al., 2012; Meffe et al., 2012; Murray-Davis et al., 2014; Ratti et al., 2014). One participant recognised that sharing more existing education with members of both professions and the development of new shared educational opportunities would support further collegiality.

Communication could be further improved in acute situations by the provision of large badges identifying the name and role of the practitioners, and the promotion and use of the communication tool SBARR.

Effective three-way communication was critical in clarifying responsibilities of core and LMC midwives and obstetricians at transfer of care to resolve blurring of boundaries and maintain safety for mothers and babies. When three-way communication occurred effectively, study findings indicated usually satisfactory outcomes for midwives and obstetricians, and promotion of woman-centred care. This identified a need to promote three-way communication.

Chang Pecci et al. (2012) argue that systems and processes to resolve communication conflict are equally important. The current research identifies that at times there were difficulties with communication. One way to resolve this issue was having phone conversations to debate decisions relating to care and negotiate the ongoing care plan. The identification of the core midwife as an intermediary is an important finding of this study. These midwives were able to provide a pathway of communication between obstetricians and LMC midwives and have an important role in improving information transfer.

Such intermediaries are most effective if they are empowered to negotiate with the LMC midwife on key management decisions, facilitating an indirect three-way process. The establishment of clear feedback pathways for LMC midwives is recommended to support improved clarity and manage instances where women are unhappy with outcomes of obstetric consultations, or when referrals are lost.

Another way to improve communication is the ability to share information through the use of IT, including email communication and shared electronic records, to facilitate timely sharing of written information. Maternity hospitals should review their IT systems to maximise safe interprofessional communication.

## STRENGTHS AND LIMITATIONS

The focus of this study was the relationship between obstetricians and midwives. A study strength is the ability to contrast and compare the views of two participant groups holding differing philosophical standpoints, seeking means to promote positive interprofessional communication between these two groups. The study does not examine women's perspectives of the primary/secondary interface interactions between midwives and obstetricians, although the critical importance of always maintaining the woman's involvement in decisions about her own care is underlined. Further study examining women's perspectives would complete a triangle of understanding of three-way communication, elucidate to what extent the two professions are providing a service satisfactory to women and explore what women's visions for improvement might be.

The research occurred within one maternity hospital in one region. DHBs vary in size, staffing levels, culture, policies and procedures and therefore care must be taken not to generalise our findings. The research findings align sufficiently with those found in other studies to suggest that there are common components to supporting optimal relationships and good communication which may have relevance to other Aotearoa NZ maternity hospitals and overseas maternity care providers.

## CONCLUSION

The point where pregnancy and birthing diverge from normal is a vulnerable time for women and babies. Effective communication between LMC midwives and obstetricians at the primary/secondary interface has previously been identified as vital to maintaining safe, satisfactory maternity experiences. This research sought understanding of what is working well in situations requiring collaboration between LMCs and obstetricians, and to propose actions to promote optimal communication. The emergent themes are the need to negotiate philosophical difference, to clarify blurred boundaries, and the vital role of three-way communication between women, LMC midwives and obstetricians in the facilitation of collaboration between the two professions.

Study findings indicate that the ideal of positive interprofessional relationships between LMCs and obstetricians can coexist despite philosophical difference. Effective three-way communication usually resolves philosophical difference and blurred boundaries, facilitating provision of safe, woman-centred care.

Participants have useful suggestions to improve communication between midwives and obstetricians and to overcome barriers to effective three-way communication. A framework of AI is applied using participants' ideas to generate proposals to promote collaboration between the two professions, many of which could be implemented at low cost. To optimise the safety of mothers

and babies and facilitate positive collaboration between LMC midwives and obstetric doctors, three-way communication, as identified in the Guidelines (Ministry of Health, 2012), needs to become a universal part of maternal healthcare, in reality, every time there is consultation, transfer of care or shared care.

## CONFLICT OF INTEREST DISCLOSURE

The authors declare that there are no conflicts of interest.

### Key points

- Effective interprofessional communication supports the understanding and negotiation of midwives' and obstetricians' respective roles, boundaries and philosophical differences.
- Effective three-way communication between midwife, obstetrician and woman is crucial for safe, satisfactory outcomes for women and babies.
- Communication processes must be robust, user friendly and consistently used with up-to-date data-sharing systems and clear resolution pathways.

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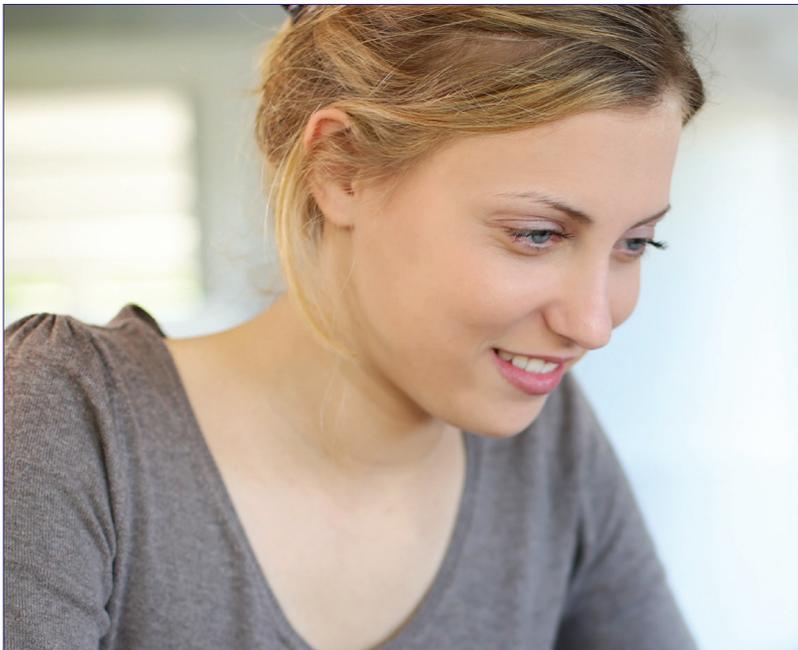


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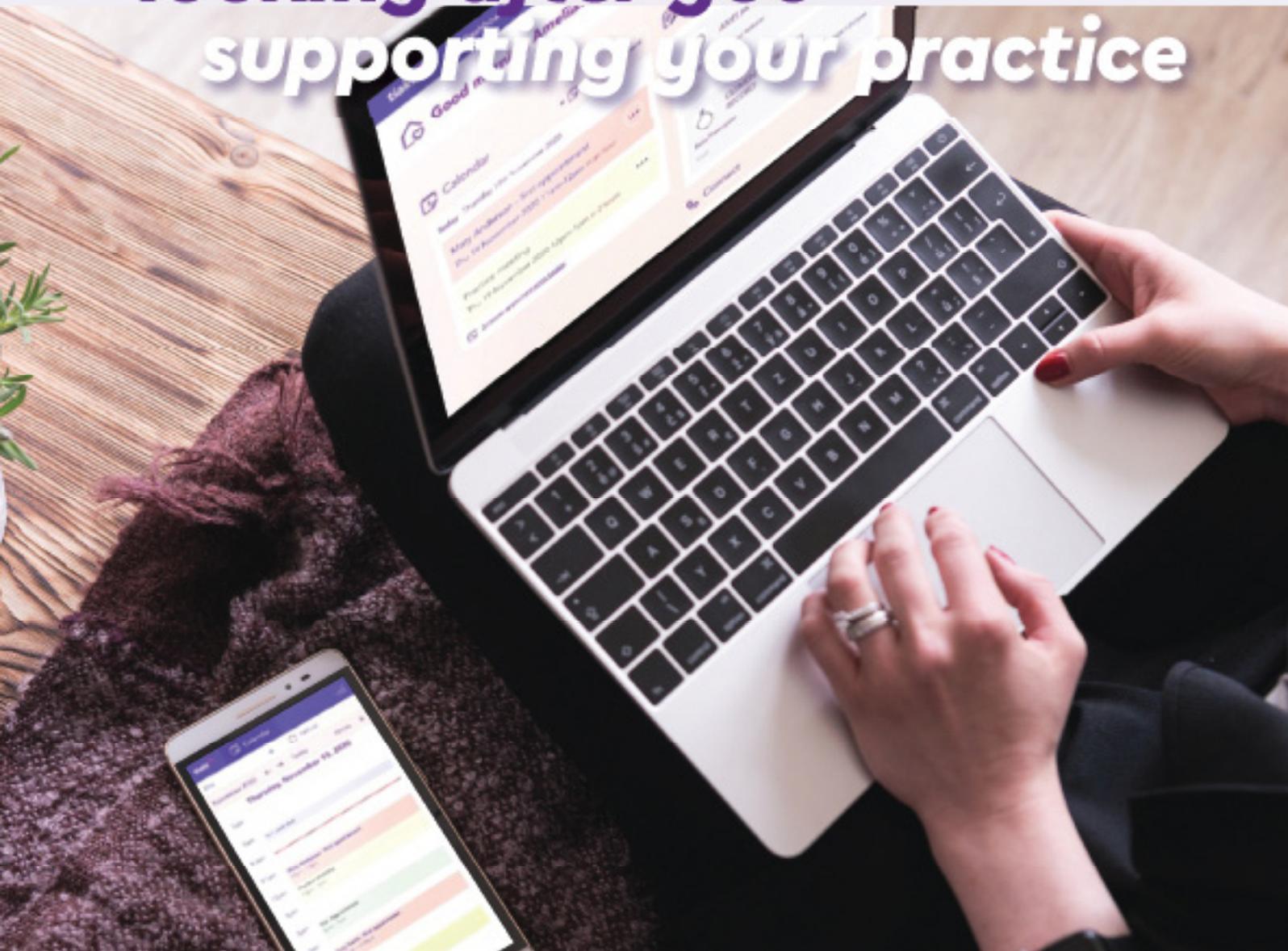
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*There will be a further opportunity to apply for Semester two grants in September 2022. Applications prioritised on a first come first served basis. Apply online at [www.midwife.org.nz](http://www.midwife.org.nz).*

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