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

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A thesis submitted in fulfilment of the degree
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Declaration Concerning Thesis Presented for the Degree of Master of Midwifery

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Abstract

Ultrasound scans are an increasingly normalised part of pregnancy in Aotearoa New Zealand. In the third trimester, fetal measurements and weight estimations are undertaken at all scans, regardless of clinical indication. Even though these size predictions can be inaccurate, they heavily influence clinical decision-making. As a result, people with a scan prediction of a large baby may be more likely to have unnecessary interventions that do not improve outcomes, irrespective of the baby’s actual birthweight.

My study aimed to explore the implications of an ultrasound prediction of a large baby on birthing people’s perceptions and experiences of their pregnancies and births, including their birth choices and relationships with caregivers. The study was underpinned by feminist poststructural theory, which is interested in the exposure of apparently fixed truths as socially and politically situated, and the creation of possibility for different ways of knowing and being through the deconstruction of those fixed truths. This focus was consonant with the objectives of my work: to expose the current apparent truths and practices about large babies and birth as the products of dominant medical discourse, and then set about disturbing them and creating space for a midwifery and women-centred narrative of fetal growth.

In conducting the study, I carried out semi-structured interviews with people who had experienced a large baby prediction in pregnancy. I then analysed the data using reflexive thematic analysis. My analysis identified three overarching themes. The first described the two dominant medicalising discourses that prioritised surveillance and risk-centric care, and problematised large babies. The second identified the oppressive effects that engagement with these discourses had, including women experiencing fear, guilt, and a loss of control as they were directed on high intervention care pathways. The third explored the ways that women attempted to resist the oppressive effects of dominant discourse by privileging women’s ways of knowing, trusting their bodies to grow and birth normally, and seeking to gain control of decision-making about their
experience. My findings demonstrated the negative impact that a large baby prediction had on women’s experiences and care pathways and identified opportunities for those women to challenge the problematisation of predicted large babies. The importance of a supportive midwifery relationship to these resistances was clear. The role of midwives in partnering with women to challenge medical meanings and practices related to large babies is affirmed as a key finding in this research.
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Ehara taku toa i te toa takitahi, engari he toa takitini.
Success is not the work of one, but the work of many.

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# Table of Contents

Declaration Concerning Thesis Presented for the Degree of Master of Midwifery ........ ii  
Abstract ........................................................................................................................................ iii  
Acknowledgements ............................................................................................................................... v  
Table of Contents ................................................................................................................................. vii  
List of Figures ........................................................................................................................................ xi  

1  Introduction and Background ........................................................................................................... 1  
   1.1  Introduction ........................................................................................................................................ 1  
   1.2  Background to the Research ............................................................................................................ 2  
      1.2.1  The Aotearoa NZ Maternity Context ....................................................................................... 2  
      1.2.2  Technocracy and Ultrasound in Maternity Care ........................................................................ 4  
   1.3  Researcher Perspective ..................................................................................................................... 5  
   1.4  Purpose and Overview of the Study ................................................................................................. 6  
      1.4.1  A Note on Gendered Language .................................................................................................... 8  
   1.5  Chapter Summary ............................................................................................................................. 8  
   1.6  Thesis Overview ............................................................................................................................... 9  

2  Literature Review ................................................................................................................................ 10  
   2.1  Introduction ........................................................................................................................................ 11  
      2.1.1  Rationale for Literature Review .................................................................................................. 12  
   2.2  Method .............................................................................................................................................. 15  
   2.3  Findings ............................................................................................................................................. 15  
      2.3.1  Assessing Babies for Largeness in Pregnancy ............................................................................ 16  
      2.3.2  Estimating Fetal Weight: Complexities ..................................................................................... 17  
      2.3.3  Clinical Outcomes ..................................................................................................................... 18  
      2.3.4  Women’s Experiences and Informed Decision-making ............................................................ 20
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4</td>
<td>Discussion</td>
<td>23</td>
</tr>
<tr>
<td>2.5</td>
<td>Conclusion</td>
<td>26</td>
</tr>
<tr>
<td>3</td>
<td>Methodology</td>
<td>27</td>
</tr>
<tr>
<td>3.1</td>
<td>Introduction</td>
<td>27</td>
</tr>
<tr>
<td>3.2</td>
<td>Feminist Poststructural Theoretical Underpinnings</td>
<td>27</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Subjectification</td>
<td>28</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Discourse and Power</td>
<td>30</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Resistance and Transformation</td>
<td>31</td>
</tr>
<tr>
<td>3.3</td>
<td>Study Methods</td>
<td>32</td>
</tr>
<tr>
<td>3.3.1</td>
<td>The Participants</td>
<td>32</td>
</tr>
<tr>
<td>3.3.2</td>
<td>Ethical and Cultural Considerations</td>
<td>33</td>
</tr>
<tr>
<td>3.3.3</td>
<td>Recruitment</td>
<td>36</td>
</tr>
<tr>
<td>3.3.4</td>
<td>Data Collection</td>
<td>37</td>
</tr>
<tr>
<td>3.3.5</td>
<td>Data Analysis: Reflexive Thematic Analysis</td>
<td>39</td>
</tr>
<tr>
<td>3.4</td>
<td>Chapter Summary</td>
<td>41</td>
</tr>
<tr>
<td>4</td>
<td>Findings</td>
<td>42</td>
</tr>
<tr>
<td>4.1</td>
<td>Introduction</td>
<td>42</td>
</tr>
<tr>
<td>4.2</td>
<td>Theme One: A Big Problem</td>
<td>42</td>
</tr>
<tr>
<td>4.2.1</td>
<td>“Keeping a close eye”</td>
<td>43</td>
</tr>
<tr>
<td>4.2.2</td>
<td>“My baby would be too fat and probably need medical intervention”</td>
<td>46</td>
</tr>
<tr>
<td>4.3</td>
<td>Theme Two: Thinking Small, Limiting Possibility</td>
<td>49</td>
</tr>
<tr>
<td>4.3.1</td>
<td>“I felt my level of control slipping”</td>
<td>49</td>
</tr>
<tr>
<td>4.3.2</td>
<td>“They took the joy out of my pregnancy”</td>
<td>53</td>
</tr>
<tr>
<td>4.4</td>
<td>Theme Three: Thinking Big, Creating Possibility</td>
<td>56</td>
</tr>
<tr>
<td>4.4.1</td>
<td>“Take it with a grain of salt”</td>
<td>56</td>
</tr>
</tbody>
</table>
List of Figures

Figure 1: Ethnic Groups of Participants................................................................. 107
Figure 2: Parity of Participants at Time of Interview .............................................. 107
Figure 3: Type of Pregnancy Care Experienced by Participants ............................. 108
Figure 4: Mode of Birth/s Experienced by Participants ......................................... 108
Figure 5: Age of Participants at Time of Interview .............................................. 109
Figure 6: Gender of Participants .......................................................................... 109
Figure 7: Partnered Status of Participants at Time of Interview ............................ 110
Figure 8: Home Region of Participants at Time of Interview ............................... 110
1 Introduction and Background

1.1 Introduction

Pregnancy ultrasound is deeply embedded in Aotearoa New Zealand (NZ) maternity care. 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, 2015). 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 outcomes. Once a large baby has been predicted by scan, pregnant people and their caregivers are forced into the ontological dilemma of whether a large baby is a normal variation of a healthy pregnancy, especially in the absence of any confounding pathological reason for largeness such as diabetes. Alternatively, it represents a move away from normality, warranting medical surveillance and management of risk. This research is not setting out to address whether large babies indeed constitute a pregnancy risk, but rather to understand how dominant medical knowledges that problematise large babies affect women’s experiences and care pathways.

Whether the estimation of a baby’s size is the direct purpose of a scan, or an incidental finding, there is no doubt that the finding of a large baby on ultrasound has significant and often negative implications for the childbirth journey (Blackwell et al., 2009; Jarvie, 2016; Peleg et al., 2015; Reid et al., 2014; Sadeh-Mestechkin et al., 2008). As both a midwife and a pregnant woman I have had first-hand experience of these detrimental implications. Over thirteen years ago, as I carried my own predicted large baby, I walked a tightrope of trepidation and confidence. Juggling contradictory information provided by midwife, sonographer, and obstetrician, I wrestled with frustration, confusion, and fearfulness. Later, as a midwife working with women with a prediction of a large baby, I sought to reassure, encourage, and empower even as they came up against the powerfully risk-centric approach to childbirth that is characteristic of much of contemporary pregnancy care. Regardless, I often still felt that their experiences were
somehow derailed by receiving this information. The endless negative messages from obstetricians, other midwives, and their personal networks seemed to direct them down an ever-narrowing path of care bounded by risks and dangers to their baby during pregnancy and birth. The work of trying to instil birthing confidence often felt like a losing battle. Discussions with my practice partner and other midwives gave me a sense that I was not alone in my frustrations. I wondered at the entrenchment of fear that seemed to surround big babies, from both health professionals and pregnant people themselves. And so this project was born, out of a desire to understand how the prediction of a large baby altered people’s pregnancy and birth experiences, and to support a more positive approach for those families.

1.2 Background to the Research

1.2.1 The Aotearoa NZ Maternity Context

Pregnant people in Aotearoa NZ are cared for by a Lead Maternity Carer (LMC) during their pregnancy, birth, and postnatal period. In 2017, 94.2% of women had a midwife as their registered LMC, while the remainder were registered with a general practitioner or private obstetrician (Ministry of Health [MOH], 2019b). LMC midwives are based in the community, providing antenatal care and postnatal care in homes and in clinic settings, as well as supporting people to birth at home, in primary birthing units, or in hospital. The relationship with the LMC midwife is founded on the model of midwifery partnership, which focuses on shared responsibilities and decision-making and the unique nature of each individual pairing (Guilliland & Pairman, 2010). Continuity of care is also a hallmark of this model of midwifery care and supports the pregnant person to build their confidence and trust in their midwife, which in turn supports informed choice. Midwives bring to this partnership a philosophy grounded in the belief in birth as a normal life event. This philosophy argues that normal birth provides the greatest physical and emotional health benefits for most parents and babies and that most women wish to give birth normally (New Zealand College of Midwives [NZCOM], 2009). It also affirms that normality is not a narrow obstetrically defined parameter, but holistic in considering social, familial, historical, physical, and emotional context (Downe, 2006).
Midwives are also employed as core midwives to work in birthing units and hospital maternity facilities. In this context, they may work across many areas such as antenatal and postnatal wards, birthing suites, and as part of acute services. Employed midwives also work in teams that provide LMC care for women who are unable, for whatever reason, to access LMC midwifery care in their community. All midwives are autonomous practitioners, having regained autonomy through the 1990 Nurses Amendment Act (Guilliland & Tracy, 2019). Midwives work across their scope of practice of antenatal, birth, and postnatal care, and are obligated to offer referral to people in their care to specialist services for a range of conditions/circumstances (e.g. obstetric, paediatric) (MOH, 2012; NZCOM, 2015).

Informed choice is an important, legally protected principle of all Aotearoa NZ healthcare, including maternity care. There are several legislative protections for health consumers that safeguard the freedom to choose or refuse health care. The Health and Disability Services Code of Consumer Rights enshrines the right to full information and the right to make an informed choice in law (Health and Disability Commission, 2020). Consumers also have the right to refuse medical treatment under section 11 of the Human Rights Act (1993). In the provision of midwifery care, midwives adhere to their Code of Ethics which requires midwives to uphold women’s rights to free, informed choice and consent throughout the childbirth experience (NZCOM, 2015).

The Aotearoa NZ midwifery system has been held up internationally as a superior model of care (Frank Film, 2021). There remain however, aspects of this system that challenge midwives’ ability to offer care that supports a philosophy of normal birth. Midwives in Aotearoa move seamlessly between home, community, and hospital contexts. While this supports partnership with families, it also means that midwives are immersed in highly medicalised environments. Continuity of care and partnership across these multiple contexts requires time, effort, and resilience. Midwives report feeling unsupported and undervalued, and facing challenges such as increasing medical and social complexity of caseload, ongoing failure to achieve pay equity, and the additional physical and psychological burden of practicing healthcare in the context of a global
pandemic (Bealing, 2020; Crowther et al., 2021; NZCOM, 2020). There are increasing numbers of both LMC and core midwives leaving the profession. There are many women in the community unable to find LMC midwifery care and public concerns have been raised about staffing safety within facilities (Corlett, 2021; Gooch, 2021). These workforce challenges can be viewed against the backdrop of increasingly medicalised and high intervention care (e.g. Davis-Floyd, 2018; MOH, 2019b).

1.2.2 Technocracy and Ultrasound in Maternity Care

In Aotearoa NZ and around the world, birth interventions are rising unnecessarily (MOH, 2019b; World Health Organization, 2015). This rise in interventions can be seen through the lens of the growing dominance of a technocratic, biomedical view of childbirth and women’s bodies (Davis-Floyd, 2018). Pregnancy and birth are no longer seen as a natural state in a woman’s life, but as a mechanical, impersonal process that is the domain of experts and requires intensive technological monitoring (Lupton, 2012; Pendleton, 2019). The medical model of childbirth promises to predict and minimise potential risk but, in the process, introduces interventions that themselves carry risks and potential iatrogenic effects as well as increasing women’s anxiety and reducing their social, psychological, and emotional wellbeing (Downe et al., 2019). The language of risk 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 technological investigations in order to probe dysfunction and abnormality (Chadwick & Foster, 2014). These technologies are coupled to the traditionally male dominated fields of science and industry, and are complicit in constructing women as inferior, fearful, passive, and submissive (Frost & Haas, 2017).

Pregnancy ultrasound has become an essential element of this technological investigation. The last half century has seen a rapid development in its use from a once accidental, and then experimental, technology to an omnipresent essential element of many people’s pregnancies. Pregnancy ultrasound was pioneered in the late 1950s by Dr Ian Donald, a Glaswegian obstetrician-gynaecologist, and staff nurse Marjorie Marr
Donald happened upon the first pregnancy ultrasound while trying to determine the cause of a woman’s uterine enlargement (Mitchell, 2001). Marr then went on to use ultrasound before ward rounds to determine fetal presentation where women’s abdomens were difficult to palpate (Roberts, 2012). Over the following two decades, pregnancy ultrasound experimentation accelerated and expanded to assessing fetal skull size in relation to the maternal pelvis, dating pregnancies, diagnosing multiples, and identifying fetal anomaly (Roberts, 2012). Fetal measurements and the development of standardised growth charts also emerged as areas of clinical interest. Despite no clinical trials ever being completed, pregnancy ultrasound quickly became established as a routine pregnancy technology and like other such surveillance technologies, became seen as crucial (Roberts, 2012).

Ultrasound is now omnipresent in Aotearoa NZ maternity care. There is no international consensus on the most appropriate timing and number of scans in pregnancy (Roberts, 2012). The MOH co-funds two routine ultrasound scans in all pregnancies (MOH, 2019b); 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; NZCOM, 2019). Midwives have observed patterns of increased scanning for bigger babies (Morris, 2020), which is taking place despite clinical guidance that scans should not be routinely offered to check if a baby is bigger than normal for its gestational age (NZCOM, 2018). This reflects a noted societal shift from viewing large babies as healthy and ‘bonny’ to problematic and pathological (Jarvie, 2016) and I further elaborate on this in Chapters 2 and 5.

1.3 Researcher Perspective

This topic was chosen due to both a personal and professional interest. I began this process with some inherent beliefs about the topic shaped by my midwifery epistemology and personal experiences. These include the beliefs that women’s bodies are built for labour, that they can birth large babies safely, and that fear of labour undermines this process. These assumptions are not under examination, but rather I am
interested in how big babies are constituted as problematic and the effect of this on women’s experiences and care pathways.

As a midwife, I have worked alongside women who have had ultrasound predictions of large babies. They have gone on to have a wide range of pregnancy and birth experiences, both negative and positive. My own lived experience is of growing and positively birthing three babies of 4250g, 5520g, and 4280g. In my second pregnancy, I underwent multiple pregnancy scans and attended several obstetric visits due to the predicted size of my baby. I declined several obstetric recommendations, including induction at 38 weeks and a pre-emptive epidural in case of emergency. Negotiating my way through this and advocating for my ability to make decisions about my pregnancy was incredibly challenging. I was exceptionally well supported in this by my midwife who believed in me and in my right to self-determination. I have been deeply affected by the experiences of that pregnancy and birth. I consider giving birth normally to my 5520g baby to be one of my great life achievements.

Through both my personal and professional encounters I have observed the impact that cultural and clinical beliefs about fetal size can have on birth experiences and outcomes. My engagement with this topic is also shaped by my experiences as a cisgender, heterosexual, married, Pākehā woman and mother, who is a practising midwife with a tertiary education. I acknowledge that these experiences shape my views and my research.

1.4 Purpose and Overview of the Study

The aim of this study was to explore the implications of an ultrasound prediction of a large baby from 28 weeks of pregnancy on birthing people’s perceptions and experiences of their pregnancy and birth, including their birth choices and relationships with caregivers. The objectives of the study were threefold. The first was to understand how women are affected by ultrasound prediction of large babies, and how this prediction impacts on their experience of pregnancy and birth including their birth choices and relationship with caregivers. The second was to identify the role midwives
may play in supporting women to resist the medicalising discourses and practices associated with a predicted large baby. The third was to contribute to midwifery epistemology and practice through demonstrating the value of critical feminist research on fetal size to the women-centred space that midwives practice in. My research question is “How does ultrasound prediction of a large baby from 28 weeks of pregnancy impact on people’s experiences of their pregnancies and births?” There is no Aotearoa NZ literature that explores these experiences in the context of our maternity system, with characteristics such as LMC midwifery, midwifery partnership, and continuity of care. In Chapter 2, I discuss some limited literature considering the experiences of women who had a confirmed large baby at birth, primarily mediated through a positivist, medical lens, however there is no international literature that considers the experience of the group defined by the prediction of a large baby. This gap leaves an opportunity for a critical Aotearoa NZ based study considering the experiences of people who had experienced an ultrasound prediction of a large baby, regardless of actual birthweight.

My research uses a feminist poststructuralist theoretical approach. Feminist poststructuralism considers how knowledge is constituted, and the power and political relations implicated in what becomes accepted as true (Davies et al., 2006). When purported fixed truths are rather seen to be socially and politically situated, this makes room for the deconstruction of those truths and allows space for alternative ways of knowing and being (Davies et al., 2006). This approach provides an opportunity to consider the dominant discourses that problematise and medicalise large babies, the oppressive subjectivities that pregnant people take up in response to those discourses when a large baby is predicted, and then consider the glimpses of resistance that counter these discourses in women’s stories of their pregnancies and births.

Data for this research was collected through a purposive sample from the population of ‘people in Aotearoa NZ who had an ultrasound prediction of a large baby from 28 weeks of pregnancy’. Participants were recruited through social media and a sample of those who responded were invited to take part in a semi-structured interview. The data was analysed using reflexive thematic analysis as developed by Braun and Clarke.
This approach works to identify patterns of meaning in qualitative data and is characterised by an emphasis on researcher subjectivity which is well suited to a poststructural theoretical approach. My analysis was undertaken with particular attention to the poststructural concepts of discourse and subjectivity and resulted in findings organised into three themes. Following my presentation of the findings, their significance is discussed along with recommendations for midwifery practice and future research.

1.4.1 A Note on Gendered Language

Throughout this thesis, I will use a range of terms such as woman, wahine, or pregnant person and do so explicitly inconsistently. I do so to acknowledge that not all people who are pregnant and give birth identify as women and to recognise gender-diverse pregnant people as consumers of maternity care. Reproductive experience does not equate to bodily anatomy (Ross & Solinger, 2017) and transgender or non-binary gendered people may experience the prediction of a large baby in pregnancy. I also wish to express and confront the gendered oppression experienced by cis-gendered women in their reproductive experiences. Where participants identified as women, I refer to them as such.

1.5 Chapter Summary

This introductory chapter has set forth key background information, researcher perspective, and a brief introduction to the purpose and design of the study. The context of maternity and midwifery care in Aotearoa NZ is presented followed by an introduction to the increasingly technocratic nature of maternity care, the development of ultrasound use in pregnancy, and the problematisation of large babies. The purpose of the study is to understand the implications of an ultrasound prediction of a large baby for pregnant people’s experiences, and to trouble the dominant construct of the problematic large baby. The feminist poststructuralist underpinnings of this study support this purpose. Reflexive thematic analysis, a theory-neutral analytical method, was undertaken with a particular attention to subjectivity and discourse. Following this summary, an overview of the structure and content of this study can be found.
1.6 Thesis Overview

Chapter One introduces the study, outlines the background, research aims, objectives, and questions, and gives a brief overview of the study design.

Chapter Two comprises an article that was published in 2021 with a review of the literature relating to ultrasound prediction of large babies. It reviews literature relating to methods of fetal growth estimation, complexities of ultrasound size prediction, clinical outcomes associated with large babies, and women’s experiences of having a large baby. There is an unavoidable element of repetition in some of the introductory and concluding aspects of the article given that it was a standalone publication.

Chapter Three outlines the theoretical underpinnings of the work as a feminist poststructuralist study, and the design of the study in relation to recruitment, data collection, and data analysis.

Chapter Four presents the findings of the study as three themes that trace the subjectification of pregnant people through dominant medical discourse about large babies, the oppressive effects of this subjectification, and then explores the opportunities for disrupting those discourses through resistance.

Chapter Five furnishes a discussion of the findings, contemplates the strengths and limitations of the study, and in conclusion offers recommendations for practice and future research.
2 Literature Review

This chapter provides a review of the literature relevant to the ultrasound prediction of a large baby in pregnancy and how parents experience this. Specifically, it considers literature in several related areas: methods of fetal size estimation, (in)accuracies of ultrasound in prediction of birthweight, clinical outcomes associated with macrosomia, and parents’ experiences of the prediction of a large baby in pregnancy.

The literature review takes the form of an article published in May 2021 in the NZCOM Journal (Baddington & Parker, 2021). The article is reproduced with the permission of the publisher (see Appendix A). Given that this article was a standalone publication, there is by necessity an element of duplication with other parts of the thesis, particularly in Chapter 1. Publication of this review while my thesis was in progress was motivated by a commitment to a real-time translation of research into knowledge and to achieve a step towards one of my research objectives: to contribute to midwifery epistemology as a critical researcher through the lens of women-centred care. The thesis with publications model also provides opportunity for a nascent researcher to hone the skills of a modern academic; writing concise and impactful research articles and navigating through a peer review process (Massey University of New Zealand, 2015). I was fortunate enough that Otago Polytechnic was prepared to consider this, and I was granted permission to proceed with this approach for my literature review (see Appendix B). The development of this article was supported and guided by my primary supervisor Dr George Parker, who has thus been recognised as co-author.

2.1 Introduction

Ultrasound is now omnipresent in Aotearoa NZ maternity care. The MOH co-funds two routine ultrasound scans in all pregnancies (MOH, 2019b); 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; NZCOM, 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, 2015). 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.

2.1.1 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 (NZCOM, 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 (NZCOM, 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 (NZCOM, 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, rendering a normal event pathological and arguably disempowering 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 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 (NZCOM, 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 NZCOM. As part of the Choose Wisely initiative, NZCOM (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 (NZCOM, 2021). Nationally, district health boards are requiring customised growth charts to be used for all pregnant women (Auckland District Health Board, 2015), and NZCOM has suggested a preference for recording fundal height on a customised growth chart (NZCOM, 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, 2019b). 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, 2015). 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 disembody 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.

2.2 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.

2.3 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.

### 2.3.1 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, 2019a). 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 (NZCOM, 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.

2.3.2 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).

2.3.3 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 centring 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,
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).

2.3.4 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 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.

2.4 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 at 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.

2.5 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.
3 Methodology

3.1 Introduction

“If we knew what we were doing, it wouldn’t be called research, would it?”

As I have undertaken my first formal research project, I have often had the sense of working on an extremely complicated quilt. There are many small pieces, and the goal is to fit them all together to create something cohesive and purposeful. At times it feels like a pile of scraps with no harmony and no sense; other times requires a fair bit of backtracking, unpicking, and redoing. As the last stitch is put into place, the hope is that someone outside the project can look and see not just the individual steps of the project but the overall meaningful whole. This chapter lays out those individual steps, the pattern if you will, for the theory and design of the project. The chapter begins with the feminist poststructural theoretical underpinnings of the study, and then goes on to outline the methods I have used for recruitment, data collection, and data analysis.

3.2 Feminist Poststructural Theoretical Underpinnings

This research was born from my observations and frustrations, as both a midwife and a mother, that the prediction of a large baby changed the experience of pregnant people for the worse and with little overall improvement in clinical outcomes. In Chapter 2, I reviewed the literature on the clinical implications and limitations of ultrasound prediction of a large baby with regard to accuracy and improvement of outcomes. My study sought to fill the research gap around the experiences of pregnant people in these circumstances. I wanted to understand how medicalised discourses about large babies are negotiated and taken up, and the effects of this on pregnant people’s experiences and care pathways. As I began, I felt my research interests were strongly aligned with feminism. The various waves of feminism have involved different ontological and

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1 This quote is widely attributed to Einstein in popular media but there is no evidence that he in fact said or wrote this and the origins of this remain shadowed.
epistemological assumptions. As my project evolved it became clear that it was suited, more specifically, to a feminist poststructural approach.

Feminist poststructuralism is interested in how knowledge is constituted, and the power and political relations implicated in what becomes accepted as true (Davies et al., 2006). Feminist poststructuralism does not offer one feminist truth but propounds an approach that envisages the deconstruction of truths and practices that lock gendered individuals into fixed and oppressive subject positions (Davies et al., 2006; Letherby, 2003). This deconstruction creates possibility for different ways of knowing and being (Davies et al., 2006). This focus was consonant with the objectives of my work: to expose the current medical truths and practices about large babies and women’s bodies as the products of dominant medical discourse, how they are negotiated and taken up by pregnant people and the effects of this, and then set about disturbing them and creating space for a midwifery and women-centred discourse of fetal growth.

Many feminist poststructural analyses have been influenced by the work of French philosopher Michel Foucault. While Foucauldian theory is in itself not feminist, Weedon (1997) argued that it was possible to distinguish between the affiliations of the theorist and the usefulness of a theory. Feminist theorists have successfully made use of Foucault’s theories of subjectification, discourse, and power to analyse patriarchal and other oppressive power relations and support an agenda for change. Midwifery scholars have demonstrated the usefulness of a poststructural approach in relation to the feminist profession of midwifery (e.g. Davis & Walker, 2010; Parker, 2019; Surtees, 2008).

### 3.2.1 Subjectification

A poststructuralist epistemology understands knowledge as historically and contextually situated truths that are a product of power relations (Foucault & Gordon, 1980). Feminist poststructuralism seeks to trouble and disrupt what is represented as inarguable truth about women’s lives and embodiment, and allows for complexity and contradiction (Gavey, 2010). These ‘truths’ are instead seen as produced by discourses which in turn individuals take up in the constitution of subjectivity (Gannon & Davies, 2015). These
feminist poststructuralist underpinnings provided me with an ideal theoretical platform to set about answering my research question. In considering the implications of a large baby prediction, I wanted to trouble the idea that scan knowledge was wholly objective and consider the different subject positions that pregnant people might take up as they navigated this experience. Feminist poststructuralist scholars have also taken up the challenge of intersectionality. Letherby (2003) highlights that women are not a homogenous group, and that differences in ethnicity, culture, class, sexual identity, age, are as important to consider as aspects of similarity. In a poststructural analysis, this means considering the ways in which discourse effects and subjectification might differently impact birthing people in view of those differences (Signal et al., 2008). The scope of my project did not permit a thorough analysis through an intersectional lens. However, the poststructural emphasis on diversity of experience and plurality of meaning allows for some consideration of the differences between women (Stewart, 2004), in particular centring pregnant people in their own particular identity and context, including intersecting layers of ethnicity, socio-economic group, gender and sexual identity.

The pregnant poststructural subject is constituted through discourse (Gannon & Davies, 2015). The individual’s sense of themselves and their relationship to the world directs them in taking up certain subject positions in relation to their pregnancy and birth, as parents-to-be, and in their caregiver relationship. Subjectivity is not innate, but socially produced; created by discursive practice in the economic, social, and political arenas and in a constant state of struggle and friction (Weedon, 1997). Whereas the liberal humanist subject is conceived of as rational, unified, and choosing its own course independently, the poststructural subject is understood as precarious and fluid, their subjecthood is in a constant state of reconstitution (Davies et al., 2006; Gannon & Davies, 2015). This possibility of multiple and conflicting subjectivities permitted me to explore the complexity of the pregnant subject in making sense of a large baby prediction. In accepting the existence of these multiple subjectivities, this creates space for new subjectivities. In the context of my study, I was able to explore the multiple subjectivities that positioned the potential large baby both negatively and positively, and explore the power relations that directed which discursive positionings become
dominant. This is not, however, a simple matter of challenge to existing subject positions, but requires an understanding of Foucault’s ideas on discourse and power, including the omnipresence of discourse in all experiences and the impact of this on the exercise of the subject’s agency (Gannon & Davies, 2015; Gavey, 2010).

### 3.2.2 Discourse and Power

I set about this project with a particular interest in discourses relating to the medicalisation and problematisation of pregnancy and the possible existence of resistances to these. Weedon (1997) describes Foucauldian discourses as ways of constituting knowledge that shape the nature of the body and mind of the subjects that they govern. Stewart (2004) further expands that discourse constructs our fundamental understanding of the body and what is constructed as normal and not normal. Discourse is effective only through the actions of individuals who take up the forms of subjectivity which it proposes, and act upon it (Weedon, 1997).

Foucault described discursive fields which encompass competing or conflicting ways of ascribing meaning. However, within these discursive fields, not all discourses are credited with equal standing or power (Lafrance & McKenzie-Mohr, 2014). Dominant medical discourses have a strong institutional basis, and childbirth practices can be held in place by those discourses and the authoritative knowledge thus constituted (Gavey, 2010). Certain discourses will justify the status quo, but others may challenge existing knowledge and practice. The most powerful discourses can be hard to shift, and resistance through counter-discourse may be marginalised as irrelevant by the hegemonic system, as can be seen with the dominance of medical discourse and suppression of a midwifery discourse of normal birth (Lafrance & McKenzie-Mohr, 2014). Despite this, meanings constituted through discourse are always open to challenge (Weedon, 1997). This allows for opportunities of different ways of being and the imagining of a fairer and more ethical world (Davies et al., 2006; Gavey, 2010). In my study, where the pregnant subject was able to scrutinise the oppressive discourses that problematised their predicted large babies, they were able to disrupt the processes through which they were constituted (Davies, 2006).
3.2.3 Resistance and Transformation

Resistance may take such forms as disrupting discourses, refusing to take up inferred subject positions, and producing counter stories or counter-discourses (Lafrance & McKenzie-Mohr, 2014). The process of resistance and the construction of new subjectivities is not a straightforward and clean-cut process though. Gannon and Davies (2015) describe new subjectivities as constructed “through a series of small escapes, slides, plays, crossings, flights that open understanding, rather than simple acts of opposition and resistance” (p. 313). By its nature, the deconstructive acts of resistance are partial and messy; challenging and fraught (Davies et al., 2006; Lafrance & McKenzie-Mohr, 2014). In approaching this research as a feminist poststructural project, I was not expecting to find absolute and uncompromising resistance to the power of dominant discourse. I looked for cracks of resistance that may show through in even the smallest way. This is because the pregnant subject is simultaneously undergoing the effects of dominant medicalising discourses as they are also deconstructing them (Davies et al., 2006). The incomplete and fraught nature of resistance should not deter a poststructuralist from the imaginings of a better world. Foucault argued that bringing silent thoughts to light would make it difficult to continue on with existing habits, and feminism itself demands an ongoing agenda for change once knowledge/power relations are acknowledged (Davies et al., 2006; Weedon, 1997).

Transformation is a process of de- and reconstruction allowing for an expansion of boundaries, and creating alternative imaginings for the complexities of an individual’s life (Davies et al., 2006; Lafrance & McKenzie-Mohr, 2014). This possibility of alternative imaginings connected closely with the conception of my project which grew from a desire for a more empowered and confident experience for those pregnant with a predicted large baby. Lafrance and McKenzie-Mohr (2014) contend that transformation has the potential to not just alter an individual’s subjectification, but also collective understandings that can lead to greater social justice. This suggests that a connection can be made between the individual pregnant person’s experience and broader social change.
Thus, we come to understand Foucault’s poststructural proposition that we are at the same time less and more free than we think (Gavey, 2010). In pregnancy, the maternal subject is less free in that she is constrained by discursive regimes and social practices around pregnancy and birth that shape her possible ways of being in the world, and more free in that those discourses do not need to be overdetermining and are open to challenge and resistance (Gavey, 2010). A poststructural transformative project such as mine faces the dual challenges of finding ways to see and understand current subject positions constituted out of dominant medical discourses about large babies in pregnancy, and in doing so develop strategies for imagining alternative subjectivities (Davies et al., 2006). I came to this project with my own thoughts and theories regarding large babies in pregnancy which I can now acknowledge were formed in a very black and white framework. Using a feminist poststructuralist approach has allowed me to explore the contradictions and paradoxes that I found in the data, undergoing my own process of de- and reconstruction.

3.3 Study Methods

In this section, I outline the methods used in answering the research question “How does ultrasound prediction of a large baby from 28 weeks of pregnancy impact on people’s experiences of their pregnancies and births?” This includes exploring what the theoretical underpinnings described above meant for how I undertook the research and made sense of the findings. I have begun with the participants whose voices are woven throughout - who they are and how they were selected. I then outline ethical and cultural considerations, and the methods and processes of recruitment, data collection, and data analysis.

3.3.1 The Participants

The study population was ‘people in Aotearoa NZ who have had an ultrasound prediction of a large baby from 28 weeks of pregnancy’. Inclusion criteria specified that the participants:

- Could converse in English;
- Were 18 years or over;
• Had a baby in Aotearoa NZ in the preceding three years; and
• Had a third trimester ultrasound estimating a large baby (> 90th percentile on customised growth chart OR EFW > 4500g at term). This inclusion is based on the ultrasound EFW not actual birthweight, as an important aspect of the study was to include people whose babies were not large at birth.

The purposive sample excluded people that I had provided midwifery care to, to avoid questions of coercion.

I collected a range of demographic information from the participants via a short online form that was emailed to them. This was not an attempt to stray into the quantitative paradigm, but an effort to better understand the participants within their different contexts. The following information is displayed in graph form in Figures 1 to 8 in Appendix C: ethnic group, parity, type of pregnancy care, mode of birth, age, gender, partnered status, and home region. The participants were geographically spread, all self-identified as female gender, and largely were partnered. The participants’ ages were spread across the twenties and thirties. The sample consisted of those identifying as NZ European (12), NZ Māori (3), Cook Island Māori (1), Other European (2), and Asian (1). Participants were able to select more than one ethnicity. Women primarily received LMC midwifery care in their pregnancies and were both multiparous (4) and primiparous (12). Women experienced a range of different modes of birth, with some participants referencing more than one pregnancy: normal vaginal birth (12), instrumental birth (3), emergency caesarean (3) and elective caesarean (3). Many of the participants experienced an ultrasound prediction that overestimated their baby’s birthweight, however there were also those who experienced either an accurate or underestimated ultrasound fetal weight prediction.

3.3.2 Ethical and Cultural Considerations

Ethical approval for the study was sought and given by the Otago Polytechnic Midwifery Research Ethics Committee in 2020 (#007, Appendix D). To obtain this approval, the following considerations were discussed.
3.3.2.1 **Vulnerability**

To reduce the possibility of participant vulnerability, inclusion/exclusion criteria ruled out the participation of parents below the age of 18 from the sample because of the potential vulnerabilities associated with younger ages and childbearing. I excluded people that I had provided midwifery care to reduce the likelihood of dependence or coercion.

To offset vulnerability due to distress relating to poor outcomes or negative feelings about their pregnancy and birth experiences, I prepared information for participants on available support (for example, NZCOM Resolutions Committee, Little Shadow/Perinatal Anxiety and Depression Aotearoa [PADA], text counselling service). Participants were informed prior to their interviews that they could have support people present and stop the interview at any point. Although some participants expressed distress about their experiences, they all declined support information when offered and indicated that they already had support available.

3.3.2.2 **Socio-cultural considerations**

In designing and undertaking this research, I considered possible benefits to wāhine Māori who might experience a large baby prediction. Given that Māori are more likely to be labelled obese, and that obesity is considered a risk factor for growing a large baby (Dai et al., 2018; MOH, 2019b; Ratima & Crengle, 2013), wāhine Māori may find themselves more likely to receive a large baby prediction in pregnancy. The resulting likely changes to care pathways and increased medicalisation may therefore have a disproportionate effect on Māori, remembering that wāhine Māori more frequently choose a primary context for birth (15.9% of wāhine Māori birth in primary units compared to 8.5% of non-Māori women) (MOH, 2019b; Ratima & Crengle, 2013). I sought to incorporate the principles of Te Tiriti o Waitangi in this project: partnership, participation and protection (Hudson et al., n.d.). Te Ara Tika (Hudson et al., n.d.) provided a Kaupapa Māori framework for ethical research as follows:

- Whakapapa. I involved the Otago Polytechnic Kaitohutohu Office early in research planning and received their support of my proposal (Appendix E).
• Tika. As discussed already, this study is relevant to wāhine Māori who were able to self-select as research participants. The results may be of interest and/or benefit to wāhine Māori as the prediction of large babies in pregnancy occurs across cultural groups and has implications for conversations about risk in pregnancy, and choices of clinical pathway.

• Manaakitanga. I treated participants with dignity and respect, respect for privacy and confidentiality, and gave them information about support outside of the project. Koha of a supermarket voucher was offered.

• Mana. I undertook an open, transparent process of consultation, honestly discussing any risks as part of my consent process, and minimising harm to participants as discussed.

3.3.2.3 Use of personal information

To respect the participants’ autonomy and voice (Braun & Clarke, 2013; DeVault & Gross, 2012), I gave them the choice of using a pseudonym selected by them or their own first name. During transcription, I removed all other personal names used and the names of any facilities or locations discussed, replacing them with generic descriptors. During the consent process, I informed participants that I would discuss my de-identified data with my supervisors and may also have legal obligations to disclose if information was provided about risk of serious harm to an individual. There were no such incidents of concern. De-identified data was stored on a personal password protected laptop, and files were also individually password protected. Any printed material was stored in a locked personal filing cabinet. Data will be retained securely for seven years, after which it will be destroyed.

3.3.2.4 Participant koha

I offered participants a $30 supermarket voucher as a koha. This small recognition of their time given was to be gifted to participants whether they felt able to complete the entire interview process or not.

3.3.2.5 Potential for harm
Possible harms identified include psychological distress through discussing traumatic events, or through having one’s worldview of events challenged by critical inquiry. Exploring personal experience can evoke strong emotional responses, and it is unpredictable as to whether this be therapeutic or traumatic (Manning, 2004). I attempted to mitigate this by offering information on sources of additional support. I was also explicit about what my research was about and my own agenda for change to reduce the likelihood that the participants would feel misled or have their expectations disappointed. Many of the participants also articulated that they too had an agenda for change.

3.3.3 Recruitment

Recruitment commenced in early June 2020, two weeks after Aotearoa NZ came out of an eight-week period of Covid-19 lockdown. I anticipated that families may be suffering from the dual pressures of pandemic anxiety and lockdown fatigue. I was unsure if there would be an appetite for research participation. My primary supervisor counselled patience and fortitude if recruitment was slow.

I began recruitment activities by posting my recruitment poster (Appendix F) on Kiwi Midwifery, a closed Facebook forum with over 2000 members. Within an hour, the information had been shared online many times over and I had my first potential participant. The insistent ping of my inbox put paid to my plan of a quiet day. Within a few hours, over 30 people had made contact. My own responses are captured in messages to my husband “Am feeling in disbelief and slightly crazed” and to my primary supervisor “I keep laughing hysterically. Firing off emails as quickly as I can.” By the end of the day, I had received over 100 enquiries by email and phone. Within a week, over 200. Midwives responded enthusiastically, “This is so needed” (S. Ballard, personal communication, 3 June 2020), “What a valuable project” (S. Armour, personal communication, 3 June 2020), and one who shared on a parents’ page commented “Wow I have had so many comments it’s crazy” (K. Goldsmith, personal communication, 3 June 2020). More than anything, it was a heartening indication that parents had something to say on this matter.
3.3.4 Data Collection

Proposed data collection was via semi-structured interviews. At the beginning of the project, I had viewed in person interviewing as gold standard and had envisaged that most interviews would be conducted locally in people’s homes. Given the broad sharing of my recruitment poster and the reshaping of our social world by Covid-19, my interviews were all conducted online. I offered in-person interviews to local participants and both preferred to have an online interview.

Online interviews were conducted via Zoom, a commonly used free video conferencing software. Zoom had become widely used during lockdown and early on some security concerns had been raised after reports of people ‘Zoombombing’ (“Who Is Listening to Your Zoom Call? Concerns Grow over App’s Security,” 2020). I followed recommended best practice steps to ensure the interviews were secure (Zoom Video Communications, 2020). This included activating a waiting room to grant entry to meeting participants, using randomly generated meeting IDs, and requiring a unique meeting passcode. I did not use the cloud recording function of Zoom rather audio recorded onto a voice recording app, transferring recordings directly to my secure personal laptop and password protecting them.

I had to utilise technology creatively to complete the consent process and gather demographic information in a streamlined way. Many of the participants did not have printers and used their devices to electronically sign the consent forms and return them to me. The Contract and Commercial Law Act (2017) allows for electronic signatures, ensuring that they are as reliable as is appropriate. The consent documents were returned directly to my secure student email from the email of the participant, limiting the likelihood of tampering with the consent process. I also used an online form to collect demographic information. All the participants completed this before their interviews.

I chose semi-structured interviews in order to focus on my research aims, and still allow freedom to explore and elaborate (Kelly, 2010; Whitehead & Whitehead, 2016). I used an interview guide (Appendix I) developed during the proposal stage, although this did
not rigidly define the interviewing process. I was aware of the ethical challenges that interviewing can pose in feminist research. The relationship between interviewer and participant can be characterised by a power imbalance (Kelly, 2010). However semi-structured interviews have been frequently used for feminist research and can allow for collaborative construction of knowledge with research participants (DeVault & Gross, 2012; Weatherall et al., 2002). As a feminist poststructural researcher, I sought to be reflexive, transparent about my research aims and agenda for change, at times reciprocated elements of personal disclosure, and explicitly acknowledged a degree of control (Braun & Clarke, 2013; DeVault & Gross, 2012; Kelly, 2010; Oakley, 1993; Weatherall et al., 2002). I did this by ongoingly examining my own beliefs, judgements, and practices about the topic during the research process and reciprocating the sharing of women’s stories with an element of sharing my own experience of having been a pregnant woman with a predicted large baby.

I have reflected on the advantages and disadvantages of online interviewing. It was admittedly not as intimate as face-to-face interviewing, but as our world has been reshaped by Covid-19, so too have our social interactions. The participants all appeared to be very comfortable with this form of communication. They were safe in their own context and able to opt out at any time they wanted as easily as with the click of a button. Support people were able to be present in a very fluid way that created an inclusive dynamic. Babies, children, partners, and other family members were present during the interviews and came and went as suited. It also allowed participants a form of privacy, in that they only needed to invite me into as much of their surroundings as they chose; there was no hosting onus on them to make their home visitor ready. As researchers we do not ask this. However, through my midwifery practice, I am aware that families still feel social pressure to present a tidy environment to outside visitors. I note that this form of interviewing (and indeed my sole recruitment act of sharing information online) resulted in a group of participants that were representative only of those who have access to technology such as devices and internet connection. From my own perspective, the online nature of the interviewing allowed me to balance a whirlwind data collection stage with the demands of family and a new job. I completed
16 interviews in 20 days. This was intense and tiring, leaving me lying awake at night unpicking the stories, but it was also exhilarating and efficient.

3.3.5 Data Analysis: Reflexive Thematic Analysis

I undertook data analysis using reflexive thematic analysis, an approach to analysis developed by Braun and Clarke (2014) that looks to identify patterns of meaning in qualitative data. The theoretical underpinnings of this type of analysis are to be decided by the researcher (Braun & Clarke, 2020), and so offered the flexibility to undertake a thematic analysis informed by feminist poststructural underpinnings and with particular attention to Foucauldian ideas of discourse. This allowed my analysis to respect the participants’ experience as true to them, but also emphasise that those experiences are located within a social, political, and historical context and are mediated by power dynamics and dominant discourses (Braun & Clarke, 2013). It requires researchers to acknowledge their own perspective, which aligned well with a feminist poststructural position that researchers are not and should not be separate from their data (Braun & Clarke, 2020; Gannon & Davies, 2015).

Themes are identified across the data in relation to the research question, by following these six phases as detailed by Braun and Clarke (2013, 2020):

2. Coding across entire dataset, identifying implicit meaning relating to the research question and theoretical approach.
3. Generating initial themes.
4. Reviewing themes, producing a map of the provisional themes, subthemes, and thematic relationships.
5. Defining and naming themes.
6. Writing up the final analysis.

Following data collection, I transcribed the interviews myself. As interviewing took place over such a condensed period, transcription allowed me the leisure to familiarise myself with the data and start to notice features which would later become embryonic
themes. I transcribed using free software Express Scribe and used an orthographic style with a focus on transcribing spoken words (Braun & Clarke, 2013). I also cleaned up the data by removing hesitation and repetition of words. All participants were offered the option to receive a copy of their transcript for member checking and their own records. 10 of the 16 participants chose to receive a copy of their transcript and one requested a small correction which I made.

During the process of transcription, and with subsequent re-readings, I recorded my observations and undertook complete coding across the dataset. This involved identifying all elements of the data with relevance to answering the research question, and labelling those elements with codes (brief phrases or words that distil the essence of that element) (Braun & Clarke, 2013). The feminist poststructuralist underpinnings required that my coding go beyond the explicit meaning of the participants’ accounts and consider implicit meanings relating to subjectivity, discourse, and power. This meant that in my coding and further analytical steps, I was particularly concerned with looking beyond the surface of what was said by the participants and making connections between language and how this produced different constructions and effects (Braun & Clarke, 2013).

I then went through a detailed iterative process of rereading the data, reflecting, and discussing with my primary supervisor, keeping in mind the research objectives. My analysis focused on identifying different subjectivities and the discourses that shaped these, as I sought to see the ways that women both took up and troubled the status quo. I undertook an iterative process of steps 3-6, generating candidate themes, revising these, writing up analyses, revisiting the themes, and so on, settling on a three themed story. I traced the subject positions constituted through dominant discourse which constructed large babies as problematic, the oppressive effects of this subjectivity on pregnant people, and the rumblings of resistance found in the women’s stories.


3.4 Chapter Summary

This chapter has laid out the theoretical underpinnings and methods that I used in undertaking this study. I have explored key feminist poststructuralist concepts of subjectification, discourse, power, and resistance and how they align with the goals of my research: to expose the current medical truths and practices about large babies and women’s bodies as the products of discourse and then set about disturbing them, and to create space for a midwifery and women-centred ontology and epistemology of fetal growth. The methods for recruitment, data collection, and data analysis have been outlined. Data collection was through semi-structured online interviews with a purposive sample of 16 participants. I used thematic analysis with a feminist poststructural lens with attention to discourse to generate findings of three main themes with several sub themes. I present the findings of my analysis in the next chapter.
4 Findings

4.1 Introduction

My study set out to answer the question “How does ultrasound prediction of a large baby from 28 weeks of pregnancy impact on people’s experiences of their pregnancies and births?” with a particular interest in care pathways, birth choices, and relationships with caregivers. The research did not set out to address whether large babies in utero constitute a risk. Rather, I wanted to understand how medicalised discourses about large babies were negotiated and taken up by pregnant people, and the effects of this on their experiences and care pathways. My literature review in Chapter 2 identified a research gap in this area. My chosen theoretical positioning of feminist poststructuralism has supported these goals with its interest in how knowledge is constituted, and the ability to envisage the deconstruction of truths and practices that lock gendered individuals into fixed and oppressive subject positions (Davies et al., 2006; Letherby, 2003).

This chapter outlines my findings as three overarching themes and their related sub-themes. My first theme identifies the operation of a dominant medicalising discourse in pregnancy and childbirth care that privileges surveillance and risk over normality and that specifically problematises large babies as a medical problem of pregnancy. My second theme describes how pregnant women navigate and take up this dominant discourse in ways that constitute a problematised subjectivity as pregnant people and results in harmful impacts on their pregnancy experiences and care pathways. My third theme acknowledges that dominant discourse is never total and identifies the ways in which participants resisted the limiting and oppressive effects of the dominant discourse related to large babies and attempted to create the possibility of a more positive and empowered pregnancy experience.

4.2 Theme One: A Big Problem

Theme One identifies dominant medicalising discourses that situate scan knowledge as authoritative and large babies as problematic. This is implicated in problematising
ultrasound predicted large babies and privileges a medical ontology of surveillance and risk over a midwifery ontology of partnership and normal birth. I explore this theme through two sub-themes, “Keeping a close eye” and “My baby would be too fat and probably need medical intervention”. Within these sub-themes I explore how dominant discourses grounded in the medicalised culture of pregnancy care are implicated in constructing the predicted large baby as both unhealthy and dangerous. Sub-theme one identifies that pregnancy surveillance norms mean that women are regularly having ultrasound scans for many reasons, which some of the time result in a prediction of a large baby. Women’s engagement with this surveillance was complex, both sought after and seen as the morally correct act of a good mother. Sub-theme two discusses the dominant discourse that shapes the predicted large baby as problematic and likely to be caused by pathology. Whether this was the case or not, a discourse of danger and risk permeated the women’s experiences of their childbearing journey.

4.2.1 “Keeping a close eye”

As explored in Chapters 1 and 2, ultrasound scanning has become very much the norm in contemporary Aotearoa NZ pregnancy care (Morris, 2020; NZCOM, 2019). This illustrates the well-documented growing dominance of a technocratic, medical view of birth and women’s bodies (Davis-Floyd, 2018). This discourse of medicalised pregnancy and childbirth has created a culture of surveillance and risk management of which ultrasound monitoring is a significant aspect (Balsamo, 2013; Stephens, 2004). This dynamic of contemporary maternity care was described by participants in this study as “keeping a close eye.” Participants in this study described the prominence of scans in their pregnancy care. Each woman underwent at least one scan that predicted that the baby was larger than normal. The reasons for having scans in pregnancy were many and varied. These included assessing placental position or cord insertion, fetal anomaly (kidneys, unusual head shape), presence of maternal antibodies, concern regarding maternal infection, history of gestational diabetes, history of stillbirth, possible breech presentation, and lower than expected fundal height measurement. Concerns about excessive growth, identified for example through increased fundal height measurement, were the clinical reason for an ultrasound scan for only a minority of study participants.
Importantly, largeness was therefore most commonly not the primary indicator for having a scan but rather an incidental finding during a scan for another reason.

One of the participants, Morgan, described how the large baby prediction arose from scans to monitor placental position:

_I had a low-lying placenta on one of the earlier scans, so I was having more frequent scans later in the pregnancy just as a precaution ... that’s when they started to find that they thought the baby was quite big ... measuring at 98th percentile._

A minority of the participants were referred for a scan based on a clinical assessment that the baby was large through increased fundal height measurement, such as Jeanette who explained, “My fundal height was on the 90th or 100th centile. ... So [the midwife] suggested that I did a growth scan.” Other participants were referred for a scan because their fundal height measurement was smaller than expected. Mama described her unexpected scan result, “[The midwife] actually sent me to get a scan because my tummy was measuring smaller, so they were worried that baby wasn’t growing. And then when the scan came back it said that he was in that [>90th] percentile.” Assessing the baby’s largeness was, for most participants, not the indication for an ultrasound scan. Nevertheless fetal measurements were taken as a default even in the absence of clinical growth concerns.

The participants themselves engaged with pregnancy scans in a number of conflicting ways, both taking up and resisting the dominant discourse of ultrasound scans as a necessary part of pregnancy care. As discussed in Chapter 2, this has previously been observed by feminist and constructivist scholars troubling reductionist notions that women are simply passive participants in medicalised care (e.g. Lupton, 2012; Mitchell, 2001; Roberts, 2012; Stephens, 2004; Taylor, 2008). It was clear that the information produced by ultrasound scans is a form of authoritative knowledge about pregnancy that was reassuring for some participants. Mags described the comfort that scans offered her after fertility challenges: “We had a few scans quite early on just to confirm that everything was looking good.” Anneleise reiterated this after her previous missed
miscarriage: “I had quite a few at the start cos basically it helped calm my nerves. I was just very stressed out that he was going to die.” Anneleise also saw value in the estimation of baby’s size by scan, “Obviously it was good to have those extra scans because, you know, if I didn’t, I may not have known how big he was getting.”

Regardless of how they felt about scans, participants engaged with scans as a mandated element of care rather than something they felt like they had a choice about. Coralie, for example, described, “I didn’t feel like I had a choice.” Participants described attending scans as a way of ensuring good health for their baby, and conversely, not doing so engendered feelings of guilt and blame. In this way scans operated as a way for participants to achieve the status of ‘good mother’ during their pregnancies by doing everything they could to ensure the wellbeing of their babies, even if there were no clinical indications of concern. This discursive framing of maternal responsibilisation meant that participating in pregnancy scanning was seen to be the proper choice for good motherhood, meaning that to decide not to be scanned, or to disregard the information offered up by scans was encoded with bad mothering. Mags was annoyed about the need for frequent scans which were costly and logistically difficult to organise around work. However, she still took up responsibility for attending the scans as the morally correct course of action as a good mother and narrated, “I know I could have not had the scans, but then I think I would have felt guilty for not having them. Especially if there had been something that wasn’t right.”

As discussed in Chapter 2 and already observed in feminist analyses of visual technologies during pregnancy, scans were seen by many of the participants as providing objective and authoritative knowledge, free from subjective interpretation (e.g. Mitchell, 2001). Scans were also understood as an accurate measure of fetal size pathologies, displacing and dismissing women’s own embodied knowledge about their pregnancies. It is this discursive framing of pregnancy ultrasound as authoritative, objective, and accurate that gives it particular power in shaping the course of women’s pregnancies and births, including the clinical care provided as a result of scan findings. Women were presented with scan data as if it was accurate and reliable in predicting babies’ weights, (despite strong evidence to the contrary, see Chapter 2). Casey
described how this was represented to her, “They were telling me ‘He’s gonna be a huge baby, he’s gonna be over 10 pounds the way that he’s growing’. ... They were saying 96th to 98th percentile. ... He didn’t end up being anywhere near that.” Kathy relayed what she was told, “... then [the obstetrician] told me that they looked at the scan and they think it’s a 13 pound baby” as compared to her baby’s actual birth weight… “and then the baby came out and [the midwife’s] like ‘yep, it is 8 pound 11’ or whatever in kgs. And she goes ‘and it’s perfectly healthy.’”

Consistent with literature reviewed in Chapter 2, clinical recommendations and decision-making in participants’ pregnancies appeared to be heavily reliant on scan knowledges, driving higher intervention approaches. Women themselves took up this idea of accuracy during their pregnancies and expressed surprise if the baby’s birth weight differed significantly from the prediction. Mama captured the feeling of being duped and the confusion of birthing a much smaller baby when she said, “I was like, what the heck? It was all wrong.” Yoonha was clear that she felt the objective way in which the scan EFW data was presented in her pregnancy was misleading and limited her possible pathways of care when she said, “I think the fact that it is an estimate is probably the main thing because I took that as a very accurate number. So that’s why I felt like I had no options.”

4.2.2 “My baby would be too fat and probably need medical intervention”

This sub theme describes the dominant medical discourse that situated big babies as pathological in their growth and dangerous to birth vaginally. In this sub-theme participants were shown to take up the notion that a large baby is a departure from a well healthy pregnancy with a discoverable cause, inevitably resulting in the need for further management and intervention. The prediction of fetal largeness represented a move away from normality and was equated with pathology, warranting medical surveillance and management of risk. Ari felt that, “My baby would be too fat and probably need medical intervention.” and Casey described how, “It’s almost made out to be a bad thing, that you’ve possibly got a big baby.”
The notion that a large baby is pathological was reinforced by the regime of diabetes testing and other forms of increased surveillance that women underwent following an ultrasound prediction of largeness. Rebecca related her story of repeated testing and the ongoing uncertainty around why her baby was predicted to be large:

*I had my gestational diabetes test done [at 26 weeks] and that came back absolutely fine. ... I had another one and that was absolutely fine, I was way under. ... All up I had four gestational diabetes tests and all of them were negative, so they couldn’t rule out what was going on.*

Participants struggled to decline these tests in the same way that they did scans, because to do so would implicate them as failing to ensure the wellbeing of their babies. Repeated testing often produced repeated negative results and confusion as to why a maternal cause of the baby’s predicted size was not revealed.

Regardless of whether a cause could be found to explain why a baby was growing large, the dominant discourse of pathology strongly connected a predicted large baby to poor outcomes including a dangerous vaginal birth. The conflation of large babies with dangerous birthing stretched beyond diabetic pregnancies to all pregnancies with a predicted large baby. The discourse of dangerous birth was pervasive; reinforced by health professionals, personal networks, and taken up by women themselves. As Jeanette described:

*I feel like based on his size, I didn’t have a lot of confidence in myself, and I don’t feel like the staff I had around me had a lot of confidence either [in the birth process]. It was just sort of “hmm this isn’t looking good.”*

In several cases, obstetricians counselled against even attempting to labour, positioning a poor outcome as a foregone conclusion. Jessica (who went on to have a normal birth) recounted “I went to see the obstetrician and the first thing she said to me was ‘oh well, looking at your size, I’d be telling you to have a caesarean anyway.’”

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2 Gestational diabetes mellitus is associated with an increased likelihood of macrosomia due to the insulin resistant state of the mother. Higher maternal blood glucose results in increased blood glucose passing through the placenta to the fetus. This extra glucose is stored as fetal body fat, which can result in macrosomia (KC et al., 2015).
The discursive framing of dangerous birth incorporated risks of vaginal birth to both mother and baby. A number of participants described a threat to their own wellbeing from birthing a large baby. Kered stated, “I got other comments [from friends and family] about how my vagina would be screwed forever.” Overwhelmingly though, participants framed the risk as being greatest to their babies. This is consistent with contemporary pregnancy care discourses that commonly focus on risks to the fetus to the exclusion of the pregnant body (Lupton, 2012). Health professionals played a key role in communicating risk and danger from vaginal birth which significantly contributed to women’s understandings of their pregnancies and births. Kathy, a well woman with a history of previous vaginal birth, provides her distressing recount of how the risk to her baby was framed:

*They also said to me that all through it that I am at risk of killing my baby. And they said that straight, they said “if you continue to carry on to push your baby, there’s the possibility that you could kill your baby.” ... When it came time for pushing and [the doctor] came in, and he said that him and his team are going to wait out in the hallway for me, ready to whisk me off for an emergency c-section because “you know your baby’s still large and we’re probably gonna have to break its collarbone to get it out of you.”*

Sarah narrated a similar experience:

*A doctor came in and they said, “you’ve got a big baby, you know, I would suggest having an elective c-section because ... if I did push him out and he got stuck in his shoulders it could cause brain damage.”*

This framing of dangerous birth constructed birth interventions such as induction of labour or planned caesarean as necessary; it was better to be safe than sorry, to do something rather than nothing – a common premise in risk-centric maternity care. As women took up this discursive framing and submitted to medicalised management of birth, they were seen to be acting as good mothers and securing the wellbeing of their babies.
4.3 Theme Two: Thinking Small, Limiting Possibility

In Theme Two, I consider the oppressive effects on women as they took up the meanings of ultrasound and medical knowledges about their large babies as pathological and risky. I explore the effects of this dominant discursive framing on the ways that women conceptualised their pregnancies, negotiated their maternity care, and understood themselves as mothers-to-be in relation to their predicted large babies. The two sub themes outline the ways in which the dominant discourse of large babies as pathological and risky, limited women’s possibilities for empowered and peaceful pregnancies. The sub themes are “I felt my level of control slipping” and “They took the joy out of my pregnancy”.

4.3.1 “I felt my level of control slipping”

The introduction of an ultrasound prediction of a large baby marked a reduction in autonomy for many participants. Participants described feeling passive in response to the authoritative knowledge produced by scans and the deployment of notions of risk and danger by their maternity carers. Participants described feeling as though they needed to acquiesce to medically sanctioned, high intervention care pathways. Anneleise captured this, “When I found out that he was going to be a big baby, I felt my level of control slipping.” This was echoed by Jeanette’s husband who related “[Jeanette] called me in tears, she had a plan in her head about what she wanted to do and how she wanted to do it, then as soon as she found out the weight of the baby ... she immediately knew what that meant.” Midwifery and feminist scholars have well traversed the ways in which women are told what to do, what is permitted (or not permitted), and are opposed as the decision-makers in their own maternity care (e.g. Chadwick & Foster, 2014; Oakley, 1993). Aotearoa NZ has entrenched legislative protection of informed choice and consent in health care (Health and Disability Commission, 2020), and yet I found that a prediction of a large baby limited women’s sense of agency over their own childbirth experiences. Ari described this, “I think the way obstetricians in particular talk to women as if we don’t have an option in regards to how our birth and pregnancy goes, was really problematic for me.” With the advent of a scan prediction of a large
baby, the participants described a ceding of control to their caregivers that mitigated what they perceived as risks to their babies.

Participants described ways in which they were strongly directed towards the ‘right’ option, usually a high intervention proposition such as planned caesarean or early induction of labour. Acquiescence to these directives were a way to demonstrate good mothering. If women wanted to consider the ‘wrong’ lower intervention option, such as declining an induction, they experienced attempts to strongly redirect them back to a medically sanctioned pathway. Kathy described the way she felt she was strongly directed towards a caesarean birth when her membranes ruptured but contractions had yet to commence:

[The obstetrician] said ... we are not allowed to go on the drip or be induced or anything, I have to show that my body is gonna do it itself .... or a c section.

Ari described the obstetrician’s punitive attitude of withdrawing care when she wanted to decline his proposed hospital induction of labour, instead opting to continue with her planned homebirth, “The obstetrician’s response to my declining of the induction was real interesting. He said, ‘oh well, if there’s complications, we don’t want to hear about it.’” There is evidence here of partial resistances (which are further discussed under Theme Three) however, these stories also demonstrate the oppressive effects of the dominant discourses that saw women’s options for birthing and lower intervention pathways restricted.

Timing of birth and proposed induction was referred to numerous times by participants as an area of decision-making in which women were particularly passive. The participants’ language suggested they perceived their choices to be limited or non-existent. They did not situate themselves as the decision-maker on when their pregnancy would end, even if the proposed course of action was against their desires. Mags, a healthy first-time mother, recounted:

Then when it got towards the end of the pregnancy, that’s when they started to say that they wouldn’t want to let me go over my due date [emphasis added] and would want to induce me on my due date which I wasn’t very keen on.
Mama, a well woman, gave another example:

[The obstetrician] actually said “you’ve still got a week, I’ll let you go to your week, but unfortunately, I can’t let you go past my due date” [emphasis added].”

... Normally you just go and even when you go past, it’s okay. But I literally had my due date to have my baby otherwise ... he was gonna have to get taken out of me, because he was perceived to be big.

Mama later experienced a spontaneous labour and birth as she very much desired, but more due to serendipity than choice. Mama laboured before her due date induction and was allowed into the primary birthing suite against protocol due to there being no other labouring people in the facility. Her happy circumstances just as easily could have involved an induction in the medical suite, a decision that was made for her based on her predicted overly large baby who in fact turned out to be 3180g.

Place of birth was also mentioned by several participants as a decision that was conceded. Anneleise recounted, “It must have been the 28 week [scan] where they said that they didn’t think I should have a primary birthing unit birth” and similarly Ari describes “the diabetes nurse said to me that I absolutely could not have a home birth because my baby would be too fat, and I might ... probably need medical intervention.”

Women also found their care prescribed concerning continuous fetal monitoring in labour, and choices heavily limited regarding use of water and mobility in labour.

Jeanette, a midwife herself, described the sense of disempowerment:

I would’ve liked to have laboured in the water. I didn’t even feel comfortable asking to go into the water. It was like I’m gonna be stirring the pot if I ask to do that, I just won’t, I’ll just stay here.

Women experienced this constraint of choice, not just by obstetricians, but also by midwives. An important finding in my research was the impact that a prediction of a large baby, and the effects of that prediction, had on the relationship between woman and midwife, undermining the trust and reciprocity that is implicit in midwifery partnership (Chadwick & Foster, 2014; Guilliland & Pairman, 2010). Participants
described a lack of support or a limiting of their options by the midwives working alongside them when they had anticipated allyship and advocacy in the face of medicalisation. Mama recounted her surprise that her midwife did not support her to await spontaneous labour or birth in the hospital primary birthing suite: “[The midwife] was like ‘oh we just gotta go with what [the doctors] say’. I thought maybe she would push for me to just do my thing, cos she was a Māori midwife as well.” Instead, after her appointment with the obstetrician recommending induction by 40 weeks, she was told by her midwife to comply with the directions of the obstetrician with no further discussion: “Then after that it was just ‘oh yeah, the doctor told you what’s gonna happen right?’ and then I was like ‘yeah’ and she was like ‘yeah okay.’” From some of the women’s perspectives, in the aftermath of an increased scan EFW, foundational concepts such as midwifery partnership, informed decision-making, and a commitment to normal birth (Guilliland & Pairman, 2010) were diminished or absent.

When women entered the institutional context, these oppressive effects became amplified. Women were routinely directed to high intervention care pathways and felt that they must cede their decision-making autonomy, here illustrated by Kered: “As soon as I got into hospital, everything changed, and I felt very pressured to do what they said.” There, participants described feeling depersonalised, dehumanised, and insignificant. The hospital system was more important than any one person, and decisions on care were prioritised on that basis. Anneleise related just how dehumanised she felt in this conveyor belt style of care:

I got the cattle class experience from [the] hospital. ... Honestly, I felt like I was an animal. ... I knew that once you get to a hospital they just want to intervene. Because it’s easier for them, for them to intervene. Because it gets the baby out. When I go into the hospital, into the birthing room, I am there to have a baby removed from my body. That’s really how I feel like they see it. How that happens, don’t care.

Casey echoed this sentiment “Again, hospital ... ‘we just want this baby out, we don’t really care how it happens.’” and related how the obstetricians never actually read her history and “They push for their agenda rather than your own.”
Thus, through their interactions with midwives, obstetricians, and the hospital institution, women felt that they had little choice as they were directed down high intervention care pathways and experienced severe limitation of their birth options. As women took up the discursive framing of authoritative scan knowledges, dangerous birth, and maternal responsibilisation in relation to large babies, this drove their acquiescence to this direction of care.

4.3.2 “They took the joy out of my pregnancy”

There was a distinct change in women’s emotional experience of their own pregnancies as a result of receiving a large baby prediction and the following exposure to medical surveillance and management. This study did not set out to undertake affective-discursive analysis per se. However, my analysis identified the work of emotion in relation to the discursive, and consideration of the role of emotion in pregnant people’s navigation of the dominant discourse of fetal largeness as important aspects. Women described their initial responses to finding out that their baby might be larger (and the medical sequelae of that prediction) with feelings of distress, fear, guilt, and dissonance; the unfettered joy of pregnancy was gone. For Ari, it was a change from pregnancy experienced as a beautiful life event to an all-consuming source of conflict and misery:

> I enjoyed [pregnancy] and I felt really beautiful and powerful in my skin. I’ve never felt that way at all in my lifetime. It was a beautiful journey for me and I was really grateful for, grateful to have a baby growing inside me ... And by the next scan, she was 95th percentile. ... This is my first baby and they’re telling me I have a fat baby. ... I was really scared and they took the joy out of my pregnancy. ... At that point I didn’t want to be pregnant anymore. I didn’t want to have this baby, it changed everything. It just ruled my life and I didn’t like it.

A key aspect of the participants’ emotional turmoil in response to the large baby prediction was trepidation about childbirth. Almost all women described an element of fear around birthing a big baby, indicating the power of a discourse of dangerous birth in shaping and undermining pregnant people’s subjectivities as confident birth givers.
Participants’ fears centred on being unable to birth the baby, the baby getting stuck, perineal trauma, or needing a caesarean. Emma related her fears, “[I was worried] that I would tear. And I’d be ripped from my vagina to my butthole, that I might not be able to actually push him out and I’d have to have a c-section.” Many of the participants shared feelings such as being, “really really scared”, and, “freaked out”, about the size of their baby and the implications for the birth. Jeanette voiced a very common concern when she said, “I was really scared that he was gonna get stuck.” As well as concern for themselves and their incapacity to give birth, women experienced fear regarding the safety of their baby during birth. Sarah worried about the consequences for her baby of proceeding with a vaginal birth, “[The doctor] said ... if I did push him out and he got stuck in his shoulders it could cause brain damage and things like that in him. That freaked me out.” The constitution of their pregnancies as risky and abnormal left the participants feeling afraid for themselves and for their babies and they were strongly motivated to do what they could to mitigate these risks including acquiescing to medical surveillance and management.

As women experienced distress and fear, they also wrestled with guilt; guilt for causing their baby’s largeness and guilt as failed mothers. Casey related in some detail how she felt that the hospital team treated her as if she couldn’t be trusted and her own sense of somehow failing:

They made you feel like you were doing something wrong. That you couldn’t be trusted almost. ... Of course it was that I was putting my child at risk basically of being this huge baby with potential issues because I wasn’t, well I thought I was managing it very well. ... They make you feel like you’ve almost failed a wee bit.

There is an emphasis in current maternity care and wider health politics on regulation of self and maternal responsibilisation (Parker, 2014). Women are held responsible for the outcomes of their pregnancies, including the size of their babies, disregarding broader contributing factors such as socio-economic circumstances, genetics, and ethnicity. Earlier in this chapter, I have discussed the ways that women sought to secure their baby’s wellbeing through the acts of a ‘good mother’, such as agreeing to increased surveillance through frequent ultrasound scanning or diabetes testing. These actions
were held to impact directly on their babies’ wellbeing, and so too was their ability to regulate their babies’ size through regulating their own bodies (for example through dietary intake). Sarah questioned herself for an inability to regulate her eating habits, “Am I eating too much, am I making him big? ... I thought it was what I was eating cos all I craved was McDonalds and chocolate milk and sugary things.” This dynamic of individual (maternal) responsibilisation was reinforced by women’s conversations with health professionals. This was particularly evident in the experiences of women of higher body mass index (BMI) or with gestational diabetes who more often described feeling that their health professionals blamed them and their lack of self-regulation for their babies’ largeness. It was clear from participants’ accounts that the ways in which they took up dominant discourse about their predicted large babies was oppressive in constituting them as failed mothers before they had even held their babies in their arms. Kathy described her response to this:

The [obstetrician's] comment “that your body has shown us that it can’t do it” I feel like that is more hurtful because I did do it and my body carried this baby for 9, 10 months and to hear that your body can’t do it is so upsetting. I feel like that impacts my womanhood, me as a mother, me as a woman, that I failed as a woman.

Lastly, the Māori participants also described distress as the problematisation of their large babies created dissonance with Te Ao Māori³. Mama reflected on the disconnect between her learnings from hapū wananga⁴ and her own disempowered experience.

[The facilitator] really empowered that vibe in me, that I would be okay, I’ll be able to do it, your body knows how to do everything it’s supposed to do. You will know when you need to have some help, but just don’t be pressured into alternatives. And I just really felt like that was what was happening.

³ Te Ao Māori – the Māori worldview.
⁴ Hapū wananga is antenatal education that encompass a Māori approach to pregnancy and parenting, including reclamation of traditional birthing practices.
Ari, a tertiary health educator, tearfully related the sense of personal tension and cognitive dissonance for her, when her increasingly medicalised experience conflicted with her cultural birthing references. She related, “I was talking [to medical students] specifically about birth and traditional birthing narratives within Te Ao Māori. And it was really tough to get through that without crying cos I believed in that stuff, but it wasn’t my reality.”

The participants were strongly motivated to secure the wellbeing of their babies both in pregnancy and in birth. This led to a range of negative emotional responses such as distress, fear, guilt, and dissonance. In seeking the best for their babies, the women took up the discourses of pathology and risk, held themselves accountable, and thus became vulnerable to being steered towards a more highly interventionist pregnancy and birth.

4.4 Theme Three: Thinking Big, Creating Possibility

While Themes One and Two provided a critical analysis of dominant discourses that create oppressive ways of being for those pregnant with a predicted large baby, in Theme Three I move towards an exploration of the strands of resistance described by the participants. This overarching theme weaves these resistances together to demonstrate that dominant discourses are not fixed and totally determining of possibility, allowing a less oppressive subjectivity. The three sub themes are, “Take it with a grain of salt”, “My body doesn’t make a baby I can’t birth”, and, “Taking my power back”.

4.4.1 “Take it with a grain of salt”

This sub theme explores participants’ resistances to the idea that scans are always productive of authoritative knowledge about wellbeing in pregnancy. “Don’t listen to [the scan EFW]”, participant Kered advised, “They’re just so inaccurate.” Many of the participants echoed this sentiment. Scans were described as inaccurate, not always right, an overshoot, and an estimate that is not always true. The participants largely still opted to undertake scans as part of routine or ‘normal’ pregnancy care, however they resisted the ‘truth’ of predicted fetal weights and asserted an alternative meaning that a scan EFW was just that, an estimate. Casey and Emma both reflected on their experiences of
scan weight estimation inaccuracy, weaving a narrative that constituted the scan prediction as an estimate or even exaggeration. Emma pondered, “Scans can say I guess that they’re bigger, but it’s not necessarily always true, if that makes sense. It is just an estimate of all of that.” Similarly, Casey recounted, “I take it with a grain of salt now because I don’t believe that they are very accurate at all. ... Until the baby’s here you can’t really give an accurate prediction anyway.”

While a technocratic view of ultrasound fetal weight estimation presents the findings as authoritative, a constructionist view allows for inclusion of other ways of knowing which support the creation of counter-discourse. Placing value on knowledge created in manifold ways (not just through technology), created opportunity for the participants to renegotiate their pregnancy pathways. Participants’ accounts privileged embodied knowledge, experiential knowledge, whānau knowledge, and midwifery knowledge in producing alternative ways of engaging with the information provide by scans (Belenkey et al., 1997; Davis, 1995).

Maternal estimation of fetal weight favours the pregnant person’s own self-knowledge and embodied knowledge of their growing baby. Jeanette reflected on her own sense of the baby’s size and her evaluation of scan EFW accuracy, “I knew that that scan was complete overshoot, it wasn’t even possible for that baby could have been 5.2kg. ... I’d actually guessed about 4kg, so I wasn’t surprised but yeah that scan was absolute complete overshoot.” Morgan also identified her own sense of her baby’s size as differing from the scan prediction (approximately 4500g), recounting that her midwife’s estimation accorded with this:

> I was pretty sure in my head that she was gonna be smaller than the scans predicted. My midwife was fairly positive about that as well just from feeling. And when I said to my husband a couple of days before she was born, I said “I bet when she’s born, she’s 8 pound 7 [3800g],” so I wasn’t far off really.

If participants had previous experience of birthing a baby significantly smaller than a scan prediction, this created freedom to challenge scan authority through experiential knowledge. Kathy described her thoughts during her second pregnancy, “I also had that
experience with my first one, they told me it’s gonna be big ... and she was small. So, in the back of my head, I knew from experience that the scans aren't always right.”

Participants also made space for whānau knowledges afforded by whakapapa. They drew on family histories of birth which eschewed the medicalised discourse of contemporary Western birth and embraced a custom of normal birth. Ari related her story of whānau birthing heritage:

Our history in my family, our birthing narrative is that we birth babies really well. So I was operating off that narrative, wanting that to be mine. Cos that’s all I’ve ever known. And so I was the only one in my family who can really talk about even needing to be in the hospital or having an obstetrician.

As well as favouring the credibility of embodied, experiential, and whānau knowledges, participants placed trust in midwifery knowledges that centre normal birth. This took place in the context of a continuity of care partnership, where midwives were a known and trusted source of information. Casey described the way that her midwife offered her an alternative view of the scan prediction, “My LMC [midwife] was fantastic. She said, ‘You know these things, they can’t give you an accurate reading anyway, it’s a scan.’” Ari shared a similar experience of reassurance:

My midwife said, “Don’t worry about it, take it with a grain of salt” because she did explain to me that many women are told their babies are big, but they birth and they’re not as big as what they thought their babies would be. It’s just an estimation.

Allowing for the scan findings to be constructed as variable in accuracy created the opportunity for women and midwives to negotiate flexible pathways of care. Jessica, who had a previous vaginal birth, followed by a planned caesarean for placenta praevia,

5 Whakapapa is essential to mātauranga Māori (Māori knowledge) and connects relationships in order that mythology, history, knowledge, custom, philosophy, and spirituality are preserved and handed down between generations (Taonui, 2015).
privileged her own knowledges about fetal size. She recounted the resultant insignificance of a scan EFW in planning a home birth.

*I was told that the baby was gonna be 93rd percentile which I just didn’t believe because of my last couple of pregnancies and [previous inaccurate predictions]. So then when this one, when I was told he was 93rd percentile, I was just like “I don’t believe it, I don’t think that he will be, I’m not worried, I’m not concerned, it’s fine.”*

4.4.2 “My body doesn’t make a baby I can’t birth”

Resistance is often messy and incomplete (Davies et al., 2006) and the participants still experienced the oppressive effects of the discourses that positioned them as passive and fearful. However, they also challenged the problematisation of their large babies and births with a counter-discourse of normality: normality of largeness, and normality of vaginal birth. Women endeavoured to trust in the process of growing and birthing their babies.

Participants challenged the construction of largeness as unhealthy and engaged with efforts to negotiate with the dominant discourse of problematic large babies. Several of the participants explicitly denied the way in which their babies were constructed as only numbers. Ari shared, “...in my mind, she was just as big as she was. ... It was always a fat baby to them. And it was my baby to me. It didn’t matter what size she was.” Similarly, Casey reflected, “As long as my baby’s healthy, I didn’t really care what size my baby’s gonna be.”

In constructing this counter-discourse of normality, many women relied on a narrative of genetic legacy. When asked what they thought caused babies to grow large, many of the participants replied, “Genetics.” Jessica, who birthed a 4270g baby explained, “I have lots of tall men in my family, so I guess that’s where he got it from.” Sarah, who birthed a 4620g baby, similarly related, “My husband’s not big but he’s very tall and my family as well, we’re sort of stocky built people. I thought well maybe that’s what it is.” Mags summed up her assumption that her baby would be big, as was common in her
family, “My partner and me were both big babies, we’re both really tall. Height runs in both our families and neither of us were really particularly concerned by the fact.”

Many of the participants also resisted the problematisation of largeness by creating counter-meanings of large as robustly healthy, drawing on historical and anthropological narratives. Jessica explained:

*I'm married to a biologist who studies mammals and is all for big strapping healthy babies cos that’s how they survive in the wild. So I guess that’s how I think too. I think big is good, I’d much rather be told in a scan that my baby was gonna be big than it was undersized.*

Big was equated to healthy by other participants, as has been the case historically where large babies were considered ‘bonny’ (Jarvie, 2016). Lauren reflected, “*My large baby has been so much more healthier than my smaller baby.*” Yoonha also adopted elements of a view of healthfulness when she said, “*I don’t have a problem with big babies. It shows that they’re healthy.*” This constructed a view of the large baby that focussed on the vision of a well-fed, robust, and healthful person with good reserves and strength.

Some of the women also recognised the discourses at play in fashioning birth as dangerous and questioned this construction with counter-discourse characterised by a commitment to and belief in normal birth. Almost unanimously, the participants expressed the view that vaginal birth was something they desired, over caesarean birth. Anneleise shared, “*I just knew that I would end up with a c-section, and I really... that’s the one thing I didn’t want.*” Yoonha shared, “*Vaginal delivery was a priority for me.*” This desire was shared across diverse experiences of parity, previous modes of birth, ethnicity, and actual birth weight. Jeanette captured this value when she related her resolve to birth her baby vaginally.

*I was really determined to have a normal birth and I’m so glad that I did just persevere. I could have just opted for a [caesarean] section from the start and that could’ve been it. But I did persevere, so I was proud of the fact that I did do it. Sort of ... prove a point to myself that you can do it, and a lot of women out there who do have big babies.*
A number of participants shared this feeling of pride at giving birth, recognising what many midwifery scholars have documented, that birth is an important rite of passage for birthing people (e.g. Downe et al., 2018; Reed et al., 2016). Lauren shared that the birth of her second [much larger] child, “was a hugely healing experience,” and Ari openly stated, “I needed this to be a [birthing] narrative that I could talk about proudly.” For some of the participants, they were able to take this desire for normal birth alongside the prediction of a large baby, recognise the ways in which medicalised discourse constituted their potential births as dangerous, and create an alternative way of being that was rooted in the belief in women’s ability to birth their babies. This confidence was shared by both Kathy, “I did believe that my body could do it”, and Coralie, “I’m fabulously comfortable birthing a big baby.”

Women were able to construct this knowledge of vaginal birth as safe and normal through an inherent belief in the birthing capacity of women and were supported in this by others sharing positive information and stories. For Ari, this was through whānau history of normal birth: “Our history in my family, our birthing narrative is that we birth babies really well.” She described taking strength from the knowledge that women have been birthing their babies for millennia:

One of my affirmations was “my body doesn’t make a baby I can’t birth.” ... Turn it around and say women have been doing this for thousands of years, and I’m one of those women. And I stand on their shoulders. And on their knowledge and their wisdom. And this is... this is me. And this is my moment.

So too did Lauren, who recounted, “I was feeling really positive. ... I just sort of knew that women have done it from the beginning of time and that it’s going to be the most painful thing ever, but that I will get through it.”

Women were assisted in the discursive constitution of birth as normal by their antenatal educators, midwives, and personal networks. Mama described overcoming her birthing fears through hapū wānanga to build a confident view of normal birth:

I was scared before I did the hapū wānanga just because I didn’t know my body like that, I didn’t understand it, I didn’t know that I could naturally. ... When I
was able to connect with that and what my body can do and what my body is capable of, and that is me, then I was okay.

Midwives also opened up space for confidence in normal birth, as related by Kered, “My midwife was always really empowering. ... She’d make comments about how big this baby was gonna be but say that I’d be able to handle it and get through it.” Lastly, women’s confidence was built up through positive storytelling within their personal networks. Morgan shared, “I’d heard as well people say ‘oh my big baby was way easier to birth than my small baby, because...it just seemed to all match up a bit better.’”

4.4.3 “Taking my power back”

Even as they were entangled with the discourses of problematic largeness and dangerous birth, some participants undertook resistances to create space for a reclamation of their birthing autonomy. This appeared to be in two ways: through direct confrontation and denial of obstetric rights to decision-making, and through opting out of the high intervention pathways by declining appointments or proposed interventions or planning to birth out of hospital. The support of their midwives in these resistances, as well as other specific personal characteristics, were fundamental indicating that these pathways to resistance are not open to all.

In some cases, the partialness of resistances was evident in the way that women remained engaged with obstetric services and were influenced by dominant discourses, but still sought to question the authoritative nature of the care they were receiving. Casey described her experience of seeking to negotiate the timing and mode of her birth:

> Even if you are pushing back, [the doctors] don’t really listen, they try and word it so that you will agree with their agenda. And I really had to dig my heels in at the time and say, no, this is happening.

Other women chose to opt out of engagement with obstetricians altogether as a way to secure their resistance. Jessica explained why she declined obstetric care in her third pregnancy, after receiving a recommendation for a caesarean based on her own stature
in her second pregnancy, “I opted out of hospital visits after the growth scan. ... I knew what they’d say so I didn’t actually go to the hospital.”

Resistance was both partial and costly, and not available to all women. Stress levels were high as the participants constantly had to negotiate space to make their own decisions, navigating difficult interactions with health professionals, and being exposed to coercive methods of persuasion and non-compliance labelling. These encounters could be extremely draining, and often came at significant emotional cost. Casey said, “It’s stressful, because I don’t feel like they listen,” and Kathy agreed, “It was really hard. It’s like I had to advocate for myself, with the support of my midwife the whole time.” The participants also identified that they had specific characteristics that privileged them to counter this stress and advocate for themselves. Ari identified, “If I have quite a bit of health literacy behind me ... if that’s my experience, then what the heck do other women do?” Others recognised that a particular personality or background would support these resistances. Casey reflected, “I’m fortunate that I’m quite a strong-willed person and I will push for what I want. ... But if you’re someone who’s a little bit more subdued than I am I guess, you’re not gonna push back and you’re just gonna accept that kind of treatment.” Similarly, Kathy echoed, “I’m a social worker so I can be used to how professionals talk. But I actually felt sorry for someone who isn’t very clear with what they want, getting told ‘this is what’s happening.’” This affirms the concept that oppressions are layered and complex and do not affect all women equally (Hawke, 2021).

As well as intrinsic characteristics that supported this resistance, a significant thread across multiple participants’ experiences was the support of their midwife in claiming their autonomy. Ari described her midwife, “I found a really awesome LMC [midwife], a community one who believed in holistic birthing and that women should have the right to choose and be informed about their decisions.” It was very clear that when midwives supported women to make informed decisions, it created opportunities for resistance and therefore transformation. Women were trusted, listened to, and supported, to own informed choices about their care. Women and midwives worked together in a mutually respectful space where they each brought their own responsibilities and knowledge to
the relationship. Jessica described how her midwife supported her decision-making process around planned place of birth:

*I spoke to my midwife and I had a really really amazing midwife who she wasn’t at all pressuring in trying to get me to go to the hospital or anything like that, she just always said that it was up to me what I did.*

The participants repeatedly described being supported to be active players in their own story, to consider options and make decisions for themselves and their family. Morgan reflected on how her midwife approached this:

*I think my midwife routinely was very good at telling me that I had options about everything. And that I always had the option of saying no to whatever their recommendations were. ... She said, “This is what we recommend but you can always say no if it doesn’t align with your own values”, and she was really clear about that.*

Ari reflected on the fact that she was not aware that she had the right to make informed choices for herself, until her midwife brought it to her attention: “*[The midwife] said to me, which was the most powerful thing ever, ‘Do you know that you can say no?’”*

Kathy, who was strongly advocated for by her midwife in choosing to labour rather than have a planned caesarean, mused on the role that a midwife can play in educating pregnant people in their right to choice, and in developing those informed decision-making skills:

*My midwife was the one that was in my corner the whole time and I think that women don’t realise that they have a choice in those scenarios and that you do need a midwife that will back you and will support you. ... Midwives really need to encourage the mother to make that decision and that should be promoted from when you first meet the midwife, every single meeting, that you have a choice. [Women] should be given decisions right from when they first meet.*

Where the participants were privileged with supportive personal characteristics and a midwife who supported their resistances to the medicalisation of their pregnancies and
births, this could create transformative possibility. Even while they wrestled with the oppressive effects of limiting dominant discourse, they challenged this with attempts to carve out a more confident and empowered maternal subjectivity. Ari gave voice to the overwhelmingly positive empowerment that could come with embracing the role of decision-maker when she declined an induction of labour that she did not want:

I felt like I’d just bossed my way out of something that wasn’t right for me, and I felt like I could have just fist pumped down the corridor out of there. That was how I felt. I felt like I was just a new woman. I’d taken my power back and this is me. I’m ready to do this and I’ll take whatever comes. And I felt like I had fought for my baby and my body.

4.5 Chapter Summary

This chapter has laid out my study findings in the form of three overarching themes and their related sub themes. Themes One and Two painted a demoralising picture of the experiences of women who have an ultrasound prediction of a large baby in pregnancy. The authoritative knowledges produced by ultrasound and the construction of pathology in relation to a large baby were held up as truths that shaped these experiences. Participants were shown to take up these discourses in oppressive ways in terms of the constitution of their maternal subjectivities, leading to a loss of autonomy over their pregnancies, acquiescence to medical management, and a loss of belief in their ability to birth their babies safely. The effect was to disrupt women’s joyful experience of their pregnancy, leading to feelings of fear and guilt that they had failed their maternal responsibilities to keep their babies safe.

Theme Three explored the challenges that the participants made to dominant discourses and their oppressive effects, through resistance and counter-discourse. A multitude of ways of knowing were used to resist the authority of ultrasound fetal weight predictions. Women challenged the construction of large babies as pathological and of vaginal birth as dangerous. Troubling these fixed notions allowed the participants to create space to reclaim their birthing autonomy. They did so with the support of their midwives, and due to several other enabling personal characteristics. Through these resistances, we
glimpsed a more hopeful and empowered picture of pregnancy and birth for people with an ultrasound prediction of a large baby.
5 Discussion

5.1 Introduction

My research posed the question “How does ultrasound prediction of a large baby from 28 weeks pregnancy impact on people’s experiences of their pregnancies and births?” My findings, presented in Chapter 4, have demonstrated the ways in which people’s pregnancy experiences are impacted profoundly and largely negatively by this prediction. In this chapter I explore the implications of my findings for midwifery knowledge and practice. I argue that ultrasound prediction of a large baby in the third trimester has oppressive effects on pregnant people. They take up the dominant discourse that frames predicted large babies as a medical problem to be managed, with little tangible improvement in clinical outcomes. Pregnant people are directed down high intervention care pathways, to which they feel obligated to acquiesce. They struggle with feelings of fear and guilt as they experience their pregnancies as sites of risk and are constituted as failed mothers who are individually responsible for their large babies. However, these discourses that problematise predicted large babies, and constitute the pregnant people that carry them as bad or failed mothers, are not total. In this chapter I also affirm the possibilities for resistance to the problematisation and medicalisation of predicted large babies in utero. These resistances point to possibilities to challenge and transform the oppressive effects of dominant medical discourses on pregnancy experience and maternal subjectivity. I conclude this chapter by offering recommendations for midwives to incorporate the findings of this research into our practice, along with the need for further research.

5.2 Aim and Key Findings

My study aimed to explore the implications of ultrasound prediction of large babies in the third trimester of pregnancy on people’s perceptions and experiences of pregnancy and birth. I wished to understand the ways that an ultrasound prediction of a large baby affected people’s pregnancy experience including the impact on birth care and choices and the relationship pregnant people have with the people who provide their care.
Further to that, my objectives were also to identify the key role midwives might play in challenging the medicalising discourses and practices relating to large babies, and to offer a critical position on this practice topic grounded in a midwifery epistemology of normal birth and partnership (Guilliland & Pairman, 2010; NZCOM, 2009).

As explored in Chapter 3, I believe the huge response to my call for participants is indicative of what I knew anecdotally as both a practising midwife and mother, that the problematisation of large babies is a growing and troubling issue for pregnant people and midwives. This is driven by the ever-expanding reach of ultrasound into otherwise normal pregnancies and a medical culture surrounding pregnancy and birth that now emphasises the risks associated with size variations of both fetal and pregnant bodies (e.g. Chadwick & Foster, 2014). Aotearoa NZ midwives affirmed, “This is so needed” (S. Ballard, personal communication, 3 June 2020) and, “What a valuable project” (S. Armour, personal communication, 3 June 2020). This sense of the importance and timeliness of this issue were further affirmed by midwives’ positive responses to my publishing of the literature review for this thesis in the NZCOM Journal. I therefore present this discussion of my research findings in the spirit of offering my midwifery colleagues and birthing whānau a resource for navigating and challenging the problematising of large babies in utero. This undertaking is supported by the feminist poststructural theoretical underpinnings of this research.

My findings were presented as three themes: A big problem; Thinking small, limiting possibility; Thinking big, creating possibility.

**A big problem.** The information produced by ultrasound holds an authoritative place in women’s pregnancies. Participants viewed the use of this technology in pregnancy as both a desirable opportunity to meet their baby and as a necessary part of pregnancy surveillance to ensure their baby’s wellbeing and safety. Regardless of the indication for their third trimester pregnancy scans, babies were routinely measured, resulting, for the participants in this study, in an estimation of ‘large-for-gestational age’ and a departure from normal pregnancy. Women took up the discourse of scan authority/accuracy
coupled with the discourse of large babies as pathological in ways that proved highly oppressive for their pregnancy experience and maternal subjectivity.

**Thinking small, limiting possibility.** Discursively constituted as having an ‘at risk’ pregnancy, participants described the range of oppressive effects of a third trimester ultrasound prediction of a large baby. Participants describe a loss of control over their birthing journeys as they felt obligated to comply with obstetric decision-making and the surveillance and management of their pregnancies and births. Participants’ acquiescence to this surveillance and management was in part driven by their constitution as failed mothers who have not managed their pregnancies well and have therefore placed their babies at risk. Ceding control to obstetric management was therefore understood as an act of good mothering intended to restore their maternal subjectivities. This struggle had significant emotional effects on women’s enjoyment of their pregnancies. Participants describe the ways in which their pregnancies became marred by feelings of distress, fear, guilt, and dissonance as they grappled with feeling responsible for their large babies and fearful about the dangers of vaginal birth.

**Thinking big, creating possibility.** Even as they were taking up dominant discourse in ways that constituted an oppressive maternal subject position, participants also described ways in which they were able to resist and challenge these meanings. Centring other ways of knowing such as embodied, experiential, whānau, and midwifery knowledges, some participants found ways to speak back to the dominant discourse that problematises large babies and responsibilises mothers. Participants offered counter-discourses of their predicted large babies as healthy and robust, and affirmed their own capacity to birth their babies normally. This gave them a framework for challenging the oppressive medical discourses that drove engagement with high intervention care, and empowered them to begin to reclaim their rights to decision-making. This resistance was not accessible to all women, as various enabling characteristics were identified as important, including a supportive midwifery partnership.
5.3 The Culture of Pregnancy Ultrasound

My findings situate contemporary pregnancy ultrasound practices within overarching maternity care trends of increased surveillance and risk management through intervention, as discussed in Chapter 1. As I have already identified, increasing reliance on ultrasound scans has been recognised as a concerning characteristic of pregnancy care in Aotearoa NZ. Midwives have observed a rise in growth scans, with a pattern of increased scanning for bigger babies along with more inductions (Morris, 2020). Fetal growth measurements are being routinely taken during pregnancy ultrasound scans even when not clinically indicated or requested (Smith, 2021), and without the explicit informed consent of pregnant people. Frequent and routinised scans for a wide range of clinical indications were a feature of my participants’ experiences. Irrespective of the presence or absence of growth concerns, growth measurements were taken at every scan, and, for my participants, resulted in a prediction of a large baby. This prediction then had a profound impact on their pregnancies regardless of whether the prediction was clinically indicated or accurate. This research focused on the experience of predicted largeness and does not assess the efficacy of ultrasound prediction of a large baby in terms of improving maternity outcomes. However, as I will discuss below, participants came to question whether the resulting medical surveillance and management of their pregnancies following ultrasound prediction of largeness had indeed been warranted.

It is important to note that participants were on the whole enthusiastic in their engagement with scans. This engagement was complex, and the women brought their own set of meanings and expectations to scans beyond those intended in clinical care. Scans were, for the most part, accepted by participants as routine and important clinical assessments; however, my analysis identified a range of other meanings that women attached to their ultrasound scans. This included the opportunity to see the baby and for reassurance following earlier experiences of infertility or miscarriage. The attachment of these ‘social’ meanings to scans is consistent with previous research, as discussed in Chapter 2 (e.g. Frost & Haas, 2017; Thomas et al., 2017).
My analysis also suggests that even when pregnant people questioned the need for pregnancy scans, they saw agreeing to a scan as a way to demonstrate their commitment to the safety and wellbeing of the baby and therefore the act of a good mother. This is supported by Frost and Hass (2017) who argued that there is a cultural expectation that the ‘good mother’ will submit to and participate in scans (Frost & Haas, 2017). Compliance with scans situates women as good mothers by demonstrating their commitment to their unborn child’s safety and embracing the opportunity to bond with their baby in this technologically mediated way (Mitchell, 2001). This discursive framing of scans as an act of maternal care was evident for some of my study’s participants. These participants described their reluctance to have ultrasound scans but made sense of their agreement to be scanned as the right thing to do for the good of their babies. Conversely, not doing so would engender feelings of guilt and blame. For example, as explored in Chapter 4, Mags found the increased surveillance of frequent scans costly and logistically difficult but articulated that she would feel guilty if she didn’t attend the scans, especially if something went wrong.

This research attests to the power of information produced by ultrasound scans in clinical decision-making, regardless of evidence about the accuracy of this information. Fetal weight predictions produced by ultrasounds were widely accepted by participants as authoritative. This discursive framing of pregnancy ultrasound sidelines the embodied knowledge of pregnant people and midwifery knowledges of fetal growth assessment (through palpation) as unreliable (Mitchell & Georges, 1997; Morris, 2020). The idea that the knowledge produced by scans is value-free and objective has been critiqued by scholars from a range of disciplines including midwifery (e.g. Roberts, 2012; Thomas et al., 2017). As discussed in Chapter 2, a range of studies have found that ultrasound scan estimation of fetal weight is substantially inaccurate (e.g. Chauhan et al., 2005; Colman et al., 2006; Milner & Arezina, 2018; Peregrine et al., 2007; Stubert et al., 2018). Nevertheless, I saw little evidence in most of the participants’ accounts that demonstrated awareness about the possible limitations and inaccuracies in ultrasound EFWs. This suggested that participants had not made a meaningfully informed choice about scans and were at times unprepared for both the large baby prediction itself and the consequences of that prediction. The lack of informed decision-making about scans
was identified twenty years ago. Mitchell (2001) advocated for women to be offered informed choice regarding pregnancy scanning, including discussions of implications, limitations, and consequences, and this does not seem to have progressed since.

5.4 The Problematisation of Large Babies

As I have established, pregnancy scans are framed as authoritative and the necessary act of a good mother who is committed to the wellbeing of her baby. In my study, these frequent and routinised pregnancy scans resulted in the (often incidental) finding of a predicted large baby. As demonstrated in Chapters 2 and 4, a large baby prediction resulted in a move away from normality (as defined by obstetric parameters) leading to increased medical surveillance and management of pregnancy and birth. This is regardless of whether there were any clinical concerns about growth prior to scan measurements being undertaken, and regardless of whether any follow up investigations identified an underlying pathology such as gestational diabetes that might provide a clinical explanation for an abnormally large baby.

The idea that fetal largeness is a deviation from normal pregnancy rather than simply a normal aspect of human diversity is situated within a wider dominant discourse that problematises the relationship between size and health. Recent decades have seen a rising global fixation with a weight-centred health paradigm that connects large bodies with ill health as a result of poor lifestyle choices and a failure of self-management (O’Hara & Gregg, 2012). This has resulted in a proliferation of public health policies focussed on diet and exercise and intense popular media reporting on an ‘epidemic of obesity’ in Western countries (O’Hara & Gregg, 2012). This wider discursive backdrop has more recently encroached on pregnancy with large pregnant bodies and large fetuses framed as medical problems of pregnancy, as discussed in Chapter 2. This has fundamentally shifted away from a more traditional celebration of large babies as ‘bonny’ and healthy (Jarvie, 2016). However as the ‘obesity epidemic’ rhetoric has gained traction, increasing numbers of high birthweight babies have been linked with increased rates of so-called maternal obesity and chronic illness including diabetes (Keenan & Stapleton, 2010). This link between pathology and fetal largeness was
evident in my findings. One of the outcomes of an ultrasound prediction of a large baby was a heightened regime of testing for maternal diabetes to discover a pathological (maternal) cause for the baby's expected largeness. This regime of testing persisted even when results repeatedly returned normal findings. This indicates the lack of possibility that a large baby could be synonymous with a normal healthy pregnancy. It is clear the idea that largeness in pregnancy (both maternal and fetal) can be associated with healthfulness is ever diminishing.

Like obesity epidemic discourse more generally, the problematisation of large babies is framed in ways that responsibilise pregnant people and their choices for that largeness. In other words, not only is a large baby a medical problem, but it is pregnant people’s fault as a result of poor self-management. This framing is compounded by epigenetic arguments that link fetal overnutrition to a lifetime of ill health, responsibilising mothers for all aspects of their children’s health even before they are born (Keenan & Stapleton, 2010). As participants took up the meanings of their babies as unhealthily large, they simultaneously experienced this as their own failing of self-management and maternal responsibility. This was reinforced in conversations with health professionals linking their failed self-management to their abnormally large babies. These findings corroborated other studies where parents were aware of perceived maternal culpability or shameful stigma associated with having a large baby (Jarvie, 2016; Redsell et al., 2010). In my study, I observed that this taking up of maternal responsibility for fetal largeness was notably more intense in participants who themselves had a higher BMI. For example, as described in Chapter 4, Casey discussed her feelings of not being trusted by the hospital team in managing herself (her dietary intake) and this failing resulting in her large baby.

Fetal largeness was not only associated with pathology of pregnancy but also with dangerous vaginal birth. Participants described being strongly encouraged during obstetric consultations\(^6\) (both in pregnancy and in labour) to accept interventions such as

\(^6\) As discussed in Chapters 1 and 2, LMC midwives must recommend to pregnant people that consultation with a specialist (e.g. an obstetrician) is warranted in a variety of circumstances (MOH, 2012). These consultations may take place in a range of contexts such as at antenatal clinics or during labour.
planned caesarean or early induction of labour for the safety of their baby. This was in spite of the fact that current guidelines do not recommend the routine induction of labour or caesarean for most suspected large babies (MOH, 2019a). In these consultations, spontaneous vaginal birth of the large baby was discursively constituted as risky; likely to lead to maternal and infant morbidity or mortality including bodily trauma and brain injury. For example, Kathy and Sarah both related how, during obstetric consults, the doctors brought up the risks of neonatal death or brain damage in attempting a vaginal birth. There is a large body of literature that links fetal largeness to poor outcomes for women and babies. However, as I have argued in Chapter 2, a critical analysis of that literature reveals that practices of planned caesarean and early induction versus expectant management do not improve outcomes for women and babies. In fact, they may introduce their own package of risks. Due to the inaccuracy of scan EFWs, these interventions may also be enacted on people who birth average sized babies. Perhaps unsurprisingly, the mere presence of a scan EFW (regardless of the actual size of the baby at birth) increases the risk of interventions, something that was not clearly understood by the participants.

The authority afforded to pregnancy ultrasound combines with the problematisation of maternal and fetal largeness to produce a dominant discourse of large EFW as both a reliable measurement and one that represents a deviation from normal pregnancy and a failure of maternal self-management. This in turn positions pregnant people with a large baby prediction as requiring medical surveillance and management and as personally to blame for this predicament. The implications and effects of this dominant discursive framing on pregnant peoples’ pregnancy experiences and journeys are explored below.

5.5 The Negative Effects of the ‘Big Problem’

As I have discussed in 5.4, my findings have shown that the prediction of large babies by pregnancy scan is not a benign intervention. Rather, I have demonstrated that pregnancy becomes discursively constituted as abnormal, requiring medical surveillance and management to manage the risks posed by a predicted large baby, and that fetal largeness is framed as the fault of pregnant people. In this section, I explore the harmful
effects of this dominant discursive framing on pregnant peoples’ experiences and identities. Pregnant people experienced loss of choice as they were directed down high intervention care pathways. The weight of dominant medical discourse and their attempts to retrieve their maternal status ensured that they felt obligated to acquiesce to this medicalised care. For some participants, the relationship with their midwife within this context was experienced as lacking the allyship and advocacy that they expected and felt they needed. They struggled with feelings of guilt and fear as they experienced their pregnancies as sites of risk and were constituted as failed mothers, to blame for their large babies. These negative effects contributed to an overall deterioration of the pregnancy experience and a sense of disempowerment in welcoming their babies into the world.

5.5.1 High Intervention Care Pathways

My analysis highlighted the way that a large baby prediction marked a distinct turning point in pregnant people’s experience of their care. With the advent of a large baby prediction by scan, participants described a shift in their care pathways towards increased medical surveillance and risk management. The participants’ experiences became characterised by high intervention care, as they experienced the removal of choice about how and when to birth and an attendant sense of disempowerment. Examples of this include being directed towards induction of labour or planned caesarean as a way of reducing the risks associated with spontaneous vaginal birth. Also, the removal as options of the very things that support normal birth, such as primary birthing context, spontaneous labour onset, mobility and the use of water in labour (e.g. Dixon et al., 2012; Lawrence et al., 2013; Maude & Kim, 2020).

The discursive framing of medical knowledge (represented by both scan data and health professional opinion) as authoritative created an environment where women were largely unable to question this high intervention care. The participants identified that their health professionals often presented this high intervention care as the only possible course of action. Such is the weight of medical dominance in a maternity system grounded in pathology and risk (discussed in Chapters 1 and 2), that these interventions
were discursively constructed as an imperative, rather than an option to be considered. While this medical imperative was often delivered to the participants as part of an obstetric consultation, some participants also experienced this constraint of choice within their midwifery relationships. Some of the participants described being directed towards high intervention care by their midwives. As outlined in Chapter 3, all poststructural subjects are enmeshed in dominant discourse. Consequently, midwives could be as entangled in the oppressive effects of dominant discourse about fetal largeness/large babies as the women themselves. Despite attempts to distinguish itself from medical science, midwifery nevertheless frequently reveals “a strong subjection to the biomedical paradigm” (Parker, 2019; Rail et al., 2010, p. 225). For those participants, who had anticipated allyship and advocacy from their midwives in the face of medicalisation, the trust and reciprocity that is implicit in midwifery partnership was eroded (Chadwick & Foster, 2014; Guilliland & Pairman, 2010).

Even where participants scrutinised this medical dominance and internally questioned the high-risk classification of their pregnancies, acquiescing to high intervention care was rendered necessary to regain good mother status. Their constitution as failed mothers, who have placed their babies at risk by poorly managing themselves and their pregnancies, made them vulnerable to this direction of care. Participants at times articulated hesitation about interventions such as induction of labour but agreed to these with the sense that they would feel guilty otherwise, especially if things ‘went wrong’. Placing decision-making into the hands of obstetricians and midwives was understood as being an act of good mothering intended to restore their maternal subjectivities. Thus, we can see that the dual weight of authoritative medical knowledge combined with maternal responsibilisation for fetal largeness ensured women’s acquiescence to high intervention care pathways, contributing to a disempowered experience.

### 5.5.2 Fear and Guilt

In this section I discuss how the dominant discourse of fetal largeness negatively impacted on participants’ emotional experience of pregnancy and how they felt about themselves as parents-to-be. I show how this not only marks a point in which
participants lost their joy in pregnancy, but also drove their engagement with medical surveillance and management and informed the ways in which they ceded their confidence and autonomy as pregnant and birthing people.

While traditionally, study of emotion and affect sits outside of discursive study, Wetherell (2013) has argued against a disconnect between affect and discourse. While this study does not purport to undertake affective-discursive analysis per se, I do have an interest in the work of emotion in relation to the discursive, and consideration of the role of emotion in pregnant people’s navigation of the dominant discourse of fetal largeness. Participants’ accounts of their pregnancies and births were saturated in emotion. Participants described various emotional responses to the problematisation of their pregnancies such as distress, dissonance, guilt, grief, and fear. For example, as demonstrated in Chapter 4, participants described feeling guilty for having made their babies “too fat” and feeling fearful about their babies “getting stuck” during birth.

Of central interest to me is the way in which taking up blame for their large babies resulted in participants feeling guilt, and the work of this emotion in ensuring their compliance with medical surveillance and management. Participants described the heavy emotional impact of taking up responsibility for their babies’ largeness as a failure of self-management and thus as something for which they could be individually blamed. For example, as discussed in Chapter 4, Sarah felt guilty that she caused her baby to be too big by eating too much and craving sugary foods. It is not surprising that this resulted in participants feeling badly about themselves and their pregnancies. This echoes Parker and Pausé’s (2019) work on maternal largeness, where the affect of shame was instrumental in producing negative maternal subjectivities and also provoked a (reluctant) acceptance of obstetric surveillance and management.

I am also interested in the work of fear, an emotion which became prominent in women’s experiences as they took up the discourse of dangerous birth. The participants feared that they lacked the capacity to birth their babies safely. They feared that vaginal birth posed a danger to their babies and felt a strong sense of responsibility to ensure the baby’s safety. Women submitted to the introduction of inductions of labour and
caesareans, and the removal of options such as spontaneous labour or primary birth as a way to secure the safety of their baby and diminish the threat of dangerous birth. This analysis is supported by a large body of literature that has established that childbirth fear is independently associated with an increase in interventions (e.g. Heinze & Sleigh, 2003; Nieminen et al., 2009; Ryding et al., 2015).

The decision to prioritise the safety of the baby by acquiescing to birth interventions is seen by women as a positive moral decision on the part of a mother (Scamell et al., 2019). In my study, this acquiescence was driven by the work of both guilt and fear. In seeking the best for their babies, participants experienced guilt (as they took up a discourse of pathology and held themselves responsible) and fear (as they took up a discourse of dangerous birth). As the participants’ pregnancies were constituted as risky, abnormal and caused by their own choices, they took up responsibility for mitigating this by accepting high intervention care. In this way the affective was part of the work of the discursive in engaging participants in highly interventionist pregnancy and birth, even when this countered their own views that such care might be unnecessary.

5.6 Challenge and Transformation

As I have argued in Chapter 3, dominant discourses are never total. This is true for the dominant discourses that problematise large babies and constitute women as failed mothers. Women’s resistance to the discursive constitution of their babies and pregnancies as pathological and risky, and themselves as irresponsible mothers, opens up possibilities to challenge and transform harmful and oppressive meanings about pregnant and birthing subjects. Through questioning established knowledges about scan EFWs and attempting to reframe their pregnancies and births within normal parameters, participants sought to recover a positive pregnancy experience and maternal identity. This in turn created space for a reclamation of their birthing autonomy. A supportive midwifery partnership played a critical role in these resistances and offers midwives a vehicle through which we can challenge and transform the problematisation of pregnancies with a large baby prediction.
5.6.1 Reclaiming Normality

Downe (2006) argues for an encompassing definition of normality that does not just focus on physical factors but “takes account of each woman’s labour in the context of her pregnancy, her family, clinical, psychosocial and emotional history and the story of her life” (p. 354). My findings found glimpses of this in the participants’ accounts, including examples of troubling a narrow characterisation of normality according to obstetric parameters (Davis & Walker, 2011). Some participants recognised the discursive constitution of their babies as problematically large and understood this as taking place within the context of a highly risk-centric, medicalised pregnancy and birth culture. This made room for a counter-discourse of normality, whereby participants attempted to disconnect the ideas of largeness and ill health and create a normalised view of their baby’s predicted largeness.

My analysis identified instances where women challenged this discourse of ‘obese’ babies. They tested the notion of maternal blame for fetal largeness in favour of explanations focused on genetic heritage and whānau histories as the origin of their babies’ predicted size. They defended themselves against the burden of responsibility for causing their babies purported excessive largeness, and instead embraced it as an indicator of the robust healthiness of their babies. As discussed in Chapter 2, other scholars have identified these same resistances, drawing on experiential, familial, and cultural knowledges, and whānau histories to support a normalised view of large bodies (e.g. Jarvie, 2016; Parker & Pausé, 2019). In my findings, some participants favoured a multitude of ways of knowing which supported this broader view of normality: self-knowledge, embodied knowledge, experiential knowledge, whānau knowledge, and midwifery knowledge.

My study demonstrated that recentring women’s and midwives’ ways of knowing and trusting in the inherent birthing capacity of women also provided an opportunity to trouble the notion that vaginal birth of a predicted large baby is dangerous. Through scrutinising and then challenging dominant discourse as situated within an increasingly medicalised and risk-centric maternity context, participants attempted to constitute
themselves as having confidence in and capacity for normal birth. Their resistances were rooted in the belief that women can birth their babies. Neerland (2018) defines birth confidence as “a woman’s belief that physiologic birth can be achieved, based on her view of birth as a normal process and her belief in her body’s innate ability to birth, which is supported by social support, knowledge, and information founded on a trusted relationship with a maternity care provider in an environment where the woman feels safe” (p. 431). My analysis demonstrated these elements in the participants’ accounts. They articulated an inherent trust in the birthing process, believing in pregnancy and birth as a healthy, normal physiological, social, and cultural process that does not routinely require medical intervention (Grigg et al., 2015; Neerland, 2018). My findings also identified support, information, and positive narratives shared with women by whānau, hapū wananga, social networks, and their midwives as contributors to birth confidence.

As participants spoke back with a counter-discourse of normality (about both fetal largeness and safe birth), this began to make space for a more positive maternal subjectivity. Constructing their pregnancies as normal meant that spontaneous labour and birth was not discursively framed as dangerous to their babies. This allowed them to reclaim their decision-making autonomy and decline high intervention care without threatening their view of themselves as good mothers. However, interactions with obstetricians that involved declining interventions were emotionally costly to participants and my findings showed that a trusting midwifery relationship was crucial. Midwives built birthing confidence, educated about an informed choice paradigm, and advocated for women in an institutional context. With this support, it was clear that women’s efforts of resistance were facilitated to be less partial than they might have otherwise been.

Not all women in the study were able to undertake these resistances. In addition to a supportive midwifery relationship, my analysis identified the presence of other characteristics that enabled resistance. Participants explored the way that a certain forthrightness supported them in resisting dominant discourse, whether this was through a strong-willed personality or a professional background that built personal confidence.
Where women had previous experience of a large baby prediction, this gave them more confidence in taking up counter-discourse and resisting both the attribution of objective authority to scan knowledge, and the problematisation of their predicted large babies. Familial experiences of healthy large babies and normal birth also gave women an alternative cultural or social framework to support their counter-discourse of normality.

5.6.2 Implications for Midwives

Participants clearly articulated that the support of midwives was critical to their resistances to the problematisation of pregnancy with a large baby prediction. As discussed in 5.5.1, midwives could be as entangled in the oppressive effects of dominant discourse about fetal largeness as the women themselves. Conversely, midwives could also act as vectors for resistance by supporting women to question and challenge dominant discourse about pregnancy scanning and fetal largeness. They did this by offering an alternative construction of pregnancy and large babies; recentring women’s and midwives’ ways of knowing, offering women reassurance about scan reliability, and the capacity of women to grow and birth their babies. In my study, support took place within a continuity of care context where the development of a midwifery partnership provided a foundation of trust and reciprocity for this critical dialogue (Guilliland & Pairman, 2010). This is an appropriate context for midwives to challenge the overuse and routinisation of pregnancy scanning and fetal measurement discussed in Chapters 1 and 2. This could be done by ensuring that women are offered a true informed choice before a scan is undertaken, including discussion on the purpose and limitations of a pregnancy scan and the possible impact on care pathways (e.g. Frost & Haas, 2017; Mitchell, 2004).

Midwives can also support women’s challenges to dominant discourses of abnormality. They can help women overcome the construct of maternal blame and responsibility by supporting women’s resistances to authoritative scan knowledges and discourses of problematic largeness. Midwives build confidence in the physiological process of birth and people’s own birthing capacity. Participants described how midwives constructed a birthing narrative that affirmed pregnant bodies as fit-for-purpose and birth as a normal
process. This alignment with a normal birth ontology is a discursive resource that supports both pregnant people and midwives to challenge and disrupt the discursive construction of dangerous birth of large babies. In doing so, women were able to decline high intervention care without threatening their good mother status.

5.7 Strengths and Limitations

A key strength of this research is the timely and topical nature of the work as evidenced by the enthusiastic response from both midwives and pregnant people. The recruitment phase sparked keen engagement from midwives who willingly shared the research information widely, which in turn was followed by an overwhelming response from potential participants. I have also had positive feedback from midwives regarding the published literature review article, indicating that they feel that this is a midwifery topic that warrants further exploration. Given the absence of literature relating to people with a prediction of a large baby and to the Aotearoa New Zealand context, this provides an important opportunity for generating new knowledge in this area. This study has focused on qualitative data but given the level of response there is the possibility of untapped data of a quantitative nature, for example considering birth outcomes in the presence of a large baby prediction in Aotearoa NZ.

Regarding study design, the sample size was appropriate for the type of research, and I was able to recruit participants who were characterised by some diversity of ethnicity, parity, mode of birth, and predicted versus actual baby size. However, all participants were cisgender and in a limited age range. Interviewing online meant that diversely located people participated, which prevented the over-influence of care policies from any one district health board. Given that recruitment and data collection were undertaken solely online, this restricted participation to those with online access and literacy. Participants self-selected to be involved in the study and they may overrepresent those with a strong view on this topic. I also note that I have been unable to undertake an intersectional analysis of this topic due to the time and size constraints of this being a Masters project.
A further limitation of this work is that it did not include the midwives’ voices. My analysis attempted to capture the elements of the midwifery relationship as perceived by the women, but this is an unexplored research opportunity. My study also considered pregnant people who did have scans thus cannot comment on the experiences of those who elected not to have scans at all.

In closing, I consider my own role as a novice researcher contributing to the strengths and limitations of this work. My own skills grew as the project developed and this was particularly true of my interviewing skills. Researcher reflexivity is an integral part of work of this nature and the research is influenced by my own views. I bring to the research my own experiences, both as midwife and birthing woman. I also acknowledge that I am a Pākehā cis-gender researcher, which is just one viewpoint in many.

5.8 Recommendations for Practice

In response to my findings, I encourage midwives themselves to scrutinise the dominant discourses of authoritative scans and problematic large babies, becoming vectors for critical thinking and resistance. I make the following recommendations for midwifery practice, that:

- Midwives question the routinisation of pregnancy scans and challenge the accepted objectivity and accuracy of scan data. In offering pregnancy scans to whānau, midwives offer informed choice to whānau, providing clear information about the purpose, limitations, and implications of scans.
- Midwives incorporate a broader view of normality into their practice, remaining committed to a normal birth ontology and providing midwifery care to people with a large baby prediction that supports birth physiology, pregnant people’s dignity and autonomy, and informed choice and consent.
- Midwives undertake critical research to provide midwives and birthing people with resources to question and challenge medical dominance across pregnancy and birth knowledges, especially where such knowledges undermine normal birth and partnership between midwives and whānau.


• Midwives hold space for cultural knowledges about fetal largeness and the prediction of large babies, including opening up space for mātauranga Māori perspectives on this issue.

5.9 Future Research

Future research on the prediction of large babies should focus on:

• Exploring Aotearoa NZ midwives’ experiences in working with people who have had an ultrasound prediction of a large baby in pregnancy. This could be undertaken as a qualitative study with feminist poststructural underpinnings.

• Storytelling positive birth stories from both birthing people and midwives to contribute to a body of positive wisdom on birthing large babies. This could be undertaken as a qualitative work, utilising storytelling methods incorporating a feminist perspective.

• Exploring a mātauranga Māori perspective on fetal largeness and the prediction of large babies in Aotearoa NZ. This would be undertaken by Māori scholars, using an appropriate Kaupapa Māori research methodology.

• Investigating the impact of a large baby prediction on maternal and neonatal outcomes in Aotearoa NZ. This could be undertaken as a quantitative study.

5.10 Conclusion

In the increasingly technified world of pregnancy and birth, ultrasound has become cemented in routine care in Aotearoa New Zealand. Pregnant people take up scans with enthusiasm, but often without a full understanding of the implications of having such a scan. A scan that predicts the baby will be large is constructed as an objective and authoritative truth that predicates the need to intervene in the pregnancy for ‘safety’. Pregnant people take up blame for causing this problematic largeness and acquiesce to increasing medical surveillance and management in order to secure the wellbeing of their baby and retain their good mother status. As pregnant people take up this medicalising discourse, they experience their options narrowing as they are directed how to birth, where to birth, and when to birth. This subjectivity is characterised by a loss of
birthing choices, the emergence of fear, and a destabilisation of the midwifery relationship. That oppression is not total, and new subjectivities can (and must) be generated. Pregnant people who can see and understand oppressive discourses begin to develop strategies for resistance. Eschewing culpability for their baby’s largeness and reclaiming a broader sense of normality, in which size and health are decoupled and birth confidence is buoyed, supports a reclamation of birthing confidence and autonomy. Midwives are valued by pregnant people as key supporters of this resistance.
6  Researcher Reflective Postscript

Rewind 13 years and I am ensconced in a tiny labour room. Having declined an induction earlier, I have now agreed at 40 weeks. I had a scan yesterday, one of many, and they think the baby is about 5kg. The consultant enters the room and chivvies the midwife to get things moving along. I want time to walk around after my waters are broken as I am reluctant to go on IV oxytocin. The doctor is harried and unimpressed. He gruffly barks “We have four women having inductions today! Can’t have you all needing caesareans at midnight when there’s no staff.” Silence in the room. I am taken aback. “I won’t be needing a caesarean so that should free things up for the other women” I snap back. More silence. He leaves the room.

In the way of birth, this experience has never left me. Neither has the sense of sticking it to that doctor and pushing out my 5.5kg baby on my own steam. What began as an intimately personal voyage, both emotional and physical, has morphed over the years to a deeply held professional passion for the empowerment of pregnant people carrying a predicted large baby. As an LMC midwife, I have endeavoured to do this on a micro level, one woman at a time. Undertaking this thesis has offered me a chance to think more widely and consider a more macro level agenda for change.

When undertaking what is effectively a passion project, it becomes important not to be so caught up in one’s own head that one loses sight of what is happening outside of that. Remaining in midwifery practice while completing this thesis, I have had plenty of opportunity to remain grounded in the very real challenges that pregnant people and midwives face constantly regarding predicted large babies in utero. I answer a phone call from a client who has recently seen an obstetrician on a matter unrelated to fetal growth. He has recommended that she consider a caesarean due to the estimated size of the baby. She is in tears … I discuss induction of labour with a room full of expectant parents at an antenatal class. Several of them volunteer fervently that “big babies must be induced” … I open Facebook and there is a thread exploding with advice for a pregnant mama whose midwife is now declining to support her homebirth in light of an
ultrasound prediction of a large baby. This issue is everywhere in Aotearoa NZ pregnancy care.

Coming to the end of this process, I reflect that I have been in many ways completely unsurprised by the numerous perturbing elements of the participants’ stories. It is what I see and hear about in practice all the time, even as I try to disrupt the powerful and negative discourse of fetal largeness myself. I am both alarmed and reassured that my passion project remains relevant, and if anything, is even more pertinent than when my own journey began more than 13 years ago. I have at times felt overwhelmed by the seemingly immovable weight of the medical discourse that speaks of the failure of women to grow and birth their babies safely. But, as my supervisors exhort, all hope is not lost! In my findings, there is plenty of evidence to suggest that there are opportunities for people with predicted large babies to experience their pregnancies in a more confident and empowered manner, and for midwives to support this. I feel that my work walks the line of both hopeful and disheartening. I choose hope.
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102


Appendix A: Permission to Reproduce Article from Publisher

EXTERNAL EMAIL WARNING

Kia ora Cara
Thank you for getting in touch and great news that your article can be submitted as part of your thesis. The College Journal has no problems with this and there isn’t anything specific you need to do apart from ensuring the citation at the foot of the paper is made available:


Our copyright policy is quite simple – I will paste the details below for you. Otherwise, congratulations and best of luck with your Masters 😊

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Ngā mihi | Warm regards

Annie
Appendix B: Permission for Partial Thesis by Publication Approach

Cara Baddington

From: Suzanne Miller
Sent: Monday, 17 May 2021 2:56 pm
To: Cara Baddington, George Parker
Subject: Re: Literature review

kia ora kōrua
Firstly, apologies for the delay in getting back to you, Cara. At our PG meeting today we have been able to reach a consensus on the inclusion of your recent publication within your thesis. We agree that it will be necessary for you to seek permission for inclusion from the NZCOM Journal Editorial Committee. We anticipate that the article would sit within the thesis itself in the usual place a literature review would occupy, rather than being appended, and we ask that you write (with George’s guidance) some narrative within the chapter that positions the work and signposts it readily for examiners and readers to understand clearly.

best wishes for your ongoing writing

ngā mihi
Suzanne
Appendix C: Participant Demographic Information

Figure 1: Ethnic Groups of Participants

Note that participants were able to select more than one ethnic group.

Figure 2: Parity of Participants at Time of Interview
Note that some multiparous participants discussed more than one pregnancy and birth that met the criteria of the study.
Figure 5: Age of Participants at Time of Interview

![Bar chart showing age distribution of participants. The chart illustrates the number of participants across different age groups: <20, 20-24, 25-29, 30-39, 35-39, and 40+. The age group 30-39 has the highest number of participants, followed by 25-29.]

Figure 6: Gender of Participants

![Bar chart showing gender distribution of participants. The chart illustrates the number of participants by gender: Female, Male, and Gender diverse. The gender diverse category has the highest number of participants, followed by Female and Male.]


Figure 7: Partnered Status of Participants at Time of Interview

<table>
<thead>
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<th>Partnered Status</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
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<td>14</td>
</tr>
<tr>
<td>Non-Partnered</td>
<td></td>
</tr>
<tr>
<td>Not Disclosed</td>
<td></td>
</tr>
</tbody>
</table>

Figure 8: Home Region of Participants at Time of Interview

<table>
<thead>
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<th>Home Region</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland</td>
<td>5</td>
</tr>
<tr>
<td>Bay of Plenty</td>
<td>2</td>
</tr>
<tr>
<td>Waikato</td>
<td>1</td>
</tr>
<tr>
<td>Hawkes Bay</td>
<td></td>
</tr>
<tr>
<td>Manawatu</td>
<td></td>
</tr>
<tr>
<td>Wellington</td>
<td></td>
</tr>
<tr>
<td>Canterbury</td>
<td></td>
</tr>
<tr>
<td>Otago</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: Ethics Approval Letter

Category B Ethics Approval Letter

Date: 16th May 2010

Dear Cara

Re: Application for Ethics Consent

Reference Number: 007

Title of Application: Women’s experiences of an ultrasound prediction of a large baby from 28 weeks of pregnancy.

Thank you for your application for ethics approval for this project.

The review panel has considered your revised application including response to questions and issues raised. We are pleased to inform you that we are satisfied with the revisions made and confirm ethical approval for the project.

Many thanks for your careful responses to our recommendations.

We wish you well with your work and remind you that at the conclusion of your research you should send a brief report with findings and/or conclusions to the Midwifery Research and Ethics Committee.

All correspondence regarding this application should include the reference number assigned.

Best wishes with your research

Chair Ethics Committee

School of Midwifery
Appendix E: Consultation with the Kaitohutohu Office

Request for consultation on proposed midwifery research

Cara Baddington (10003776) <BADDICL1@student.op.ac.nz>
Wed 08/04/2020 07:00
To: Kaitohutohu <Kahohutohu@op.ac.nz>
Cc: Cara Baddington

Dear Kaitohutohu team,

Re: Consultation on Master of Midwifery research proposal

I am writing to seek your input and feedback on my attached research proposal. The proposal is currently in draft form. The proposed research explores the experiences of women who have had an ultrasound prediction of a large baby (macrosomia) in the third trimester of pregnancy.

Estimation of fetal size is a standard part of antenatal care in New Zealand. While this is focused on revealing babies who are not growing well, it can sometimes identify babies who appear to be growing larger than average (macrosomic babies). Ultrasound scans predicting large babies in pregnancy have a reasonable margin of error. Despite this, a prediction of macrosomia can result in pregnant women shifting from primary maternity care into the secondary maternity care system, recommendations being made for birth interventions such as induction of labour and/or planned caesarean, and limitations being placed on recommended place of birth. It is quite clear that this could impact on women’s experiences, however there is little literature on this topic and none in a New Zealand context. This research aims to explore the implications of ultrasound prediction of large babies in pregnancy on women’s experiences of their pregnancy and birth including their birth choices and relationship with caregivers. It will be conducted from a critical feminist theoretical perspective, with a sample size of 8-12 people, semi-structured interviews, and using reflexive thematic analysis. It is hoped that a better understanding of these impacts will provide opportunities for midwives to support women in resisting the medicalising discourses and practices associated with carrying a predicted large baby.

Thank you in advance for providing consultation relating to this proposed research. I have read the Māori Strategic Framework and am committed to ensuring my research is responsive to the needs of Māori and contributes to health equity. In answer to the requested questions:

Will the research involve Māori?

The study population is ‘women in New Zealand who have had an ultrasound prediction of a large baby in pregnancy’. This may include Māori women, if they contact me to participate in the proposed research. In considering this, I have been guided by Tolleh’s article on ‘Pākehā paralysis’, which affirms the importance of Māori benefiting from health research and offers principles for ensuring health research not only includes Māori but also fulfills responsibilities under the Treaty of Waitangi.
To this end, my recruitment strategy includes ways to specifically reach Māori women, such as distributing recruitment flyers and posters to Māori health providers such as Ora Toa/Tamariki Ora, and reaching out to local Māori midwives. I would appreciate any other ideas on how best to achieve this.

**Is the research being conducted by Māori?**

No, I am a Pākehā researcher.

**Are the results likely to be of specific interest or relevance to Māori?**

Yes. Speaking broadly, in New Zealand, all research is of interest to Māori as the tangata whenua. More specifically, it is possible that maternity caregivers of Maori women may have a presumptive bias towards predicting a macrosomic baby in pregnancy. Maori are 1.8 times more likely to be labelled as obese, and obesity is a risk factor for macrosomia. A prediction of macrosomia can result in a woman’s pregnancy being classified as ‘high risk’ which can involve the introduction of new health professionals, more appointments, a change in the location of appointments out of her local community, and an increase in the number of scans and tests such as diabetes testing. Midwives or doctors may make recommendations to women about ongoing assessment, timing of birth, mode of birth, and location of birth. Given that Māori women more frequently choose a primary context for birth (15.9% of Māori women birth in primary units compared to 8.5% of non- Māori women) this prediction may limit their freedom to choose to birth in their local community.

**Could the research potentially benefit Māori?**

Māori women grow and birth large babies. They also may at times be predicted to have a large baby in pregnancy, but it becomes apparent that the baby is not larger than average after the birth. This research offers both groups of women the opportunity to voice a Māori worldview regarding this. This may assist midwives working with Māori women to better understand how to support these women in finding ways to disrupt the dominant discourse around their presumptively problematic pregnancies.

I look forward to hearing from you about my proposal.

Yours sincerely,

Cara Baddington
Master of Midwifery student
Whāia te pae tawhiti kia tata. Whāia te pae kia maua.
Pursue the distant horizons so that they may become your reality.

**Office of the Kaitohutouhū Māori Research Consultation Feedback**

**Date:** 22 April 2020  
**Researcher name:** Cara Baddington  
**Department:** Masters School of Midwifery  
**Project title:** Women’s experience of an ultrasound prediction of a large baby in the third trimester of pregnancy.

<table>
<thead>
<tr>
<th>TĀIAO: Achieving environmental sustainability through Iwi &amp; Hapū relationships with the whenua &amp; moana</th>
</tr>
</thead>
</table>
| Mātauraka  
**Māori:** Exploring Indigenous knowledge |
| Hauora:  
**Improving health & wellbeing** |

The applicant has thoroughly considered how this research reflects Te Tiriti o Waitangi principles, the role of a kaupapa Māori research framework and ethical issues that pertain to Māori wāhine. She has rightly identified the issue of Māori women being more likely to be identified as obese, a risk factor for macrosomia. As this also increases the likelihood for wāhine to be treated ‘high risk’ and may influence the primary context for birth, this may correlate with associated risk of higher levels of birthing interventions and potential loss of freedom to choose a alternative birthing options. The researcher has identified that she will seek further communication with the Office of the Kaitohutouhū if culturally significant themes arise. We also encourage you to liaise and collaborate with your Māori colleagues. We appreciate the care and consideration of tangata whenua within this Masters project and wish you all the best Cara.

| To Live as Māori:  
**Kaitakitaka to ensure Māori culture and language flourish** |

Unlocking the innovation potential of Māori knowledge, resources and people.

**Name:** Kelli Te Maihāroa  
**Position:** Tumuaki: Rakahau Māori | Director: Māori Research, Otago Polytechnic
Appendix F: Recruitment Poster

DID YOU HAVE A SCAN IN PREGNANCY THAT PREDICTED A LARGE BABY?

I am seeking research participants who have had a baby in New Zealand in the last three years, and had an ultrasound scan from 28 weeks of pregnancy predicting that the baby was large (whether or not the baby was actually large at birth, or what type of birth you had).

This is a Master of Midwifery research project aiming to explore women’s experiences of this scenario.

Participation involves an interview with the researcher either online or in person.

A koha ($30 supermarket voucher) will be gifted in recognition of time given.

FOR MORE INFORMATION

PLEASE CONTACT CARA BADDINGTON ON BADDICL@student.op.ac.nz OR CONTACT GEORGE PARKER AT OTAGO POLYTECHNIC ON 0800 762 786

Approved by the Otago Polytechnic Midwifery Research Ethics Committee Approval number: xxx
Appendix G: Participant Information Sheet

Participant Information Sheet

Research Project: Women’s experiences of an ultrasound prediction of a large baby from 28 weeks of pregnancy

Tānā kea, my name is Cara Baddington and I am a midwife undertaking this research for my Master of Midwifery degree. Thank you for considering being a part of this research.

What is the aim of the project?
To explore the implications of ultrasound prediction of large babies on women’s perceptions and experiences of their pregnancies and births, and on how they navigate their care and relationships with their maternity caregivers.

What types of participants are being sought?
This study will include participants who meet these criteria:

- Can converse in English
- Aged 18 years or over
- Have had a baby (or babies) in the last three years which were predicted to be large on scan (i.e. had an ultrasound scan from 28 weeks of pregnancy estimating baby’s weight was greater than 90th percentile on a customised growth chart OR baby was estimated to weigh over 4.5kg at full term pregnancy).

It does not matter if your baby was actually large at birth, or not. Just the scan prediction.

What will my participation involve?
Your participation will involve an interview of around an hour with me either online or in a location of your choice. You may have children, support people, and/or whānau present if you wish. The interview will involve a discussion of your experiences in pregnancy and birth, and the care you received in relation to the prediction of a large baby. The interview will be audio recorded. You will be given a kōrero of a $30 supermarket voucher in recognition of your time.

How will my confidentiality be protected?
I will protect your confidentiality by removing identifying features from your interview as transcribed. This is known as ‘de-identification’. You may choose a name other than your own name, for the transcripts and final written thesis. If you would prefer to be identified by your own name, only first names will be used. Identifying features such as the area you live in, or the place you birthed will be removed and replaced with generic descriptors (for example, a tertiary hospital, or a primary birthing unit).

What data or information will be collected and how will it be used?
I will audio record and transcribe your interview. If you wish, you will be sent a copy of your transcript to review and will have four weeks from receipt to make any changes. This data will then be analysed to find themes which will be discussed in my final thesis. Quotes may be taken from the interviews and included in the thesis to illustrate particular themes. I will discuss the data with my research supervisors.

Results of this project may be published in relevant midwifery publications and/or presented at related conferences. Any data included will in no way be linked to any specific participant without prior consent.

Data storage
Data will be securely stored on a password encrypted computer so that only I have access to it. This will be retained in secure storage for a period of seven years, after which it will be destroyed.

Can I change my mind and withdraw from the project?
You can choose not to participate without any disadvantage to yourself or any kind. You may withdraw any information that has already been supplied, until data analysis has started. You can choose not to answer any question, and/or ask for the audio recording to be turned off at any stage. You may end the interview at any time you wish, without giving reasons.

What if I have any questions?
If you have any questions, please contact me:
Cara Baddington, researcher, on baddic1@student.otago.ac.nz
Or George Parker, primary supervisor, on george.parker@otago.ac.nz or 0800 762 786

Any additional information given or conditions agreed to will be noted on the consent form.

This project has been reviewed and approved by the Otago Polytechnic Research Ethics Committee (OPREC)
Appendix H: Participant Consent Form

Participant Consent Form

Research Project: Women’s experiences of ultrasound prediction of a large baby from 28 weeks of pregnancy

I have read the Participant Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:

- My participation in the project is entirely voluntary and I can choose not to answer any particular question.
- I am free to stop participating in my interview at any time.
- I can choose to withdraw information provided without giving reasons and without any disadvantage, up until the time data analysis starts.
- I will be sent a copy of my interview transcript to check for accuracy if I wish, and have four weeks to respond. No response after four weeks implies agreement with the transcript. I wish to receive a copy / I do not wish to receive a copy (Please cross out which does not apply)
- My data will be de-identified during transcription. It will be stored securely on a password encrypted computer that only the researcher will have access to. This will be retained in secure storage for a period of seven years, after which it will be destroyed.
- The researcher will discuss the progress of the project, including my de-identified data, with her research supervisors during the project.
- I will receive a $30 supermarket voucher as koha if I am interviewed by the researcher.
- The results of the project will be presented in a thesis and may be published in relevant midwifery publications and/or presented at related conferences.
- I will be sent a copy of the summary of the research findings, if I wish. I wish to receive a copy / I do not wish to receive a copy (Please cross out which does not apply)

Additional information given or conditions agreed to

I agree to take part in this project under the conditions set out in the Participant Information Sheet.

................................................. (signature of participant)
................................................. (full name of participant – please PRINT)
................................................. (signature of researcher)
Cara Baddington (full name of researcher)
................................................. (date)

This project has been reviewed and approved by the Otago Polytechnic Research Ethics Committee (OPREC)
Appendix I: Interview Guide

Interview Guide

Research Project: Women’s experiences of ultrasound prediction of a large baby from 28 weeks of pregnancy

Demographic Survey:

https://forms.gle/QEAcS8Xfqi5BHtYN9 (please click on link to see actual draft survey)
I will ask participants to complete this brief online survey either before or during the interview (whether face to face or online). If the survey needs to be completed at a face to face interview, I will either ask the participant to fill it in on a tablet that I bring with me and connect to the internet via my mobile phone, or I will just read out the questions and options to them (if no mobile data connection is possible). Participants may select “Prefer not to say” for the questions. Name will be used to collate information with the interview transcript and will then be discarded as part of the de-identification process. The following information is collected:

- Name
- Age
- Ethnic group/s
- Gender
- Number of pregnancies
- Number of children
- Type of Lead Maternity Caregiver (provider and coordinator of maternity care, e.g. midwife, GP, obstetrician)

Interview Questions

This guide includes a large number of questions. It is not my intention that I will ask all of these questions to women in a structured way, rather that the process of developing these questions will prompt my thinking in the interview process, helping to navigate through the women’s stories in ways that generate data that is relevant to my topic.

General
I am interested in your reasons for being a part of this study...
If multiple pregnancies) Which pregnancy/pregnancies are you referring to for this research?
I’d like to hear about your pregnancy...
Who provided the majority of your maternity care?

The prediction of a large baby
You had a scan predicting a large baby...
What circumstances led up to the scan?
How many weeks pregnant were you?
Was the scan to check the baby’s size or for something else?
How was the scan?
Did the sonographer doing the scan make a comment on baby’s size? What did they say?
What did your midwife/doctor say about the size of the baby after the scan?
How did you feel about that?
Did other people in your life (family, friends, work mates) make comments about the size of the baby?
What did they say?
How did you feel about that?

Maternity care after the prediction
Did you agree with the estimation of baby’s size?
Did you discuss that with your midwife/doctor? Why/why not?
Were you referred to an obstetrician after the scan due to the size of the baby?
Did you agree to referral? Why/why not?
If you agreed, how was your appointment? What was said? How did you feel?
In what ways, if at all, do you think the prediction changed your maternity care?
What was good about that? Not good?

Labour and birth
How did you feel about labour and birth before you had your baby?
Before the scan? After the scan?
How much of that was about the predicted size of the baby?

What were your hopes for the birth?
Did you have a birth plan? If so, what were you planning for?
How did your birth go?
How do you think the prediction of a large baby affected how your birth went?

How big was your baby predicted to be?
How big was the baby at birth?
Was there a difference?
What do you think about that?

Making sense of it
Did you feel like you had choices about your pregnancy care? About your birth?
Who did you feel was in control of your experience? Why?
How did you feel about your pregnancy/birth care after your baby was born?
Did you get the care you wanted? Why/why not?

What do you think causes large babies? Generally? In your case (if baby was actually large)?
Do you have big babies in your family?
Have you had a large baby before? How did you feel about that experience?
Do you think large babies are something to worry about? Why/why not?
Is there anything about your experience that you would have liked to be different?

Closing
Is there anything else about this, that you would like to share?