

**Exploring Breastfeeding Influencers for obese mothers:  
The experiences and perceptions of five clinically obese  
women and their midwives**

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# ABSTRACT

What are the barriers and facilitators to exclusive breastfeeding for women with a BMI equalling or exceeding 35kg/m<sup>2</sup>? A qualitative interpretative inquiry.

Breastfeeding is established as beneficial to both mothers and infants in terms of short-term and long-term health, or as normalising to the susceptibility of numerous conditions of poor health. Obesity is counted amongst these. A significant proportion of lactation research demonstrates exclusive breastfeeding as protective against obesity for the infant, and various explanations are put forward, such as; milk and gut microbiome species and diversity, comparative initial weight trajectories and impact on future BMI, and comparative satiety development. However, international and New Zealand trends of obesity prevalence are noted to be increasing; and obesity discourse, medical discourse and the World Health Organisation position on causes and consequences of obesity continue to be discordant, with the understanding of obesity as caused by energy in, versus energy out disequilibrium, being challenged.

Current research continues to pursue directions which demonstrate obesity to be linked to infant experiences which influence infant gut microbiome, including mode of birth, feeding methods and skin-to-skin; and intrauterine environment – referring to the fetal inheritance/epigenetic inheritance theory. Notably, studies examining the influence of epigenetic heritance propose that infants born to obese mothers begin with a disadvantage in terms of health trajectories, considered to stem from the intrauterine environment and experiences; are at a higher risk of caesarean birth and of receiving breastmilk substitutes than infants born to non-obese mothers.

This study aimed to examine the breastfeeding experiences of obese client participants, and breastfeeding support experiences of midwives who have cared for obese clients, to learn more about what were considered breastfeeding influencers, facilitators or barriers, within the maternity journey. A secondary aim of pursuing this research was to apply findings to the study site to see if a review of breastfeeding knowledge or support practices offered to obese women was indicated.

The initial study design utilised Facebook as a means of contemporaneous data collection. Due to low recruitment, the design was modified to include one-to-one semi-structured interviews, and midwives were included as participants. Data was analysed using interpretative phenomenological analysis, and five themes were identified reflecting the participants' experience of their maternity journey, and how breastfeeding was understood to interrelate with other maternity experiences.

Five main themes emerged during data analysis. These included communication, normality and autonomy, the midwifery partnership, the experience of intervention, and how intervention was understood to affect lactation. Communication was interpreted as the core theme for all participants, and this underpinned experience of normality and autonomy (defining oneself as a normal woman, and the ability to make decisions regarding one's maternity journey). How participants interpreted the themes of normality and autonomy, and their experience and interpretation of communication went on to influence their experience of the midwifery partnership and interventions in pregnancy, intrapartum and breastfeeding support. No theme in isolation was definable as either barrier or facilitator to exclusive breastfeeding, but developed as such, through the context of the experience.

The ability to define oneself as a 'normal woman' and the ability to participate in one's own care were either encouraged or discouraged through how communication was interpreted throughout the entirety of the maternity journey and hence were key findings of this research. Analysis of participant narratives revealed that it was through communication that these themes were interpreted. The midwife participants demonstrated awareness of these themes and related them further to the experience of the midwifery partnership, and how these factors, along with the social construct of obesity, underpinned communication with obese women, and the midwifery partnership.

Through data analysis the researcher noted considerable disparity between emerging themes and the research reviewed in the literature review. As this study was heavily focussed on models of care delivery and organisation at the study site, I question whether the disparity is reflective of the gap between research and practice. The aim of this study has been to identify breastfeeding barriers and facilitators for obese women and their midwives, and the purpose of doing so was to glean whether current service warranted further examination. From the themes which emerged in this study, I suggest that the approach to the maternity care of obese women, including language and communication styles as an area worthy of further examination.

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# CHAPTER ONE: INTRODUCTION

## Background

Breastfeeding research demonstrates that obesity presents challenges to the intention, initiation, intensity and duration of breastfeeding for obese women. Additionally, research demonstrates reduced breastfeeding to be associated with increased risks to the short-term and long-term health of infants into adulthood. These, together with the increasing obesity trends noted in New Zealand and internationally, give cause for concern. I queried whether breastfeeding outcomes were reported by BMI range at the study site; whether there was a BMI range to study site breastfeeding outcomes; and whether breastfeeding knowledge and/or support practices would benefit from review. A review of the core midwifery team's breastfeeding statistics suggested that women with a BMI equalling or exceeding 35kg/m<sup>2</sup> had poorer breastfeeding outcomes than other women (see figures 3a and 3b). Resolving to investigate further, I elected to review research which examined factors demonstrated to curtail duration of exclusive breastfeeding for obese women. Factors relevant to obese women were; hormonal complications attributable to obesity, use of synthetic oxytocin in labour, and mode of birth. Literature reviews question whether the use of synthetic oxytocin (Odent, 2013) and caesarean birth (Nissen et al., 1996), were independent risk factors for delaying secretory activation in women following parturition, irrespective of BMI. In other studies (Arrowsmith, Wray, & Quenby, 2011; Babendure, Reifsnider, Mendias, Moramarco, & Davila, 2015), women with obese level BMIs were noted to be over-represented in labour and birth interventions. I returned to the study site data and noted the rates of induction of labour, and elective and

emergency caesarean section births were increased for obese women, compared to other women birthing at the study site, appearing to align with wider research.

Finally, I looked at consequences of infant feeding methods specific to future obesity which uncovered the relatively recent investigations into the gut microbiome and implications for health. The infant feeding choices of breastmilk or breastmilk substitute were demonstrated to influence gut microbiome composition (Azad et al., 2013); whereas, vaginal or caesarean birth influenced milk microbiome composition (Cabrera-Rubio et al., 2012), and also infant gut microbiome species diversity (Penders et al., 2006), according to the research reviewed. This led me to acknowledge the magnitude of the topic of breastfeeding for obese women. In view of the extensiveness of perspectives in the literature, I have situated this smaller study within this much wider context. Therefore, the first chapter introduces and explores the broad scope of obesity and maternity care, including a summary of current pertinent literature, before chapter two focuses on specific literature relating to maternal obesity and reduced duration of exclusive breastfeeding.

In the early stages of the research, I reviewed data on the clinical outcomes for women who used the study site from the annual report for the locality, and cursory examination suggested there was a BMI range to: induction of labour, mode of birth, and breastfeeding outcomes. Following discussion with the midwifery clinical manager, Quality and Safety project manager, and also my research supervisor, I gained consent to display and discuss anonymised data within the study write up, for the purpose of facilitating service evaluation. I will present these initial findings in the 'Snapshot of Practice' section of the introductory chapter. With the initial intention of assessing the

need to re-evaluate breastfeeding support practices for obese women at the study site, I designed a study with a qualitative approach, to talk with obese service-users regarding their breastfeeding influencers. However, it became evident that breastfeeding influencers included antenatal and intrapartum experiences, therefore the introductory chapter summarises pertinent research on maternal obesity and is not limited to breastfeeding research. The initial design implemented the social media platform – Facebook – to facilitate contemporaneous data collection. However, following low recruitment, the design was modified to include one-to-one, semi-structured interviews with women and midwives. Data was analysed through interpretative phenomenological analysis (IPA), which is described in chapter three, ‘Methodology and study design.’ Key findings of the study have included; communication experiences in maternity care; levels of autonomy that participants experienced and maintained; identifying oneself or experience as ‘normal’; the midwifery partnership; and the experience and/or understanding of intrapartum interventions and their influence on breastfeeding outcomes.

### **The research journey**

The impetus for this research was the apparent disproportion of obese women having increased labour interventions and decreased exclusive breastfeeding rates at the study site, when compared to other women. While interventions in labour, mode of birth and breastfeeding outcomes statistics are collected separately for Ministry of Health maternity reporting, I am presenting them as interdependent outcomes in this discussion. By locating breastfeeding outcomes on what I have termed the wider ‘maternity experiences continuum,’ I aim to highlight the relevance and implications of obesity in maternity care. To do this, I depict a broader perspective on the



complications and implications of obesity in maternity care, acknowledging the physiological progression from pregnancy through to birth and breastfeeding, and accepting the potential that disruption in one, may affect others. Wishing to present a comprehensive, yet complex picture of obesity and its relevance to maternal and infant health, within the confines of a Masters level thesis, I elected to refer to complexity theory to organise material included in introductory and literature review chapters.

### **Complexity theory**

In this study, obesity and lactation are presented as parts of a complex system (Clancy, Effken, & Pesut, 2008). The implication of taking a complex system view is the acceptance of interdependent parts of 'the system'. This has included acknowledgement of non-maternity obesity drivers such as poverty and social deprivation; alongside maternity specific complications and implications of obesity such as increases in interventions and reduced breastfeeding rates, as interdependent parts of the system and worthy of note. The purpose behind taking this approach was to maintain realism within the research, rather than investigating a topic such as breastfeeding in isolation and without context. It is expected that inclusion of a broad summary of research related to maternal obesity, before the specific focus on breastfeeding research in the literature review chapter will lead to more comprehensive support for service evaluation and implications for midwifery practice, than an initial narrow focus on breastfeeding research would do.

### **Evolution of researcher perspectives**

At the commencement of the research, I approached obesity as a diagnosable state of poor health, albeit a multifaceted one. From education prior to undertaking this

research<sup>1</sup>, I considered that classification of obesity as a medical condition which could be diagnosed, would serve to reduce obesity stigma, and in turn, improve treatment or management efforts by health services at local and organisational levels. Within midwifery scope, I was aware that there were risks associated with maternal obesity, whether anecdotal or demonstrated in research, such as significantly increased rates of pre-eclampsia (O'Brien, Ray, & Chan, 2003) and late fetal demise and neonatal death (Kristensen, Vestergaard, Wisborg, Kesmodel, & Secher, 2005); which would conceivably increase levels of surveillance in pregnancy and medicalisation of labour for this demographic. From a lactation consultant's perspective, I was conscious of ways in which obesity had been demonstrated to impede successful breastfeeding, such as a delay in secretory activation (Amir, 2007; Chapman & Perez-Escamilla, 1999), and psychosocial impediments (Barnes, Stein, Smith, & Pollock, 1997). In my opinion, appreciating possible influences of obesity on the physiological processes associated with maternal and infant outcomes in maternity care would be enhanced by reviewing the impacts *of* maternity outcomes *on* women and infants in terms of exposure to obesity risk.

Undertaking this research has involved considerable immersion in related literature. Perspectives have included; association between early infant experiences and infant health outcomes, into adulthood (Whitaker & Dietz, 1998); correlation between socio-economic position (SEP) and obesity (Lee, Harris, & Gordon-Larsen, 2009; Wilkinson & Pickett, 2009); discrimination and stigma in approaches to maternal obesity (Rail, Holmes, & Murray, 2010), and association between childhood trauma or abuse

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<sup>1</sup> Nursing, midwifery and lactation consultant qualifications, and self-instigated reading of relevant research.

and adult obesity (Hemmingsson, Johansson, & Reynisdottir, 2014). The advantage of the additional research perspectives has led me to acknowledge the strong arguments for obesity as outside of individual control.

Current New Zealand maternity care is organised to minimise risk (Ministry of Health, 2007), and promote health (New Zealand College of Midwives, 2017a) to the obese mother and fetus/infant. However, discussion of a wider perspective will present reasons why current approaches are insufficient to meet requirements on individual and societal levels. I will then present this research thesis which sought to explore the perceptions of breastfeeding influencers of obese client and midwife participants. As I will go on to discuss, emergent themes were similarly reflective of a wider perspective related to service challenges and pregnancy care i.e. the woman's journey ('within the maternity care system'), not confined to breastfeeding activities alone.

## **Obesity measurements and trends**

### *Measurements of obesity*

The most utilised measurement of bodyweight is the 'body mass index' (BMI). There are other methods for the classification of body weights and sizes to rival BMI, including: skin fold thickness, body adiposity index, waist circumference and waist to hip ratio (Bergman et al., 2011). BMI is criticised for not accounting for muscle mass, bone density, gender or ethnicity (World Health Organization, 2017a). The literature reviewed defined obesity as BMI equalling or exceeding  $30\text{kg/m}^2$ , with further obesity classifications sometimes applied: - class 1 -  $30.0\text{-}34.9\text{ kg/m}^2$ , class 2 -  $35.0\text{-}39.9\text{kg/m}^2$  and class 3 - equal to or exceeding  $40\text{kg/m}^2$  (American College of Obstetricians and

Gynecologists, 2013). I will use these accepted and widely used definitions to facilitate comparisons and contrasts in the literature, despite acknowledged criticisms.

### *Obesity trends in New Zealand and globally*

At the commencement of the study, I noted the increasing obesity trends worldwide and in New Zealand. I will present them at this point to give context to the study, by indicating the scale of the issue of obesity and the implication for maternity care practices and provision. According to the World Health Organisation (WHO), in 2014, 1.9 billion adults worldwide were overweight (39% of adults), and of these, over 600 million (13% of adults) were obese (World Health Organization, 2017c). This represents an increase of over 100% in obesity levels worldwide in forty years, according to WHO figures (World Health Organization, 2017c). Additionally, the prevalence of morbid obesity<sup>2</sup> increased by 50% between 2000 and 2005, with 8% of women of reproductive age being in this category (World Health Organisation, 2014). Despite the WHO Global Strategy on Diet, Physical activity and Health (World Health Organization, 2004), there has been limited change to this trend (Swinburn, 2008).

The New Zealand Ministry of Health (MOH) also reports increasing rates of obesity. The obesity statistics for 2015/16 note that 32% of adult New Zealanders were obese at the time of the report, with a further 35% being overweight (Ministry of Health, 2017b). The report further specifies that according to ethnicity, 47% of Maori adults and 67% of Pacific adults were obese at the time (Ministry of Health, 2017b). Overall obesity in New Zealand has climbed from 27% to 32% between 2005/6 and 2015/16. The report notes that adults living in deprived areas are 1.7 times more likely

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<sup>2</sup> The term 'morbid obesity' refers to when obesity is causing negative health consequences. Sources report this as class 2 or class 3 obesity (Cedergreen, 2004)

to be obese than those who do not (Ministry of Health, 2017b). The increasing obesity rates in the New Zealand population lead me to argue for a response from maternity services with the dual focus of; effective management of maternity care specific to the needs of obese women, and a preventative focus to offset future obesity risk.

### **Maternity clinical risks noted for obese women**

I examined perspectives on birth and feeding influences on infant health in the section that follows. However, I will first provide a brief description of clinical risks that are associated with maternal obesity, that form indications for increased surveillance and obstetric management of the pregnancy and labour of the obese woman. This is to provide the basis for further examination of research demonstrating intrapartum interventions to be barriers to exclusive breastfeeding in chapter two.

#### *Complications of pregnancy*

The complications of pregnancy which are attributed to obesity, more correctly are complications of metabolic syndrome; which includes raised fasting blood sugar, hypertension and obesity as features. This means that whereas an individual with metabolic syndrome is likely to be obese, the reverse does not necessarily follow. However, for the purpose of this discussion, I will make no further critique of literature that does not distinguish between terms. I make this distinction to acknowledge a certain lack of clarity concerning obesity and clinical risks as discussed by Aphramor (2005) in her criticism of 'weight loss *equals* health improvement' belief (Aphramor, 2005). Complications associated with metabolic syndrome, and also obesity, include; gestational and type 2 diabetes, pre-eclampsia and intra-uterine growth restriction (IUGR), offering further indications for increased surveillance in pregnancy and labour

(Ministry of Health, 2007). For instance, a Canadian study of 1996 women across the BMI spectrum noted that women in the overweight and obese categories had higher incidences of pre-eclampsia and gestational diabetes, and a higher rate of labour induction of 49% in obese women versus 28.8% in the normal weight women (Vinturache, Moledina, McDonald, Slater, & Tough, 2014).

Studies note a disproportionate rate of infants with congenital abnormalities including neural tube defects, cardiovascular defects and congenital anomalies are born to obese women, compared to other women. There is limited understanding of the associated physiological mechanisms. Researchers speculate that hyperglycaemia or insufficient folate may be involved (Krishnamoorthy, Schram, & Hill, 2006). Maternal obesity is also currently associated with an increased risk of late fetal demise and stillbirth (Kristensen, Vestergaard, Wisborg, Kesmodel, & Secher, 2005). Proposed mechanisms include reduced perception of fetal movements (and therefore reduced recognition of decreased or absent fetal movements), and placental insufficiency (Bodnar et al., 2015).

### *Intrapartum complications*

Correspondingly, studies have shown obese women to experience a higher rate of interventions in labour than other women (Morken, Klungsoyr, Magnus, & Skjaerven, 2013). A retrospective analysis of 287 213 singleton pregnancies, conducted in the United Kingdom, noted that women with a BMI above 30kg/m<sup>2</sup> were significantly more likely than those with a BMI between 20-30kg/m<sup>2</sup>, to have; inductions of labour, caesarean section birth, pre-eclampsia, postpartum haemorrhage and reduced breastfeeding at discharge from hospital, compared to normal weight peers (Sebire et

al., 2001). In addition to the above-mentioned indications for increased labour surveillance, research reviews reported that maternal obesity was associated with a slower labour progress than non-obese peers, exposing obese women to increased risk of labour augmentation with synthetic oxytocin, and increased rates of caesarean birth (Arrowsmith, Wray, & Quenby, 2011; Bogaerts, Witters, Van den Bergh, Jans, & Devlieger, 2013). Commentary on this issue indicates poor uterine contractility in obese women causes labour slow progress leading to labour intervention (Homer, Kurinczuk, Spark, Brocklehurst, & Knight, 2011; Zhang, Bricker, Wray, & Quenby, 2007). An in vitro study by Moynihan et al (2006), demonstrated increased leptin at a cellular level, inhibited the contractile effect of oxytocin on uterine myometrium and hypothesized there to be correlation between increased leptin and slow labour progress in obese women (Moynihan, Hehir, Glavey, Smith, & Morrison, 2006). Other commentators query whether obesity stigma and defensive practises are influencing clinical decision making regarding risk management in the intrapartum, exposing obese women to unwarranted interventions (Furber & McGowan, 2011; Mulherin, Miller, Barlow, Diedrichs, & Thompson, 2013).

*The influence of obesity stigma in communication and language used in maternity care*

As described, obesity has the potential to present risks to pregnancy and labour that warrant surveillance exceeding that of 'low risk' pregnancy and labour surveillance (Ministry of Health, 2007). Without nullifying these indications, I will discuss in brief, the influence of obesity stigma on the language and communication in maternity obesity care, and potential effects on outcomes. Effective communication is fundamental to quality maternity care. 'The Ten Standards of Practice for New Zealand Midwives' (New Zealand College of Midwives, 2017b), are each reliant on the ability of the midwife to

communicate effectively. It is through communication that the midwifery partnership is developed and nurtured; midwifery care occurring *within* the midwifery relationship between the midwife and the woman (Guilliland & Pairman, 1995). There is no power demarcation. The routine framing of maternal obesity as a 'high-risk' condition by maternity services (Ministry of Health, 2007), has the potential to influence communication styles (Furber & McGowan, 2011), interpretation of meaning and intent, and hence impact on the midwifery partnership (Mills, Schmied, & Dahlen, 2013). This is perhaps attributable to obesity stigma providing a context not present with other high-risk conditions of pregnancy. One could speculate that obesity is subject to more stigma than other high-risk conditions due to the implication on the WHO website that it is a self-inflicted condition (World Health Organisation, 2016). Obesity stigma has led to differential interpretation of language or terms pertaining to obesity related care, by clinicians and clients, which may prove to be detrimental to the individual's maternity experiences (Rail, Holmes, & Murray, 2010), and thus, healthy outcomes.

Ways of referencing weight seem intermingled with common usage and derogatory intent. The adoption of weight related terms into the popular vernacular seem unhelpful for the obese client and clinician; presenting issues such as avoidance and the use of euphemism by the clinician (Dutton et al., 2010), increasing risks of misunderstanding and poor outcomes. From the individual's perspective, oblique language coupled with obesity stigma may lead to reluctance to be labelled as obese, or to mistrust in health services and result in reduced engagement (Puhl & Heuer, 2009).

For maternity care professionals, communication and language for obese clients present a complex issue, involving appreciation of the cultural meanings of food and



obesity, and the ability to develop a framework of helpful language within the working relationship, described by Mills (2013) as 'getting alongside' the client (Mills, Schmied, & Dahlen, 2013), and by Pairman (1995), and specific to the New Zealand maternity care system, as 'the midwifery partnership' (Guilliland & Pairman, 1995). This highlights the maternity journey as a whole, acknowledges that communication is instrumental in the co-creation and guiding of the maternity journey and midwifery relationship, and acknowledges how stigma may alter communication styles and interpretation. Simply put, obesity stigma has the potential to influence communication, interpretation of meaning and hence relationships and this may influence maternity experiences and outcomes including how breastfeeding care is delivered and understood.

*Obesity is associated with social deprivation.*

Amidst much diversity of approach and theorising about obesity causes, there seems little contradiction to one assertion – that obesity is associated with social deprivation (Heslehurst, Rankin, Wilkinson, & Summerbell, 2010). This is noted on international (Lee, Harris, & Gordon-Larsen, 2009) and national levels (Ministry of Health, 2017b). Researchers argue that poverty, high levels of social inequality and deprivation, weight stigma and discrimination is disadvantageous to the health of obese individuals, rivalling the physical state of obesity itself (Heslehurst, Rankin, Wilkinson, & Summerbell, 2010). Although not specific to maternity care practices, issues of influences of obesity stigma, social inequality and the effects on individual and population health have implications for maternity care practices and delivery; including health promotion approaches, in-home or clinic based care, frequency of midwifery visits, and local funding for services such as a lactation consultant input. Obesity commentaries suggest the escalation of 'fast food' availability and food cost

comparisons, and the development of monoculture farming (Swaminathan, 2014), as factors which may have linked obesity to social deprivation. Maternity related influencers to obesity associated with social deprivation have included the worldwide aggressive marketing of breastmilk substitutes by formula companies such as Nestle, which culminated in the Nestle boycott in 1977 (Sasson, 2016), and The International Code of Marketing Breast-Milk Substitutes was adopted in 1981 by the World Health Assembly (Myres, 1981).

### *Summary*

Obesity appears to be multifaceted. It has biological and social determinants. In my opinion, it is therefore important for New Zealand maternity services to have a comprehensive appreciation of both, to facilitate effective planning of care. Clearly this is an imperative to the health and positive maternity experience of the obese woman. I will now go on to describe how pregnancy and labour outcomes become determinants of infant health and breastfeeding outcomes.

### **Early infant experiences and proclivity to obesity in adulthood.**

The intention to explore breastfeeding challenges experienced by obese mothers, leads me to indicate research threads concerning implications for the infants relative to the experiences of obese mothers. By doing so, I intend to provide justification for this inquiry. I will confine the discussion to obesity related topics, not exploring other benefits of breastfeeding. This will involve consideration of species specificity and infant gut microbiome influencers and impacts to future obesity, concluding with a review of the theoretical cycle of obesity.

### *The influence of adverse intrapartum and infant feeding experiences on future obesity*

Various perspectives hold obesity to be more than a state of poor health (Dixon, Egger, Finkelstein, Kral, & Lambert, 2015; Wright, Fraser, & Maher, 2010). It is linked to other conditions, such as metabolic syndrome, social deprivation and social stigma, all of which have implications for the obese pregnant/labouring or breastfeeding woman; and therefore, implications for maternity care provision on organisational and individual levels. I now turn to early infant experiences and their influence on future obesity. This will include discussion on the influence of the intrauterine environment, species specificity of infant feeding, and the impact of early infant experiences on obesity risk.

### *The influence of the intrauterine environment on future infant health*

I make brief mention of the epigenetic theory of obesity inheritance due to my assertion that obesity is part of a 'complex system', it is unlikely to result from energy expenditure disequilibrium (Harcombe, 2010); and to highlight the relevance of maternity care provision in obesity response planning. The 'Barker Hypothesis' (1992) was influential in leading understanding in the epigenetic origins of adverse states of health such as obesity (Factor-Litvak, 2013). Also referred to as the 'Fetal Origins Hypothesis', it posits that adverse intrauterine environments alter metabolism functioning and inflammatory responses through epigenetic mechanisms, activating or deactivating genes. This has been proposed to have implications for appetite satiety responsiveness, and how the body stores or uses nutrients, and has subsequent long-term health consequences (including obesity) for the infant (Thomas, 2015).

### *Species specificity of human infant feeding and its relevance in obesity dialogues*

The production of milk by mammalian mothers to feed their young, is species specific, referring to the precise production of milk composition specific to the needs of the infant (Riordan & Wambach, 2010). The requirements of different species, and different human individuals, vary considerably at birth. Significantly, calves need rapid muscle mass development, (i.e. requiring bovine lactation, from which breastmilk substitute often originates (Battersby, 2015); human babies require nutrition to promote brain development (Belfort et al., 2016; Tawia, 2013). Human milk, from the infant's own mother is species specific, and has been shown to be specific to the infant's requirements in terms of gestational age at birth (Thibeau & D'Apolito, 2012), the infant's actual age, and health state of the infant and mother, such as infection (Hassiotou & Hepworth, 2013). Writers such as Le Huerou-Luron et al (2010), who have examined infant feeding methods and resultant health outcomes propose the lack of species specificity of breastmilk substitutes as an influence on increased level of obesity in studied populations(Le Huërou-Luron et al., 2010).

### *Summary of the role of gut microbiota in obesity*

The human gut microbiome refers to the microbial constituents of the human intestine (Ley, Turnbaugh, Klein, & Gordon, 2006). Recent studies suggest association between the gut microbiome and metabolic function/dysfunction, theorising the microbiome determines how the body uses or stores energy (Tilg & Kaser, 2011).

Specific to maternity care, researchers are noting implications of; mode of birth, skin to skin with the mother, and infant feeding methods, to the infant microbiome composition and diversity. I have simplified the terms for this discussion.

Bifidobacterium longum infantis and bacteroidetes will be referred to as beneficial bacteria; clostridium difficile, methicillin-resistant staphylococcus aureus (MRSA) and pathogenic E. coli will be referred to as pathogenic bacteria.

*The influence of mode of birth and infant feeding on the infant gut microbiome.*

There is research demonstrating differential health outcomes related to mode of birth (M. B. Azad et al., 2013; Neu & Rushing, 2011) and this has included risk of obesity (Mueller et al., 2015). Studies are demonstrating that infants with a gut microbiome resulting from a planned caesarean section have a greater susceptibility to obesity (Dogra et al., 2015). Researchers have noted that the mode of birth plays a significant role in the gut microbiome species and diversity acquired by the infant at birth. Infants born vaginally are more likely to acquire beneficial bacteria from maternal vaginal and faecal flora, and infants born by elective caesarean section are more likely to acquire pathogenic bacteria from hospital surroundings (Musilova, Rada, Vlkova, Bunesova, & Nevoral, 2015).

Infant gut microbiome is also influenced by feeding methods. Breastmilk is seen to cause beneficial bacteria to thrive. Notably, breastmilk is known to contain oligosaccharides, which have a prebiotic effect on the microbiome (Matamoros, Gras-Leguen, Le Vacon, Potel, & De La Cochetiere, 2013), and not digested by the infant. Conversely, formula fed infants have been noted to have reduced beneficial bacteria and increased pathogenic bacteria in their microbiome make-up. In 2017 research by Pannaraj et al., the effects of breastmilk on the infant gut microbiota was noticeable after the introduction of solid food, and was found to suppress gut bacteria associated with obesity (P. Pannaraj & Cerini, 2017).

The research concerning the influence that the gut microbiome has on individual health is promising. Researchers are noting that mode of delivery (vaginal birth or caesarean section), skin to skin at birth and beyond, and method of infant feeding (formula supplementation or breastmilk) all have an impact on the gut microbiome, and hence the long-term health of the individual, including susceptibility to obesity. It would then be evident that optimal care of the obese woman through the maternity period is significant for offsetting obesity risks. In the face of the statistical data demonstrating that obese women have a higher risk than non-obese peers of ineffective labour, interventions in labour, surgical or instrumental assisted birth, alongside reduced exclusive breastfeeding, their care needs to be preventative and long-term in its application and design, to optimise the gut microbiome of the infant and the health of the mother.

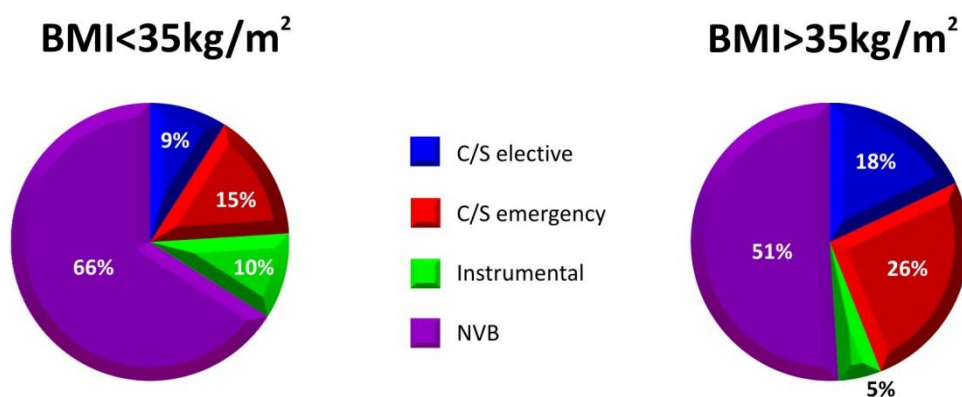
## **Snapshot of practice**

Having reviewed global and national obesity trends, the implications of obesity on maternity care and outcomes; and the influence of maternity outcomes (such as mode of birth and infant feeding) on future obesity, I reviewed maternity outcomes for the study site detailed in the Annual Report for the locality. At the suggestion of my research supervisor, I approached the midwifery manager and the Quality and Safety project manager for permission to discuss the anonymised data within the thesis which was granted. (Midwife manager, personal communication, March 12, 2015). The categories I reviewed included;

- Mode of birth – vaginal, instrumental and surgical,
- Inductions of labour,

- Breastfeeding intensity/infant feeding choices.

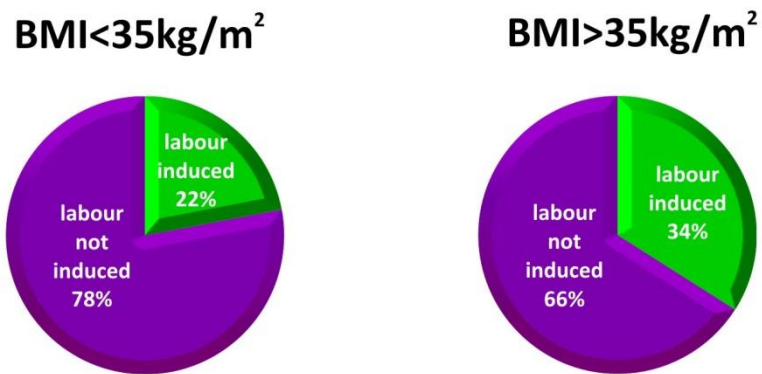
This data<sup>3</sup> was cursory only, with no controls or significance testing applied. The unit birth rate ranges from 1800-1900 births per year on average. All comparisons presented, use the BMI of 35kg/m<sup>2</sup> (class 2 obesity), as the variable. The following figures relate to the study site for the year 2014.



**Figure 1 - A Comparison of Modes of Birth rates for the study site in 2014, for women with a BMI above and below 35kg/m<sup>2</sup>**

In this period, women with a BMI above 35kg/m<sup>2</sup> had a normal birth rate of 51%, an emergency caesarean section rate of 26%, and an elective caesarean rate of 18% and an instrumental/assisted birth rate of 5%. For the same period, women with a BMI below 35kg/m<sup>2</sup> had a normal birth rate of 66%, an emergency caesarean rate of 15%, an elective caesarean rate of 9% and an instrumental birth rate of 10%. For comparison, the MOH published the national average modes of birth rates to be; normal birth - 64.8%, caesarean section - 25.9%, instrumental assisted birth - 9.3% (Ministry of Health, 2015).

<sup>3</sup> Following discussion with my research supervisor, as a means of preserving anonymity of the maternity unit, I have not included overall cohort numbers in this discussion.

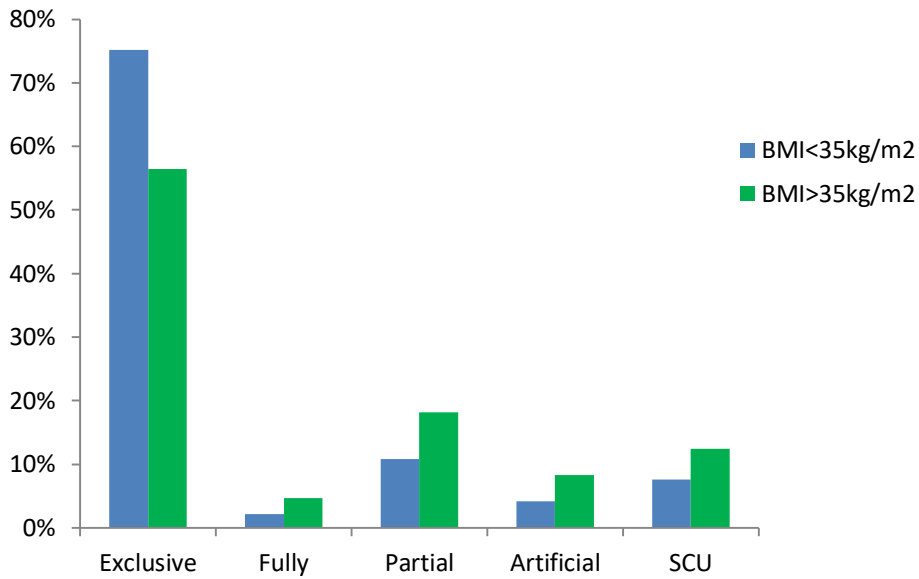


**Figure 2 - A Comparison of Inductions of labour rates for the study site in 2014, for women with a BMI above and below 35kg/m<sup>2</sup>**

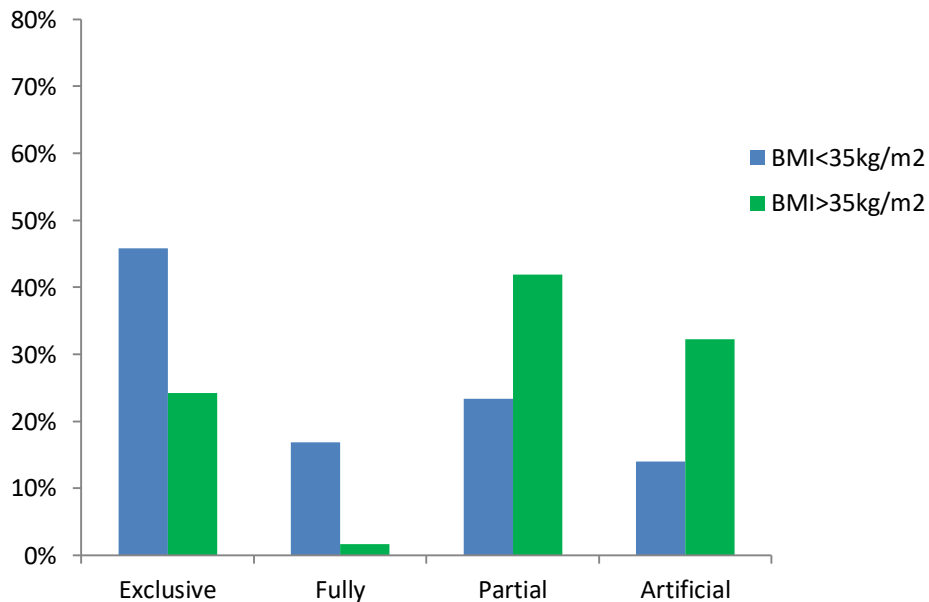
Women with a BMI >35kg/m<sup>2</sup> had a higher rate of induction of labour in 2014, than their lower BMI counterparts at 34% and 22% respectively. Clinical indications for inductions of labour were not accessed due to the time constraints and scope of the study. This would be an interesting line of enquiry to pursue, to look at clinical indications for induction and subsequent breastfeeding outcomes.



**Breastfeeding outcomes for the study site in 2014 at discharge from postnatal ward, and at six weeks discharge from maternity care**



**Figure 3a Comparison of breastfeeding outcomes at discharge from postnatal ward**



**Figure 3b Comparison of breastfeeding outcomes at six weeks postpartum**

For women whose BMI was above 35kg/m<sup>2</sup>, 57% were exclusively breastfeeding at discharge from hospital, compared to 75% of the women with a BMI below 35kg/m<sup>2</sup>. Correspondingly, the partial breastfeeding rate for women with a BMI above 35kg/m<sup>2</sup> was higher than for lower BMI peers at 18% compared to 11%. The percentage of babies in the Special Care Baby Unit (SCU), when their mothers were discharged from inpatient maternity care was 12% for the higher BMI group, compared to 8% of the lower BMI group.

At discharge from maternity care services at six weeks postpartum, the lower BMI group's exclusive breastfeeding rate had dropped from 75% to 46%; their fully breastfeeding rate had risen from 2% to 17%; partial breastfeeding had risen from 11% to 23%, and artificial feeding in this group had risen from 4% to 14%. For the women in the higher BMI group, exclusive breastfeeding dropped from 57% to 24%; fully breastfeeding dropped from 5% to 2%; partial breastfeeding rose from 18% to 42% and artificial feeding rose from 8% to 32%. There were no babies still inpatients in SCU at six weeks postpartum, in either group. In terms of comparing the two BMI groups at six weeks postpartum; exclusive breastfeeding is 46% and 24%; fully breastfeeding is 17% and 2%; partial breastfeeding is 23% and 42% and artificial feeding is 14% and 32% for lower and higher BMI groups respectively.

As acknowledged, these figures were obtained to provide a context to the study, and although no significance testing or controls for confounding factors applied, the data gives cause for further scrutiny. Maternity outcomes for obese women do not appear equitable with non-obese women from cursory examination, which, as I have discussed, may go on to have implications for the infants' future health.

## How much control do individuals have over their obesity?

Obesity is commonly understood to stem from personal health choices involving too little exercise versus excessive energy consumed. The World Health Organisation and Ministry of Health indicate this on their respective websites (Ministry of Health, 2016; World Health Organisation, 2014a). This is refuted by many (Clemente, Ursell, Parfrey, & Knight, 2012; Rail, Holmes, & Murray, 2010; Ridaura et al., 2013), and Harcombe (2010) explains, this comes from a misapplication of the laws of thermodynamics to the physiology of the human body (Harcombe, 2010).

Obese women are seen to require increased surveillance in pregnancy and labour (Ministry of Health, 2007), and while this appears warranted, it does not seem to be without an adverse effect on the newborn and ongoing obesity risk. Implications of the intrauterine environment, interventions in labour and birth, and reduced breastfeeding have been demonstrated to increase the risk of obesity to the infant.

Within the *sphere of interest* of this study, research has demonstrated obesity to be a complex issue. The literature draws parallels between the start of the international obesity trend incline in the 1970s (Swinburn, et al., 2011) and changes to food processing occurring at the time (Swaminathan, 2014). In maternity related trends, breastfeeding rates in New Zealand were low at the end of the 1960s with only 47% of women ever breastfeeding (McBride-Henry, 2010). The research pertaining to gut microbiome composition and diversity provides tentative explanations for how these societal changes have impacted on health trajectories. Research linking long-term discrimination with chronic low-grade inflammation provides further possible explanation for obesity perpetuation (Kendall-Tackett, 2007). All above mentioned

research threads are increasing the evidence base which suggests obesity propensity results from gut microbiome composition, which is influenced by intrauterine environment (including maternal health) and early infant experiences.

Having summarised perspectives determining the role that the infant gut microbiome plays in obesity development and variables which included mode of birth and infant feeding, we begin to note that understanding obesity in maternity care as a wider picture is essential for a complete understanding. The research demonstrates that physiological processes – normal labour, vaginal birth and optimal exclusive breastfeeding determine gut microbiome, which impacts on metabolism functioning. Furthermore, research examining the pregnancy, intrapartum and breastfeeding experiences of obese women reveals shortfalls in those areas which influence microbiome transfer to the infant. I suggest that due to risks occurring in the intrauterine environment, and implications of birth and infant feeding methods on obesity proclivity, maternity services are in an optimal position to facilitate change.

## **Summary**

The next chapter will review the research examining the reduced duration of breastfeeding noted in obese women, as this was also among the superficial findings of the study site data. Summary of the points raised this far, argue that the adopting of a long-term perspective by maternity services would be advantageous in terms of the long-term health of the infant; and raises arguments for obesity being outside of the control of the individual. This, along with the national obesity trends, give cause to question the health trajectories of the local community, and directions maternity care services may develop to meet the needs of the obese population, including levelling or

reducing the rising obesity trend. Having identified lactation and breastfeeding as one such challenge, I will go on to conduct a narrative literature review examining reduced duration of breastfeeding experienced by obese women.

The research question asks, “What are the barriers and facilitators to exclusive breastfeeding for women with a BMI equalling or exceeding 35kg/m<sup>2</sup>?” aiming to elucidate on breastfeeding determinants experienced by study participants. An initial inclusion criterion for study participation was, ‘service-user with a BMI of 35kg/m<sup>2</sup> or above, who intended to breastfeed.’ However, in a subsequent iteration, midwives who had experience of caring for this demographic were invited to participate, primarily due to lower than anticipated recruitment of service-users. Subsequent study aims include producing information to inform service review at the study site, to improve breastfeeding outcomes.

The next chapter of the thesis is a review of the perspectives on reduced duration of exclusive breastfeeding for obese women. The literature review has a narrative style to facilitate encompassing a wide perspective and is divided into three sections. The first looks at the hormonal influences on lactation, and changes to this which is demonstrated to relate to obesity. The second looks at the effect of labour interventions on lactation. This section encompasses how labour interventions alter lactational hormone pathways irrespective of BMI; and how obesity may alter labour hormonal pathways, increasing the comparative risk of interventions and increased surveillance in labour, proceeding to affect lactation. The third section reviews literature pertaining to the breastfeeding activities of obese women; and this section

looks at breastfeeding support practices and psychosocial influences on breastfeeding for obese women.

Chapter three, the study design chapter, will describe how the study was carried out, the methodology selection and ethical considerations. I will go on to describe recruitment processes and challenges, and study methods and analytical procedures. I briefly describe IPA stages. Following analysis of the data, several themes emerged including: - communication, autonomy, normality, the midwifery partnership, the experience of interventions and the effect of interventions on lactation. I will introduce and describe these in the Findings chapter, and discuss them further in the concluding chapter, when I will also deliberate the implications of the findings for the lactation and experience of breastfeeding for client participants, and implications for midwife participants. I will then make suggestions for further research avenues to pursue.

Having reviewed the wider perspectives in obesity and maternity care discourse, I will now reduce the focus to breastfeeding perspectives; specifically, factors affecting the duration of exclusive breastfeeding in obese mothers.

# CHAPTER TWO: LITERATURE REVIEW

## Introduction

Chapter one explored obesity as an emergent human phenomenon; acknowledging historic obesity drivers such as changes to food production means, the development and increasing availability of 'fast food' in an international context, and the increasing availability of formula supplementation. Examination of research and reports which discussed causes and consequences of obesity within maternity services followed, highlighting the position of maternity care practices and outcomes in obesity discourse. Chapter one concluded with a review of maternity outcomes for the study site, for the year 2014, and a BMI range was noted from cursory examination. Following review of material specific to maternity outcomes associated with obesity, I summarised the following points;

- Women with obesity are noted to have a higher rate of interventions in labour and birth, compared to non-obese peers (Sebire et al., 2001).
- Women with obesity are noted to have reduced initiation and duration of exclusive breastfeeding than non-obese peers (Babendure, Reifsnider, Mendias, Moramarco, & Davila, 2015).
- Interventions or disruptions to physiological processes in the intrapartum, and infant feeding methods are implicated in short and long-term infant health.

This chapter will review the literature exploring factors that influence the duration of exclusive breastfeeding in the context of maternal obesity. I will then draw from themes

discussed in Chapter one to illustrate how this section of research is positioned in the wider context of maternal obesity and population health.

## **Breastfeeding duration recommendations**

Recommendations for exclusive and continued breastfeeding by the New Zealand Ministry of Health (MOH), align with those set by the World Health Organisation (WHO); exclusive breastfeeding for six months, and continued breastfeeding alongside complementary food for two years and beyond (National Breastfeeding Advisory Committee of New Zealand., 2009; World Health Organization, 2017b). These recommendations were used within the reviewed research as criteria for identifying whether exclusive breastfeeding was reduced.

## **Choosing a Literature Review style to suit the study**

In considering the most advantageous way to present a review of the related literature that met my aim of displaying the broad range of factors impacting on obese pregnant or breastfeeding women, (which could be considered to be breastfeeding influencers,) I chose to attempt a narrative literature review; specifically, a narrative overview. From the instructive discussion by Green (2006), I interpreted the principle of the narrative literature review to extend to addressing of a wide perspective of themes with the purpose of illuminating a broad overview and presenting a starting place from which to move forward with the study, and a more focussed discussion (Green, Johnson, & Adams, 2006). This interpretation of the narrative review suited my purpose, my questioning of the subject matter and my existing understandings of obesity and breastfeeding research. There were a variety of perspectives to review; including approaches examining breastfeeding duration as a determinant for obesity, and others



which examined obesity as a determinant for breastfeeding duration. This variation, together with criticism from writers such as Dixon (2015), and Aphramor (2005), regarding the lack of clarity of approach to obesity knowledge, lead me to argue that presenting a narrative literature was an appropriate choice (Aphramor, 2005; Dixon, Egger, Finkelstein, Kral, & Lambert, 2015).

## **Search strategy**

Literature sources were obtained by searching PubMed, CINAHL and PsychInfo databases using the search terms “breastfeeding,” “lactation” and “maternal obesity”. Inclusion criteria were original research and meta-analyses which reported on breastfeeding behaviours, intent, initiation, duration, intensity or exclusivity in women with obesity. I included research published in English from 1992 to the present date. Following these initial searches, I scanned reference lists on obtained articles for further relevant research. Considerable research was gathered in this way. A prolific volume of research was uncovered. I refined the inclusion criteria to ‘reduced breastfeeding.’ The search of ‘reduced breastfeeding duration’ elicited literature pertaining to breastfeeding activities, hormonal activities, and consequences of labour interventions.

The literature expounded a variety of breastfeeding challenges experienced by women with obesity. Although researchers are beginning to investigate the effect that paternal obesity has on child health, I did not include it in this literature review.

## **The duration of exclusive breastfeeding in the context of maternal obesity**

I have divided the literature review into three sections for ease of understanding, these include:

- Hormonal activities – which referred to the actions of lactational hormones, and disruption proposed to relate to obesity.
- Labour interventions – which referred to the increased rates of pregnancy and labour interventions experienced by obese women, and the potential of influence to lactational hormones.
- Breastfeeding activities – which referred to breastfeeding support and psychosocial influences on the mother in initiating or continuing with breastfeeding.

I will discuss each in turn and conclude with a summary which will include reference to issues raised in chapter one.

### **Factors effecting endocrine control of lactation**

Compiling a narrative which examines the hormonal disruptions or complications associated with breastfeeding for obese women, necessitated a summary of normal lactational hormone processes. Successful lactation is reliant on optimal endocrine functioning. Endocrine control of lactation begins approximately 16-22 weeks into pregnancy, with secretory differentiation (Riordan & Wambach, 2010). A gradual shift

from endocrine to autocrine<sup>4</sup> control begins between day three and nine following birth (Riordan & Wambach, 2010). Omitting mammogenesis<sup>5</sup>, Table 1 summarises hormones required for successful lactation, and includes complications and inhibitive factors. I have noted when obesity has been noted as a complication.

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<sup>4</sup> Autocrine control refers to galactopoiesis and is the maintenance of lactation by the supply and demand feedback mechanism (Riordan & Wambach, 2010).

<sup>5</sup> Mammogenesis, or breast development, begins in utero, approximately the fourth week of gestation and concludes in puberty (Riordan & Wambach, 2010).

Table 1. Compiled with reference to Riordan & Wambach (2010) and Babendure et al.,(2015).  
(Babendure, Reifsnider, Mendias, Moramarco & Davila, 2015; Riordan & Wambach, 2010)

Hormone	Action in Pregnancy	Function after birth	Complicated or Inhibited by
<b>Prolactin</b>	Levels increase in pregnancy Stimulates cell differentiation Ductal and alveolar proliferation	-Increases in immediate postpartum and then in response to suckling -Controls milk synthesis - stimulates mammary tissue -Principle hormone in lactation maintenance -Inhibits ovulation -Infrequent or ineffective suckling will not	-Inhibited by estrogen -Inhibited by progesterone -Sheehan's Syndrome -Retained placenta prevents withdrawal of progesterone -Cigarette smoking / alcoholism -Caesarean section birth associated with lower Prolactin during feeding -Obesity associated with reduced initial release of prolactin postpartum.
<b>Oxytocin</b>	Required for cervical dilatation and uterine contractions	Increases in response to suckling causing contraction of myoepithelial cells - initiating milk ejection.  -Uterine involution  Has a role in maintenance of lactation	-Stress (obesity associated with chronic stress) -Leptin (obesity associated with increased leptin) -Caesarean birth associated with fewer oxytocin pulses (obesity associated with increased Caesarean birth) -Use of synthetic oxytocin - potential to desensitise oxytocin receptors (obesity associated with increased inductions of labour, and labour)
<b>Progesterone</b>	Stimulates alveolar and ductal development and proliferation in breast	Rapid withdrawal following birth of placenta triggers secretory activation	PCOS can result in reduced progesterone and insulin resistance. (obesity is a feature of PCOS)
<b>Cortisol</b>	Involved in differentiation of alveoli	Excess is associated with delay in secretory activation	Research has mixed findings when examining relationship between cortisol and obesity. However cortisol secretion has been found to be raised in obese individuals.
<b>Insulin</b>	High levels cause: -In prepuberty - Overweight Hypertrophy of breast tissue -In postpuberty -	-Breasts become sensitised to insulin -Involved in nutritional delivery to the breast -Involved in up-regulation of protein and fat synthesis in milk	-Obese women have a higher rate of gestational diabetes than general population.  -Type 2 and GDM leads to insulin resistance & over production of insulin feeding androgens
<b>Estrogen</b>	Levels increase in pregnancy causing pituitary to double in size Drives prolactin	Levels reduce after birth	
<b>Human Placental Lactogen</b>	- increases in pregnancy - increases breast volume		
<b>Thyroid Hormones</b>			<b>Hypothyroid increases risk of:</b> -anaemia -pregnancy induced hypertension -PPH (all are risk factors for delay in secretory activation)  <b>Hyperthyroid increases risk of:</b> -preterm labour -IUGR -PET -Overproduction of milk -hyperemesis -Inhibits MER
<b>Androgens</b>	Prepregnancy initiate puberty slows breast growth  hyperandrogenism - -reduces glandular tissue in breast		-Decreases prolactin -Decreases lactation -Implicated in PET and IUGR  Obesity is associated with increased testosterone

Normal control of lactation pertains to endocrine functions, referring to pituitary and thyroid produced hormones; and autocrine control, referring to local milk removal feedback system, otherwise referred to as the *supply and demand response* (Riordan & Wambach, 2010). There is substantial research examining lactation from the perspective of hormonal influences.

Chapman et al., (1999) conducted a quantitative longitudinal study to identify factors which affected women's perceived onset of lactation. They interviewed 192 women with differing infant feeding intentions and found, lack of suckling at the breast, maternal obesity, emergency caesarean birth and prolonged labour, were significantly correlated with delayed secretory activation (D J Chapman & Perez-Escamilla, 1999). Nommsen-Rivers et al., (2010) in their quantitative study of 431 women, observed a dose-responsive relationship between increasing BMI and delay of secretory activation, independent of other risk factors. However, prolonged labour and use of synthetic oxytocin were also noted as independent risks for delayed secretory activation in this study (Nommsen-Rivers, Chantry, Peerson, Cohen, & Dewey, 2010).

Research implicates reduced prolactin production as a significant impediment to timely secretory activation in obese women. Rasmussen et al. (2004) measured lactational hormones levels in a quantitative study of 40 mothers of varying BMIs at 48 hours and 7 days postpartum. They found only prolactin to be significantly reduced in the obese mothers compared to other participants (Rasmussen & Kjolhede, 2004). Reduced prolactin response to suckling, reduced nipple stimulation and nipple oedema found in obese mothers when compared to non-obese mothers, were found to be strongly associated with delayed secretory activation (Hilson, Rasmussen, & Kjolhede,

2004; Rasmussen, Hilson, & Kjolhede, 2002)); indicating the prolactin pathway is altered in obese women.

However, in a quantitative study of 37 women by Nissen et al. (1996), serum quantities of lactational hormones were measured and compared by vaginal or caesarean births. In this study, both prolactin and oxytocin pathways were implicated. Participants who had a caesarean birth were significantly less likely to release oxytocin in the pulsatile rhythm optimal for an effective milk ejection reflex (MER), and less likely to have a rise in prolactin at 20-30 minutes after onset of breastfeeding (Nissen et al., 1996); demonstrating that either caesarean section birth, or disturbance of the physiological processes which culminate in vaginal birth, impacted on two hormones essential for lactation in study participants. This study notes there are implications for milk production and milk removal from the breast, therefore questioning endocrine and autocrine functioning.

Research exploring consequences of a delay in secretory activation demonstrate a reduced duration of exclusive breastfeeding as a significant finding. A quantitative study by Brownell et al. (2012), evaluating the relationship between a delay in secretory activation and exclusive breastfeeding duration, reviewed 2491 mother/infant dyads who initiated breastfeeding, recording breastfeeding status at four weeks postpartum. Results demonstrated a delay in secretory activation significantly correlated with reduced exclusive or any breastfeeding, although confounding factors such as prior experience of breastfeeding were acknowledged (Brownell, Howard, Lawrence, & Dozier, 2012).

These studies posit that obesity has the potential to impede the necessary production of lactational hormones, delaying secretory activation. Other studies note a delay to secretory activation as a risk factor for the premature curtailment of exclusive breastfeeding, suggesting a cascade effect. I will now turn to research exploring the influence and implications of interventions in labour and birth.

## **Interventions in labour and lactational consequences**

Studies demonstrate that women with obesity have an increased incidence of inductions and augmentations of labour (Cedergreen, 2004). Theoretical explanations presented include a reduced number of oxytocin receptors to maintain sufficient uterine contractions, and defensive practise and the routine medicalisation of maternal obesity (Kerrigan, Kingdon, & Cheyne, 2015).

There is considerable research examining labour outcomes or progress and subsequent lactation. Lactation is a direct progression from labour and birth, and oxytocin is instrumental in all three physiological processes. I will review studies which examine labour interventions and potential consequences to lactation and note the increased level of interventions experienced by obese women when compared to non-obese peers. Amir (2007) undertook a research review investigating breastfeeding intent, initiation and duration amongst obese women. Amongst the findings; health issues such as diabetes and PCOS, pregnancy and labour complications necessitating interventions, and having large breasts - risking poor positioning and attachment of the infant to the breast, were all noted to obstruct lactational hormones. These were noted to be over-represented in obese women, and reveal implications for secretory activation and galactopoiesis (Amir, 2007). Additionally, the study by Nissen (1996), mentioned

earlier, revealed correlation between caesarean birth and suboptimal expression of both oxytocin and prolactin. This raises the question of whether caesarean birth disturbs necessary hormonal pathways, or the lack of vaginal birth renders hormonal pathways incomplete (Nissen et al., 1996).

In their 2013 research analysis, Bogaerts and colleagues reviewed labour onset and progression in obese women. They found higher insulin and leptin resistance, increased inflammatory markers and higher stress levels in obese participants. Within their analysis, obese women had increased rates of longer gestations and slower labour progress than other women. Researchers hypothesised that the hormonal differences noted in obese participants inhibited uterine contractility (Bogaerts, Witters, Van den Bergh, Jans, & Devlieger, 2013). Additionally, in the research analysis of 49 studies to investigate resource implications attributable to maternal obesity by Heslehurst (2008), preterm labour, post maturity, caesarean section and instrumental birth were found to be increased for obese women in studied populations (Heslehurst et al., 2008). The analysis concluded that obese women had a higher level of interventions in pregnancy than other women – such as increased scanning, labour and birth, and admissions to the neonatal intensive care unit; resource and cost implications were calculated from the discrepancies (Heslehurst et al., 2008).

Furthermore, research and analysis questions the implications of the use of synthetic oxytocin on breastfeeding success. In his 2013 research review Michel Odent, postulates that high concentrations of synthetic oxytocin desensitised oxytocin receptors in the breast and additionally, disrupted hormonal responses to suckling (Odent, 2013). Bell (2013) conducted a quantitative study of 47 infants and found that



infants exposed to synthetic oxytocin had reduced pre-feeding cues at 1-hour post birth compared with non-exposed infants (Bell, White-Traut, & Rankin, 2013).

The literature demonstrates that interventions in the intrapartum, including caesarean section and use of synthetic oxytocin were related to inhibition of lactational hormonal pathways, irrespective of maternal obesity. Other research demonstrated that maternal obesity correlated with an increased level of intrapartum interventions. These findings led me to question whether the influence of obesity, and interventions in labour, on lactation, were cumulative. The literature search did not unearth research addressing this question. I will now review literature exploring how breastfeeding activities in the context of maternal obesity, have been noted to impact on breastfeeding duration.

## **Breastfeeding activities pertaining to obese women and implications for duration of exclusive breastfeeding**

In this section I will note research which has examined how factors that I have inclusively named 'breastfeeding activities' have influenced the breastfeeding duration of obese women. This will include psychosocial concerns and maternity care experiences.

### **Psychosocial factors affecting breastfeeding duration in women with obesity**

Researchers using qualitative methods have explored psychosocial barriers to breastfeeding, reported by obese women. Keely et al., (2015) conducted an interpretative qualitative study of 28 obese women in the United Kingdom (UK) to investigate barriers to exclusive breastfeeding for obese women, and experiences of

breastfeeding support. Participants reported several factors they experienced as barriers to breastfeeding both in hospital and at home. These included difficulties in achieving satisfactory privacy for breastfeeding; which the researchers linked to body image issues and anxieties regarding nursing in public, heightened by latching difficulties (Keely, Lawton, Swanson, & Denison, 2015). Partner opinion or advice was experienced by participants as influential in their decision to cease breastfeeding. Women in this study reported a perceived reduced milk supply, insufficient for their infant's requirements, (or as a concern of their partner), as influential in their decision to use formula milk. However, in spite of breastfeeding difficulties, researchers found breastfeeding support services underused by this cohort, which they hypothesised to be due to the preference for family support or reluctance to breastfeed in public (Keely et al., 2015).

In 2012, Hauff and Demerath conducted a quantitative study of 239 women to explore the influence of body image on breastfeeding duration for obese and overweight women. Of 239 participants, 33% were overweight or obese. There was no BMI range to breastfeeding duration intentions reported by participants. Overweight and obese participants were found to be significantly more likely to have a shorter than planned breastfeeding duration in this study, citing determinants including poor body image and nursing in public concerns (Hauff & Demerath, 2012).

In a 2014, Hauff and colleagues conducted a longitudinal cohort study of 2824 woman comprising of 1226 under/normal weight women, 650 overweight women and 568 obese women. Data was gathered by administration of one questionnaire in the antenatal period, and ten questionnaires in the postnatal period, over the course of

twelve months. This study identified BMI to be significantly associated with education, income status, ethnicity and infant birth weight. Obese women in this study were more likely than others to have lower self-efficacy around breastfeeding and fewer friends that had breastfed (Hauff, Leonard, & Rasmussen, 2014). Researchers found these factors to put obese participants at greater risk of early cessation of breastfeeding than other participants.

Contrary findings were reported by Zanardo and colleagues who undertook a prospective case-control study of 25 obese women and 25 normal weight women to investigate relationship between eating disorders and breastfeeding practices in obese mothers. Their research found that while the obese group had increased body dissatisfaction and eating disorder scores, the breastfeeding duration was longer than for the normal weight group (Zanardo et al., 2014).

Although not a universal finding, there are studies indicating that obese women report psychosocial issues as barriers to breastfeeding duration. These have included; notions of body image, privacy and nursing in public concerns, and social issues including the number of friends or family members who have breastfed, and partner support or attitude. I will now review the literature exploring the influence of maternity care experiences on breastfeeding duration.

### **Maternity care practices**

There are few studies examining breastfeeding support practices with maternal obesity as a variable, noting consequences to breastfeeding duration. Therefore, included in this section are studies examining maternity care practices related to maternal obesity, and the reception by obese women.

In a 2016 quantitative analysis conducted in the United States of America (U.S.), Kair and Colaizy accessed the PRAMS<sup>6</sup> data from 2004 – 2008, inclusive of three states of U.S. to review breastfeeding practises experienced by obese mothers compared to normal weight mothers. Following adjustment for co-variables, results demonstrated that obese women had lower odds than other participants of: initiating breastfeeding, receiving information about breastfeeding, receiving staff assistance with breastfeeding, breastfeeding in the first hour following birth, being provided with community breastfeeding resource information; and increased odds of pacifier use in hospital. They concluded that obesity stigma influenced postpartum care and was a determinant for breastfeeding outcomes for obese women in their analysis (Kair & Colaizy, 2016).

A 2013, quantitative study conducted in Australia by Mulherin and colleagues, comprised of two separate study strands involving 627 client participants in the first strand, and 248 final year student midwives or medical students within their final two years, in the second strand. The first strand aimed to explore the relationship between client participant BMI and perception of treatment by health professionals; the second explored the attitude towards obese mothers by student midwives and medical students. Both strands were conducted by the administration of a survey. Findings of this investigation confirmed the researchers' hypotheses that; increasing BMI correlated with poorer perceived quality of maternity care specific to the postpartum period, and student participants had less positive perceptions of maternal self-care, and poorer attitudes towards caring for the obese woman compared with other women.

Triangulation of the data led researchers to conclude that weight stigma was prevalent

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<sup>6</sup> PRAMS is the abbreviation for the Pregnancy Risk Assessment Monitoring System administered by the United States Centers for Disease Control and Prevention (CDC) (Kair & Colaizy, 2016)

in maternity care, underpinning the care of the obese participants and their perception of it; however, implications for outcomes were not explored (Mulherin, Miller, Barlow, Diedrichs, & Thompson, 2013).

Furber and McGowan (2011), conducted a qualitative study of 17 obese women in the U.K. Participants were interviewed on two occasions, once in pregnancy and once in the postpartum. Thematic analysis revealed two core themes; *'humiliation of being pregnant when obese,'* and, *'the medicalisation of obesity when pregnant.'* Participants in this study perceived their care poorly, considering it substandard and related to their obesity. Researchers concluded that while obesity presented risks to the pregnant woman and fetus, the psychology of obesity is complex and should not be discounted when providing care for the obese woman (Furber & McGowan, 2011). Study limitations acknowledged the small geographical area and primarily Caucasian participants.

## **Summary**

In chapter one, obesity was introduced as a complex health condition which has its roots in changes food production processes and 'fast food' availability, demographic variables such as socio-economic status and education levels, and the intrauterine environment, birth experience and early infant experiences such as skin to skin and infant feeding methods. Additionally, exclusive breastfeeding for the recommended duration is acknowledged as protective of obesity, albeit to varying degrees. Review of different areas of research pertaining to maternal obesity and breastfeeding was undertaken to demonstrate the complexity of the phenomenon. Presenting a narrative literature review would best serve my purpose of demonstrating more clearly the

breadth of the research, the challenges to exclusive breastfeeding for obese women, and the challenges to professional practice. The volume of relevant material was immense. Attempts were made to demonstrate how maternal obesity impacts on breastfeeding duration, however as labour and birth, and breastfeeding have necessary hormones in common, obesity was noted in other studies to inhibit labour and increase risks for interventions. This line of enquiry was also included in this review, as interventions inclusive or irrespective of obesity was noted to inhibit secretory activation, the delay of which has in turn been demonstrated to reduce breastfeeding duration.

Finally, studies reveal that obese participants were affected by obesity stigma in their perceptions and experiences of nursing in public and breastfeeding support by health professionals. Obesity stigma was noted as a further barrier to breastfeeding for obese women.

The introductory chapter and the literature review have unearthed several interesting points which would benefit from restatement;

- Research is demonstrating that the intrauterine environment has implications for infant health. Epigenetic studies demonstrate the intrauterine environment influences gene expression in preparation for expectations of extra uterine life (Lane, 2014).
- Researchers note that mode of birth, breastfeeding and skin to skin contact immediately after birth, are important activities in optimal microbiome development in the infant, and influential in long term health outcomes, including obesity susceptibility (Pannaraj et al., 2017).

- Other sections of research explored maternal obesity and co-morbidities and implications for maternal and fetal/infant wellbeing; including pre-eclampsia, IUGR and stillbirth (Kristensen, Vestergaard, Wisborg, Kesmodel, & Secher, 2005), that are known conditions which incur pregnancy or labour interventions.

Further research demonstrated that a higher rate of obese women had interventions in labour than non-obese women (Kerrigan et al., 2015), irrespective of co-morbidities; and that both obesity and interventions in labour have been seen to disrupt lactational hormones (Chapman & Perez-Escamilla, 1999). Demographic studies have noted obesity to be correlated with low socio-economic status and poverty more closely than other demographic characteristics (Lee, Harris, & Gordon-Larsen, 2009).

Although there are studies with contradictory findings, and study limitations have included a lack of cultural diversity in participant groups and small sample sizes, there remains considerable research demonstrating that obese mother/infant dyads are likely to be at a disadvantage with regards to their breastfeeding outcomes. Additionally, birth and breastfeeding outcomes<sup>7</sup> for the study site in 2014 have indicated a BMI range. Therefore, I will now proceed to design and implement a qualitative research study with the aims of exploring the barriers and facilitators to exclusive breastfeeding for five women who used the study site hospital maternity services, and three midwives who have shared the midwifery partnership with obese women previously.

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<sup>7</sup> Maternity outcomes for the study site were not used as study data, but as a reference to compare to research. Therefore, other variables were not controlled for, and results cannot be considered significant.

# CHAPTER THREE: METHODOLOGY AND STUDY

## DESIGN

### Introduction

This study began with an overview of obesity as an emerging health concern, now recognised by WHO (World Health Organisation, 2016), acknowledging its complexity. A discussion of the implications of maternal obesity in the maternity care setting, including maternal and infant outcomes in the short- and long-term, followed. This was compared to maternity outcomes for the study site for the year 2014, where a BMI range was noted. Reviewing maternity outcomes with BMI as the variable revealed the need for further exploration and questioned whether review of service provision was warranted. Immersion in relevant literature presented many considerations, and this was underscored by reports on medical costs calculated to be attributable to obesity, and cost projections according to future estimated obesity trends (Swinburn, Moodie, Ashton, & Siahpush, 2012).

Review of material concerning the development of the infant microbiome, through events such as mode of birth, skin to skin and infant feeding methods; and its influence on long-term health, presented one avenue to pursue. The literature review was confined to research or research reviews examining factors which influence the duration of exclusive breastfeeding in obese women, which included hormonal issues, obesity stigma and maternity care practises. It nevertheless identified a broad scope of interest demonstrating the breastfeeding determinants for obese women to be far reaching. There was limited qualitative research exploring breastfeeding determinants



for obese women uncovered in the literature search and review. For this reason, and the desire to facilitate a review of maternity services applicable to obese consumers, I chose to implement a qualitative interpretative research inquiry. As a midwife and lactation consultant interested in optimising maternity services for obese mother/infant dyads, I chose to make the research focus, an inquiry into the barriers and facilitators for exclusive breastfeeding as experienced by obese women; as the study site data indicated increased interventions in labour and reduced exclusive breastfeeding rates for obese women compared to non-obese women. This chapter will describe the development of the research approach for this study including; study design and methodology selection, participant recruitment and data collection methods, data analysis procedures, ethical considerations, and finally a summary of challenges encountered.

## **Study aims**

The primary aim of the study was to develop a detailed understanding of what women with a BMI equalling or exceeding  $35\text{kg/m}^2$  experienced as helpful and unhelpful in their breastfeeding journey; ultimately aiming to look at the sense the women made of breastfeeding as obese mothers. This was influenced by sections of the literature review which revealed the breastfeeding determinants for obese mothers to encompass hormonal factors, pregnancy and labour interventions and social factors. I wanted to hear the voices of service users in this regard. Subsequent study aims included producing information which could be used to support service development and improvement initiatives for this demographic at the study site maternity unit.

## **Methodology selection**

Following review of obesity rates in New Zealand, the cursory look at study site maternity outcomes and the literature review which encompassed a broad scope of research interest in the topic of maternal obesity, influences and outcomes (including breastfeeding determinants), I was led to seek a study design which would enquire as to obese service users breastfeeding experience, including their understanding and interpretation of related factors. The reasoning for this was to discover obese service users' reception of maternity experiences and how they understood them to relate to breastfeeding outcomes. As the researcher, I would then proceed to add my own interpretation with a view to examining the maternity service on completion of the research. A qualitative interpretative study design was therefore selected. In consideration of the fact that this study aimed to consult with service-users with respect to experiences of breastfeeding, and breastfeeding support, a qualitative approach to research was deemed the appropriate selection.

While the literature reviewed various approaches taken by researchers interested in breastfeeding and obesity, qualitative approaches are well suited to studies exploring experiences and reception of health care, and its influence on healthy activities. Given the study aims and intentions, a constructivist theoretical framework applied. Constructivist approaches maintain that meaning or knowledge is not created in isolation. Theorists such as Hung, (2006) contend that meaning is constructed through the experience of meaningful activities, within many different socio-cultural contexts and perspectives (Hung, Tan, & Koh, 2006). Uncovering meaning given to maternity experiences of obese women and how they then understand their

experiences to have influenced their breastfeeding, would serve to provide insight, and facilitate evaluation of maternity services efficacy. This seemed of relevance, as a segment of research revealed obesity stigma as a breastfeeding determinant. Therefore, including interpretations of experiences and perception of external influences would be expected to be advantageous with meeting study aims. The requirements of the construction of meaning and interpretation of experiences narrowed the study design selection to qualitative interpretative designs. Interpretative phenomenological analysis was selected as an appropriate study design to meet study aims.

### **Theoretical Principles**

Interpretive phenomenological studies are underpinned by the three schools of philosophical research: phenomenology – the study of experience, hermeneutics – the study of interpretation, and idiography – a commitment to the specific, and to the individual (Smith, Flowers, & Larkin, 2009).

- Phenomenology is concerned with understanding experience and is influenced by philosophers such as Husserl (1859–1938) who maintained that the study of experience required context or circumstance to enable understanding. Husserl discussed the importance of an appreciation of both the essence and experience of the phenomenon in question (Paley, 1997).
- Hermeneutics is the study of interpretation. Heidegger (1889–1976) brought the notion of sense making and microanalysis to phenomenology, defining it, not only as the understanding of an event but the interpretation and synthesis of it (Harman, 2007).

- Idiography is a commitment to the specific, unique individual and to detailed immersion. It avoids generalisations<sup>8</sup> (Smith et al., 2009). Introduction of idiography to psychological enquiry was by Gordon Allport in 1937 (Marceil, 1977).

IPA encompasses all three theoretical principles.

This research is specifically concerned with the phenomenon of breastfeeding within the context of maternal obesity, while acknowledging other, associated challenges. Additionally, revealing the personal meaning that participants ascribe to their experiences is important for increasing appreciation of the scope of this topic, and the potential for service change. This research upholds a commitment to specific experiences, situations and interpretations made by individual participants, foregoing generalisability. Furthermore, IPA was chosen as a research approach for this study as it accepts that thematic analysis may uncover meaning not necessarily addressing the research question. I too, intended to allow for this eventuality in the research.

## **Method**

Interpretative phenomenological analysis (IPA) is a qualitative research approach used to explore how individuals make sense of lived experiences. IPA has its roots in psychology, stemming from Jonathon Smith's writing in 1996 proposing a qualitative approach to research, centred in psychology (Smith, Flowers, & Larkin, 2009).

Considered a research methodology, IPA encompasses theoretical principles, study

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<sup>8</sup> Alternatively, nomothetic approaches refer to the study of cohorts and include or seek generalisations. (Marceil, 1977).

designs and analytical procedures (Braun & Clarke, 2013). I conducted the research following the guidelines for using IPA methods by Smith et al. (2009).

In consideration of the primary and subsequent study aims of;

- developing a detailed understanding of what women with a BMI equalling or exceeding 35kg/m<sup>2</sup> experienced as helpful and unhelpful in their breastfeeding journey; ultimately aiming to look at the sense the women made of breastfeeding as obese mothers; and,
- producing information which could be used to support service development and improvement initiatives for this demographic at the study site maternity unit;

I gave considerable thought to minimising researcher bias. Following education in the use of social media in health provided by International Lactation Consultants' Association (ILCA), I was confident regarding the use of the Facebook social media communication modality as a tool for the facilitation of conversation and data collection.

Unfortunately, due to low recruitment it was necessary to revise the study design. Interviews were selected as an appropriate alternative as it was anticipated that similar data would be elicited as per the original study aims and objectives, and minimal alteration to intended data analyses measures would be necessary.

The research design was emergent, in keeping with Creswell's (2014) guidelines on qualitative research design (Creswell, 2014). The original study design (the Facebook participants) attempted contemporaneous data collection in a natural setting, and facilitation of conversation between participants. The design was adjusted to the

conducting of semi-structured, one to one interviews with client participants, and the inclusion of midwives as participants, to improve recruitment. There were significant differences in the data elicited by the two study designs; specifically, the range of topics discussed was wider ranging in the interviewed design. However, following transcription and discussion with my academic supervisor, it was deemed appropriate to include both sets of data in the analyses using the IPA model, as there was sufficient material discussing the phenomenon of breastfeeding as an obese woman, the care and support of the obese breastfeeding woman, and interpretations thereof.

## **Research Design**

### **The setting**

The research was undertaken at a maternity unit in a secondary care level hospital in the North Island of New Zealand. It was anticipated that this would provide sufficient eligible service users as prospective participants to the study. The maternity unit has a birth rate of 1800-1900 births per year, servicing an urban and semi-rural area.

### **The participants**

#### *Sampling and Recruitment*

Participants were recruited to the study by purposive sampling methods. Appropriate sampling strategy is essential in qualitative research as it influences research quality (Suri, 2011). Participants were invited and selected based upon specific inclusion criteria, i.e. BMI and the intention to breastfeed exclusively, rather than random selection. This was necessary to address the research aims, which required as

to the experience of this demographic, and had the potential to contribute to understanding of the research question.

Participants were recruited through contact with lead maternity carers (LMCs) who had an access agreement with the study site, and the obstetric clinic at the study site hospital. An initial information session for midwives and doctors was provided to demonstrate the complexity of the issue of obesity in pregnancy and breastfeeding, the purpose of this research, and to ask them to approach their clients on my behalf. Potential participants were provided with a letter of invitation and written information regarding the purpose and design of the study. The initial study design aimed to recruit ten participants to the Facebook group, to facilitate group discussion with minimal researcher participation, and aiming to minimise researcher bias. Unfortunately, only two women were recruited to this study design, one a primiparous woman, the other a multiparous woman, both intending to exclusively breastfeed. Due to this low recruitment, the study design was modified, and ethical approval was sought and gained to include the face to face interviewing on service users who met the inclusion criteria and midwives who worked at or had an access agreement with the study site, and who had experienced caring for obese women. Three further obese women agreed to be interviewed for the study, all intending to exclusively breastfeed, one primiparous, and two multiparous women. Additionally, three midwives agreed to be interviewed for the study, all of whom had experience of providing midwifery care for an obese woman.

The study therefore, had three group sections; the original Facebook participants, the interviewed women, and the interviewed midwives. This led to variations in data themes, due to the different methods of data collection. Data from

the Facebook group was more contemporaneous and therefore reflected breastfeeding progress or challenges currently being experienced. The interviewed women were encouraged to discuss any maternity issues that they thought related to breastfeeding. This included contemporaneous data, and also antenatal and labour experiences. The data collected from the midwives included more general comments regarding the breastfeeding barriers or facilitators from their perspective, and also included opinions on models of care and hospital protocols. Due to resource constraints no other changes to the study design or theoretical framework were made.

### *Protection from harm*

The research theme of breastfeeding as an obese woman is of a sensitive nature. Participants were advised they could withdraw themselves or their data from the study, up until the commencement of data analysis. Participants were advised of this juncture by telephone conversation when they were asked if they wished to review their data. Participants were also advised they could stop the interview if they found the experience to be upsetting. The Director of the Maori Health Unit, the ethics committee representative at the study site, my academic supervisor and a study site lactation consultant were available for participants to contact for support, questions or feedback. Participants were made aware of these avenues at the time of interview. Finally, all participants were interviewed in the venue of their choosing. All interviewed client participants chose to be interviewed in their home. All midwife participants chose to be interviewed in their place of work, namely an office in the maternity unit.



### *Eligibility criteria*

To be eligible for inclusion in the study, women were required to fulfil the following criteria:

- BMI of 35 kg/m<sup>2</sup> and above at booking
- Currently in first pregnancy and approximately 30 weeks' gestation
- A Facebook user or willing to learn
- Intending to breastfeed
- Pregnancy care booked with the study site hospital

Women were excluded from the study for the following reasons:

- BMI of less than 34.9 kg/m<sup>2</sup>
- Not comfortable with Facebook use
- Multiparity
- Previous breast surgery
- No intention to breastfeed

Following initial low recruit to this study design, multiparity was removed from exclusion criteria, as was the social media element to the study.

Limited demographic information, such as age or ethnicity, was collected due to small sample size. Inability to generalise results rendered there little value in collecting additional demographic characteristics. Initially multiparous women were excluded but were included following poor recruitment. I required that the participants had a BMI

equalling or exceeding 35kg/m<sup>2</sup> but I did not ask them to disclose it, for ethical reasons. I elected to use 35kg/m<sup>2</sup> as the inclusion criteria, rather than 30kg/m<sup>2</sup>, which is the BMI considered by WHO to reflect obesity (World Health Organisation, 2016), due to discrepancy with the stage of pregnancy that women are first weighed, and consideration of criticisms of BMI as a means for determining obesity (Bergman et al., 2011).

### *The Information Session*

During the recruitment process, I designed a research poster summarising the research objectives and what participation would involve, asking for volunteers for the study (see Appendix two). This was placed in high traffic areas of the study site, given to LMC midwives who used the facilities, and it was also posted to the study site and antenatal education Facebook pages. A summary of the study, and request for participants was published in the maternity unit newsletter. I presented a summary of the purpose and design of the research at three midwifery study days occurring during the recruitment period, which also outlined the participation requirements.

## **Data collection**

### *The Facebook participants*

For the original phase of the study, participants were invited to a Facebook group created for the purpose, asked to post relevant material pertinent to their breastfeeding experiences for ten days, and encouraged to interact with other group members as they wished. The second phase of the study aimed to collect a further consecutive ten days of posts and discussion regarding breastfeeding experiences from each participant. The focus of phase one was to capture the timing of, and

interpretation of, breastfeeding milestones; the second phase was focussed on interaction between participants regarding breastfeeding experiences.

### *Interviews*

For the interview phase of this study I drew up two separate interview schedules (Appendix four), and information sheets specific to client or midwife participants (Appendix two). The interviews were semi-structured, with the aim of minimising researcher bias. The questions used were framed around eliciting meaning rather than cause. The schedules were used as prompts for the researcher/interviewer; however interviewees were encouraged to introduce relevant topics and experiences if they wished.

### *Interviewing the participants*

Following the initial meeting with prospective participants where they were provided with the information sheets, I approached their LMCs to follow up as to whether they consented to be interviewed on my behalf, as they had an existing relationship with the women and I expected that this would minimise any pressure or obligation the women felt to participate. I administered the consent process with interviewees at the time of interview.

I recorded the interviews, with permission, for transcribing purposes, using a Livescribe pen which was provided by the university. I contacted the client participants by phone to check if they still consented to be interviewed as part of this study and gave them the option of being interviewed at their home, the hospital, or a venue of their choosing. All three opted to be interviewed at their home. I approached the midwife

participants at the hospital where they work regarding their choice of interview venue. All three requested to be interviewed at the hospital.

I was keen for the participants to talk about their own experiences, without being too affected by my own views. Therefore, I prepared a semi-structured interview schedule and prompts (see Appendix four), but I was not concerned if women chose to talk about other topics relating to their experience of maternity services, motherhood and breastfeeding. I had the same intentions for the midwife interviews and therefore drew up a semi-structured interview schedule for guidance only and encouraged them to include ideas and salient points as they wished.

## **Data Analysis**

IPA analytical procedures involve a commonality of experience amongst all participants that has initiated reflection on its meaning. The researcher elicits the participants' reflections through identified means, such as interview, and reflects and interprets them in turn. Smith (2009) describes this as double hermeneutics (Smith et al., 2009). Within this study, following all interviews and the conclusion of the Facebook data collection period, all accounts were transcribed and reviewed multiple times by the researcher using a reflexive approach. Themes and sub-themes emerged through this process. Immersion in the data continued as the data moved from descriptive to conceptual and critical understandings (Smith et al., 2009).

### *IPA Process and Data analysis*

I considered it important to discover: the breastfeeding knowledge of women with a raised BMI, their understanding of breastfeeding success, what supported breastfeeding for them and what had a negative impact on it. I also wanted to discover

the timing of various breastfeeding milestones, such as the beginning of lactogenesis 2 (LII) and compare this to what are widely considered to be physiologically normal parameters.

I followed the guidance set out by Smith et al (2009), to conduct the analysis of the data transcripts. I undertook data analysis of individual transcripts within the week following the interview. This was to optimise the researcher's recall of the interview. Facebook dialogues were analysed at the completion of the data collection period allocated, which was six weeks after the second participant had birthed her baby. I printed out hard copies of all transcripts including Facebook dialogues. I reviewed the transcripts in turn, going through all steps, before moving to the next transcript. As suggested in the guidance, I divided the page into two columns before printing, with the transcription of dialogue in the left column, leaving the right column blank for researcher notes.

### *Step one*

I read the transcript in full, whilst listening to the audio recording. This facilitated recall of the tones and inflections in the voices of the participant and interviewer, including laughter or sarcasm which would have implications for interpretation. I had made notes while conducting the interviews, which I referred to at this stage. This included detail such as Participant 4's sadness at her breastfeeding status (partial breastfeeding), which I understood to underscore much of her interview. I noted initial thoughts and interpretations of the data, for all interviewed participants, and the printed Facebook dialogues.

### *Step two*

This stage of analysis involved a deeper immersion in the data. I reviewed the transcripts line by line, noting the content of communication. This step began as descriptive, and evolved to an interpretive approach, noting communication style, language and the context which gave meaning to the experience of phenomena in terms of the participant's understanding.

Smith (2009) refers to this part of the process as "conceptual coding." This is a move away from documenting specific experiences and instead, the analyst infers wider concepts which encompass the experiences. Within IPA process, the researcher acknowledges the part their own position plays within interpretation of the data; including their knowledge prior to, and following data collection, if there has been movement. Within this step of analysis, I wrote reflections on my understanding of breastfeeding and obesity (which was admittedly quite clinical, rather than empathetic), my concept of normality in the context of maternity care, and on the outlier participant. This assisted me to maintain an awareness of my involvement in the emergence of meanings and themes.

### *Step three*

I then proceeded to review this increased data set to locate emerging themes. I used different coloured pens to underline different concepts as I interpreted them. This was to aid comparison of transcripts. I noted that there were initial themes emerging such as 'autonomy' and 'partnership' that were encompassed within the broader concept of 'communication.'

#### *Step four*

Having noted emergent themes in the data, I reviewed the themes aiming to classify them as barriers or facilitators (or extraneous) to breastfeeding and this included attempting to discern how participants had interpreted themes. For example, the theme of 'communication' was experienced as both barrier and facilitator to exclusive breastfeeding, depending on interpretation. I did this by typing and printing out the themes in the participant's data, and then organised these within a Venn diagram with the major themes as compartment headings. Once completed, I was then able to determine whether themes represented barriers/facilitators/extraneous to exclusive breastfeeding. This assisted my appreciation of how the participant interpreted experiences, and any connections made to how they experienced breastfeeding, or breastfeeding support.

#### *Step five*

This step in the process of analysis is the acknowledgement required when moving on to analysing the next transcript. I was careful to have an awareness of my knowledge and ideas, and the affect that analysing the previous transcript has had.

#### *Step six*

Once all transcripts had been analysed to this point, I reviewed the themes and diagrams again, to note connections or differences between participants and groups in relation to major or subordinate themes, and to note emergence of unique themes. I chose to use Venn diagrams again, to graphically illustrate patterns and connections. For example, this facilitated the emergence of the theme of 'communication' as a common theme to both client and midwife participants.

This produced several findings that I will present in the next chapter.

### **Data collection using social media**

There were several reasons for electing to use social media for data collection in this study. I had reflected on ways to overcome the time and human resources restrictions of a Masters level thesis. In using social media, I expected to be able to utilize NCapture for data analysis. NCapture is a feature of the NVivo research software by QSR International, specific to gaining data from social media sites. I anticipated that this would reduce time spent in data analyses and allow for a larger number of participants.

Another influencing factor was my intention to encourage participants to generate data without me leading the process with the knowledge and opinions I had developed through scrutiny of existing research, in an attempt to reduce researcher bias. I sought to give obese breastfeeding women a platform to share their experiences without being guided in a specific direction due to researcher interest.

Finally, I expected that using the social media would facilitate contemporaneous data collection, and the reasoning behind this was twofold. Firstly, I was interested in whether participants would experience breastfeeding milestones early, on time, or delayed; and how they would interpret this experience. Secondly, I wanted to attempt a naturalistic enquiry, for the convenience of the participants, and I considered it a measure to improve validity by overcoming difficulties of accurate recollection that may arise due to lack of sleep and lifestyle adjustments occurring with the birth of a new baby.



Facebook was chosen over other social media platforms it is a widely used communication modality (Beddows, 2008), and through conversations with colleagues and service users, the consensus seemed to be that it had a wider usage than an alternative such as Twitter. Due to the design of the study the first participant was alone in the study group for four weeks before a second participant birthed her baby. I asked her to document her breastfeeding progress, milestones and experiences but she did not engage, despite prompting and questions in the Facebook setting. Following discussion with my supervisors, I decided to ask Participant 1 if I could interview her, within the Facebook group and she gave me permission to do so. Participant 2 was more fluent within the group but tended to prefer to respond to direct questions and prompts rather than documenting experiences unasked. There were no further participants recruited to the Facebook group.

Having described how the study was administrated, including the challenges and how they were overcome, I will now describe the steps taken to ensure rigour, participant safety, ethical approval, ethical considerations, and Treaty of Waitangi considerations.

### **Ethical considerations**

The development of this research was guided by The Code of Ethics set by the International Confederation of Midwives (International Confederation of Midwives, 2014; Kennedy, Renfrew, Madi, Opoku, & Thompson, 2006) and the Ethical Code of Midwifery Care set by the New Zealand College of Midwives (New Zealand College of Midwives, 2017a). Interviews were carried out in partnership with the women or midwives. Participants were encouraged to explore experiences of their choosing rather

than applying a strictly structured interview schedule; by so doing, attempting an emergent design (Creswell, 2014). Safeguards such as the availability of a Maori health advisor, the research supervisor, the research ethics committee convenor and a lactation consultant were put in place to minimise participants' exposure to risk. Participants gave informed consent prior to participating, and had the option to withdraw throughout the interview, and up until data analysis. Research processes were evaluated at all stages of the research, and the data collection method was adjusted to better suit prospective participants and improve recruitment (New Zealand College of Midwives, 2017a).

Midwife researchers require an appreciation of the extent to which ethical considerations affect the research process and Creswell (2014) recommends early consultation with professional bodies. Thus, I consulted with an NZCOM midwifery advisor, the Director of Midwifery, as well as the District Health Board research committee and the Director of Maori health, in the proposal stage of my research, regarding study aims and objectives, and study design proposed.

Considerable attention was given to the ethical use of Facebook for data collection in a research study. I undertook the social media training provided by the International Lactation Consultants Association (ILCA), which included a focus on ethical conduct. I created the Facebook group for the participants' use, with maximum security settings applied, and participants were asked not to post intimate photographs of themselves or others. They were extended the option of creating pseudonym accounts for participation if they so wished; although no participants chose to do this. They were advised that participating in the Facebook group would entail other participants being

aware of their identity. They were asked not to identify others, such as friends or their midwife, on the network, and to be mindful of other members of their household having access to their Facebook account. Having full awareness of these risks, they consented to participate in the research. The settings of a Facebook secret group ensure that the group is not advertised on non-members feeds, and posts are not shared to non-members. This has meant that the data of the Facebook participants was not anonymous during data collection, but identifiers were removed in data analysis in compliance with university guidelines (Victoria University of Wellington, 2016).

#### *Informed consent, protecting participant identity and maintaining confidentiality*

Informed consent is an essential component of conducting research in New Zealand, and part of the code of ethics for New Zealand midwives (New Zealand College of Midwives, 2017a). Researchers are required to ensure all participants are informed of the research aims and have given written consent to participate, as per the Cartwright Commission's third and fourth recommendations (Women's Health Action, 2014). As such, participants in this study were provided with a written information sheet describing the research aims and processes (see Appendix two) and a consent form (see Appendix three). Information sheets and consent forms were prepared specific to the Facebook participants, the interviewed client participants and the interviewed midwife participants and approved by the university ethics committee prior to use. Information sheets and consent forms were adapted from the pro forma information sheets and consent forms provided by the university. The information sheet stated the participants' right to withdraw from the study. Signed consent was obtained from Facebook participants prior to participation and before the birth of their baby. Signed consent was obtained from interviewed client and midwife participants

before the interview commenced. The three interviewed client participants were given the option of agreeing to be interviewed, but declining permission for their midwife to be interviewed. It was not essential to the study for the participants to be client/midwife pairs. However, no client participant chose this option.

Within the write up of the research, confidentiality has been maintained, referring to all participants by number. The university and study site maternity unit have not been identified. The research transcripts were available only to the researcher and research supervisor. In addition, no identifying information, bar the category (client or midwife) and the date, was collected on recordings or transcripts of any interviewed participant. Information files held on computer were password-protected. All data files will be destroyed after ten years (Victoria University of Wellington, 2016).

### *Ethical approval*

The inclusion of human participants in research requires that a formal ethics approval application is made either to Health and Disability Ethics committee (HDEC), or to the University Human Ethics Committee, depending on the size of the research. In the first instance, I applied to HDEC, who, after consideration, returned their conclusion that my study did not meet their criteria for consideration and directed me to apply to the University Human Ethics Committee (HEC). Ethics approval was gained from the university ethics committee for the original study design using the social media data collection method on 16<sup>th</sup> December 2015 (Ethics approval 22458). Following low recruitment to the study, a resubmission was made to the university HEC to conduct one-to-one interviews with consumer participants and midwife participants. This was granted.

### *Treaty of Waitangi considerations*

This study upheld the Treaty of Waitangi principles of Partnership, Participation and Protection outlined in university guidelines for conducting research (Victoria University of Wellington, 2016). Additionally, the Health Research Council of New Zealand sets out guidelines stipulating that all research conducted in Aotearoa New Zealand be relevant to Maori (Health Research Council of New Zealand, 2010). Researcher interpretation of this standard led me to ensure that the theme and the design of the research be relevant to Maori health, be accessible to Maori women, and that Maori women were afforded equal opportunities to participate in research that is culturally appropriate. I achieved this through consultation with the DHB Director of the Maori Health Unit (see Appendix one), and the DHB ethics committee at the proposal stage of the research planning (see Appendix one). To promote cultural safety and emotional safety of the prospective participants, I arranged for the Director of the Maori Health Unit, the ethics committee representative at the study site, and my academic supervisor to be available for any participant to contact if they had questions or felt unsafe.

I ensured that the study was relevant to the health requirements of Maori, addressed inequalities and promoted the health of Maori and Pacific people, by reviewing New Zealand obesity rates and breastfeeding rates, according to ethnicity. The Health of New Zealanders 2011/2012 report identified Maori adults were twice more likely to have obese level BMIs than non-Maori adults, with an obesity rate of 44%. Pacific people showed a 62% obesity rate. In both groups, the obesity rate was higher for females than for males. European adults had an obesity rate of 26% in this report (Ministry of Health, 2012). Additionally, the National Strategic Plan of Action for

Breastfeeding 2008-2012, states as objective 3.3, that the health sector be responsive to the breastfeeding support needs of Maori, Pacific and other ethnic communities; following low exclusive breastfeeding rates at six weeks and three months when compared to 'New Zealand European' and 'other' women (National Breastfeeding Advisory Committee of New Zealand., 2009).

### **Demonstrating Rigour**

Within qualitative research, the concept of rigour is described by Liamputtong (2013) as the credibility, transferability, dependability and confirmability of the research and approach or design (Liamputtong, 2013). To ensure these aspects of rigour were achieved in this research I followed guidelines by Liamputtong (2013).

#### *Credibility*

Credibility as a measure of trustworthiness refers to whether the findings are believable, accurately representing the participants' viewpoint or meaning (Liamputtong, 2013). I achieved credibility in this research by reviewing transcripts with participants following analysis. All midwife participants, and three of the five client participants agreed to review their transcripts and did not make any amendments. Of the remaining two client participants, one had moved out of the area, and one did not respond to correspondence.

#### *Transferability*

Transferability in research refers to its generalisability to other groups or individuals (Liamputtong, 2013). There is limited transferability in this study, due to small sample size, a focus on idiographic data, a novel design (semi-structured interview and Facebook interaction), and the specific and sensitive topics of obesity and

breastfeeding. Nevertheless, all participants worked at, or birthed at, the study site and therefore there will be a degree of generalisability of experiences of breastfeeding support and maternity care culture. Transferability was also addressed in this study by ensuring that the research question was a good fit to address the research problem, or area of interest, and the research design addressed the question appropriately. The study evolved from a wider interest in obesity, which was narrowed down to focus on what obese women experience as facilitators and barriers to exclusive breastfeeding. Hence, I designed the study to be both qualitative and interpretative, which was appropriate to study aims.

### *Dependability*

Dependability addresses consistency and congruency in the research (Liamputtong, 2013). This is ensured by the careful documentation of the research processes, including how results were achieved. This was achieved via several methods. Regarding sampling, I attempted snowball sampling, due to the specific inclusion criteria. Recruitment was low, but sufficient for an IPA study (Smith et al., 2009). An 'audit trail' of analysis process was maintained, which included question schedules, interviewer notes, audio recordings and a codebook of the initial codes of data themes.

### *Confirmability*

Confirmability refers to the ability to show that the findings and interpretation of findings fit the data, and have not emerged from researcher bias (Liamputtong, 2013). One way of achieving this is through the inclusion of a second researcher to review and code the data and compare emergent themes with the first researcher. This was not achievable in this research due to time constraints. However, this was achieved through

discussion with two academic supervisors, and through re-evaluation of transcripts with participants.

### **Challenges during the study**

Low recruitment to the study was challenging, possibly due to social media element of the design, and possibly due to the requirement to consider oneself obese. This may be a reflection of inherent discrimination and women's struggle to avoid it. There was difficulty over appropriate language to use, and my previous experience told me that how women perceive words such as fat, obese, overweight is individual. Therefore, I responded to the situation or context on a case by case basis.

Communicating with people on the Facebook platform brought forth unique ethical considerations. Unlike face-to-face or telephone interviewing, there were no non-verbal cues to assist the researcher in understanding meaning in communication episodes. This necessitated thoughtful phrasing of questions to participants. One reason for electing to use a social media platform to collect data was to use NCapture software for data analyses, in the expectation that this would be time efficient. Due to low recruitment to this study design however, data was analysed manually.

Having described the study development, from the research reviewed, the iterations of the study administered, data collection and analysis, and ethical considerations, I will now proceed to outline the themes that emerged from the data analysis process described.





## CHAPTER FOUR: FINDINGS

This chapter will describe the experiences of the study participants, noting the themes that emerged in the data analysis from the Facebook and interviewed participants. Five main themes emerged (excluding themes which were pertinent only to Participant 5, the outlier participant, which will be reviewed separately). I will summarise each theme and use quotes, *in italics*, when relevant, to illustrate the participant's view. I will refer to participants by number to preserve anonymity as follows: - Facebook participants are Participant 1 and 2; interviewed women are Participants 3, 4 and 5; the interviewed midwives are Midwives 1, 2, and 3.

The themes that emerged from the study were as follows and are illustrated in figures 4a and 4b:

- Communication: this was a core theme, and mentioned by all participants
- Autonomy and Normality: interlinking themes, unique to the client participants
- The Partnership Approach to maternity care: a common theme to all participants
- Interventions in pregnancy, labour and infant feeding: a common theme to all participants
- The effects of interventions on lactation: a unique theme to midwife participants.

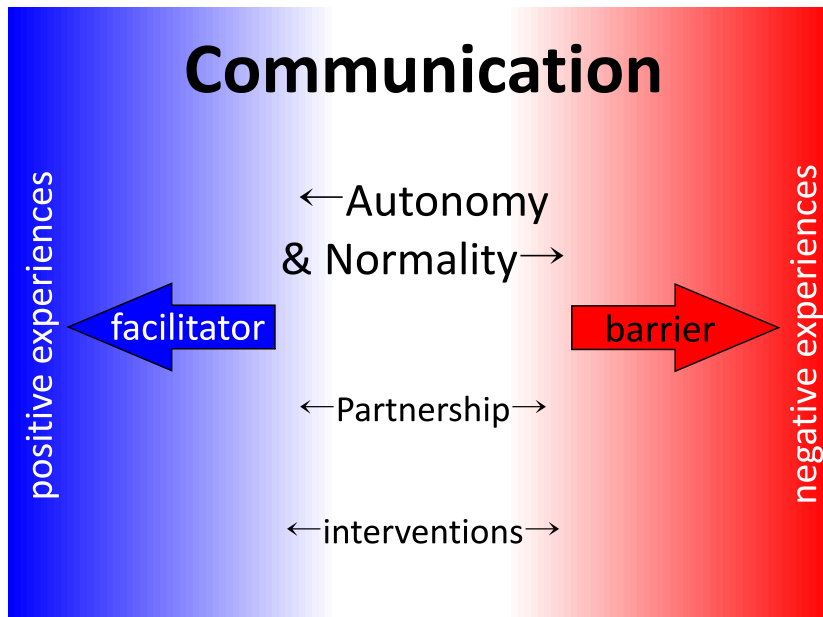


Figure 4a. Diagram illustrating the interrelatedness of client participants' study themes.

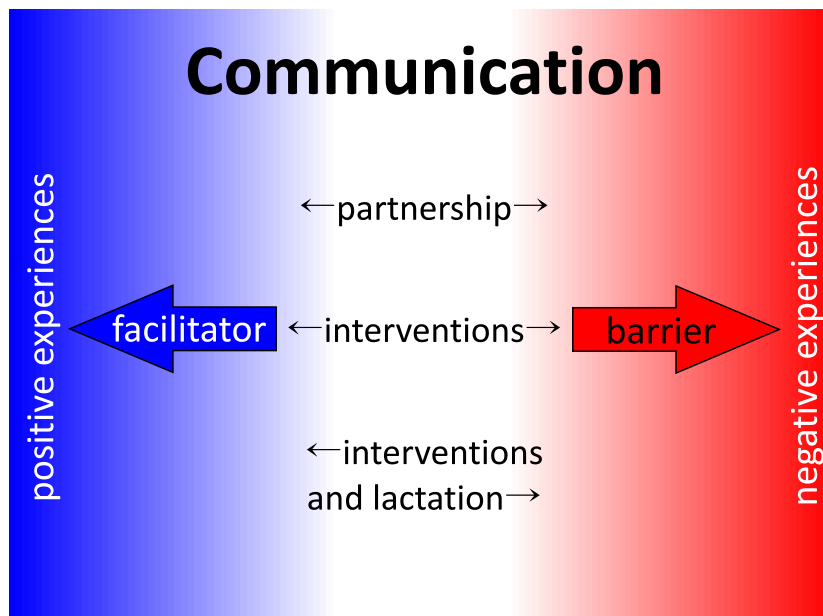


Figure 4b. Diagram illustrating the interrelatedness of midwife participants' study themes.

Themes that emerged from the outlier participant's data:

- Infant health and safety issues
- Maternal nutrition and effect on breastmilk quality

## Communication

Communication emerged as a core theme to all participants, excepting Participant 5. It underscored other themes, affecting how other themes were experienced and interpreted. Hence, it was of considerable importance for determining whether an experience influenced breastfeeding outcomes positively or negatively.

Participants 3 and 4 spent considerable time reflecting on various periods of their maternity journey, expressing their interpretation of communication episodes experienced along the way. They revealed that recollections of communication in obstetric clinic were negative. It was felt to be disempowering, reducing their autonomy. Participant 4 stated, *"[Staff member] was just outlining risk after risk after risk. There was no acknowledgement that I had had a healthy pregnancy;"* inferring her experience of obstetric clinic was repetitious and defensive in style, her expectation of positive reinforcement was unmet. Dissatisfaction with communication in obstetric clinic care was further highlighted by use of terms such as *"disjointed"*, *"judging and blaming"*, and, *"[risks] were all my fault"*. Participant 4 reported that a *"risk-based"* style of communication was applied in clinic, rather than a strength-based approach – as she would have preferred. *"This emphasis that you're going to have bad outcomes if you have a high BMI"* (Participant 4).

Participant 4 attributes the erosion of her confidence to her experience of obstetric clinic. She reports, “*eventually finding my voice,*” towards the end of pregnancy, and discharging herself from the obstetric clinic, reverting to the sole care of her midwife. Her choice of phrase is telling, implying that she had no voice, or felt silenced, prior to that time. She believed returning to the normality of the midwifery relationship to be beneficial to her; that obstetric clinic provided no added value. She thought that her experiences of communication in antenatal clinic coloured the remainder of her maternity journey, including breastfeeding experiences. “*And it may have been surrounding his birth. It may have been residual from the pregnancy.*” This finding, and the woman’s interpretation, led me to reflect on the compartmentalisation of maternity care into trimesters, and specific gestational weeks, or postpartum days, where specific tests are required, or topics are addressed in clinical conversations. I questioned whether working within the current maternity care structure fails to encourage clinicians to consider the maternity journey and the women’s lived experiences as greater contexts. I will go on to review this finding in chapter five.

Participant 3 recalled feelings of inadequacy and despondency during her first pregnancy and breastfeeding experience, which she attributed to the communication styles and attitudes of hospital staff.

*I just couldn’t be his mum and I was in tears [...] And not one person said to us, “look just to help him settle down would you like to give him a bottle, just to put something in his tummy?”* (Participant 3).

However, with this pregnancy she avoided repetition of the negative experiences of communication in clinic and on the post-natal ward, by declining referral to obstetric

clinic, and not engaging ward staff in conversation or support; simply requesting artificial formula when required. *“That’s why I’ve learnt to say, “Hey, can you just make me 20mls [of formula]?” Give it to the baby, baby goes to sleep.”* Participant 3 went on to maintain her sense of normality and autonomy throughout her pregnancy, birth and postpartum experiences.

In the discussion chapter I will consider the implications of obstetric clinic communication, for the clients’, and the researcher’s, interpretation of the maternity journey, breastfeeding experiences and outcomes; and thoughts regarding arising issues of clinical risk.

The midwives’ experiences of communication concerning the care of obese women almost seem to be responding to the experiences expressed by the client participants. They frequently referenced language and communication, noting it to be a crucial midwifery tool and skill. However, they considered that the issue of obesity presented communication and language challenges to the midwifery partnership. They reported that attempts to have non-judgemental, empowering conversations were challenging. Two midwives expressed concern regarding introducing obesity as a topic for discussion, when it was not introduced by the woman herself. They voiced concerns that this would detrimentally affect the midwifery partnership.

*“so, it’s to have a very non-judgemental conversation initially, which is a bit tricky.”*

*“I think we pussyfoot around what their issues are.”*

*“I think it’s one of the most challenging”* (referring to finding appropriate language to talk to obese women about weight and risks.) (Midwife 1.)

The language surrounding obesity was considered by the midwives to have connotations of criticism and judgment. They found it difficult to be certain of maintaining neutrality, and preventing the topic of obesity from damaging the midwifery partnership, negatively impacting on health promotion efforts.

*“the language you use around that is really tricky. [...] we are in the business of empowering, not disempowering, and so finding the language you use, what to talk about, because we have to. We can’t not talk about it because it makes us uncomfortable.”* (Midwife 3.)

She compared the difficulty of finding appropriate language to talk about obesity, to communication barriers with non-English speakers: *“It’s a bit like [...] going to a, a non-English speaking person’s house and not having an interpreter.”* (Midwife 3)

The language surrounding obesity, and communication within the midwifery partnership was believed by the midwives to have the potential to help or hinder breastfeeding. Midwives 1 and 3 thought that they had not received adequate education on conducting healthy conversations with obese women; or needs specific to obese women that should be addressed. *“there probably should be something there, of some extra training on best ways to support women through pregnancy if they are obese”* (Midwife 3.) An awareness of obesity stigma was implicit in the difficulties the midwives expressed, concerning communicating with obese women. They struggled to find the words to explain referrals they made to obstetric clinic for obstetric consultation regarding maternal obesity, *“And also sometimes I feel-- I find it difficult to*

*talk to a woman about their weight” (Midwife 1); (neither midwife voiced similar challenges with other referral categories; this was not a pursued line of enquiry). Midwife 2 reported confining conversations to fitness and nutrition, and assisting women with practical suggestions on achieving health goals within the reality of family demands. “Our conversations are usually about, you could go out with other children; go out cycling with your children. [...] so we do have those conversations about, this is where you could fit it in.” (Midwife 2).*

The midwives valued language and communication as important midwifery skills, and the basis for the development of the midwifery partnership. They did not feel well prepared for conversations with clients about matters pertaining to obesity, either in the antenatal or postnatal periods. As such, language and communication were considered by the midwives as a potential barrier or facilitator to exclusive breastfeeding for obese mothers; and they were frustrated that a skill they relied upon was not honed well to obesity issues. I will explore possible explanations for these challenges in the next chapter.

## **Autonomy and Normality**

Having already alluded to the participant experiences and perceptions of autonomy and normality, by stating they are embedded in experiences of communication; I will now describe their importance as themes in this study, in greater detail. Initially, I attempted to address them as separate themes, but, due to their interdependence, I have chosen to discuss them in tandem. In this discussion, ‘*autonomy*’ refers to the client participant’s ability to self-govern, participate and make decisions during their maternity journey, or perception of such. ‘*Normality*’, refers to



the extent to which the participants could identify as 'normal women,' whether they interpreted their maternity experiences as 'normal', and what 'normal' seemed to mean for them. Notably, the Facebook participants referenced these themes often. The exploration of the concept of 'normal' as a requisite for personal identity, will resume in chapter five.

Participant 1 was a primiparous woman. Due to low recruitment to this study design, she was alone in the Facebook group for over four weeks before Participant 2 birthed her baby, and joined the group. Therefore, at four weeks postpartum, I acquired her permission to interview her within the Facebook group setting, regarding her breastfeeding experiences, including factors that had helped or challenged her up to this time. Her comments implied that she perceived no obstacles;

Participant 1: *"It's been really easy for me. I haven't had a bad latch or a shortage of milk supply. It's been going really well for me and my baby."*

Researcher: *"Do you remember when your milk came in?"*

Participant 1: *"Took a couple of weeks to really come in."*

Researcher: *"Oh ok, did you use formula?"*

Participant 1: *"Yeah, for the first week or so"*

Researcher: *"Did you use a pump or hand express?"*

Participant 1: *"Yes I used a pump which is what I think helped bring in a lot of my milk."*

The excerpt implies that Participant 1 maintained satisfactory autonomy during her first month of breastfeeding, describing it as, '*really easy.*' Equally, the concept of '*normality*' appears significant. I did not challenge her understanding of 'normal breastfeeding' for ethical reasons, but it was interesting that she experienced everything pertaining to breastfeeding as normal and unchallenging. Unfortunately, Participant 1 appeared reluctant to examine her experiences at greater length, and it proved challenging to elicit further data. Further discussion may have proved enlightening on personal, family or cultural perspectives on understandings of 'normal breastfeeding'.

Participant 2 was a multiparous woman. She used formula supplementation during the first two postpartum days, and fully breastfed from that point and throughout the data collection period, which was four weeks. She did not explore her decision to use formula to supplement her breastmilk. She reports that it was on the second night following birth, "*[Baby] was getting worked up. I ended up giving her formula because I don't want her to starve and we were both exhausted.*" Clinical descriptions of normal parameters for lactation, and newborn infant behaviour, attest that Participant 2's reported experiences thus far were within normal expectations. However, she chose to intervene. It is unclear whether this is through unawareness of normal lactation process, or exhaustion, as she references both. She does not voice any distress over this choice however. This may have been a display of her acceptance of it as normal, and exhibition of satisfactory decision-making confidence, or a limitation of the communication modality compared to face to face communication. I will elaborate on this issue in the 'Appraisal of Study Methods' section.

Following a weight gain for baby of 200gms in the first week with no typical weight loss, and 100gms in the second week, I questioned Participant 2 regarding her perception of her milk supply: -

Researcher: *“Do you feed her on both sides or just one?”*

Participant 2: *“Just one for about four feeds.”*

Researcher: *“You must have a great supply; do you think so?”*

Participant 2: *“Yeah, got heaps of it.”*

Following a weight gain of 340gms in 8 days: -

Participant 2: *“I’m trying to express so I know how much I have and to boost my supply.”*

Researcher: *“So you’re on track do you think?”*

Participant 2: *“Well apparently I won’t run out of milk and will actually boost my supply by feeding so much.”*

Participant 2: *“Obviously my theory worked about feeding on one side for about three or four times before swapping, then she is getting more fat content from my milk.”*

Participant 2’s account appears to describe block feeding but not with the purpose of remedying an overabundant supply, which would be a typical clinical recommendation. Her intention appeared to have been ensuring good breast drainage, and maximising fat intake for the baby. Participant 2’s breastfeeding experiences and lactation management did not align with clinical definitions and indications for

intervention. Neither did they match typical challenges experienced by obese women, noted in the literature, such as reduced supply or delayed secretory activation. Her focus appeared to be on lactation supply and baby weight, potentially reflecting awareness of these issues, but without awareness of problems associated with excessive increases in either; or conversely, a reduction in supply as a consequence of block feeding management<sup>9</sup>. She expressed a level of satisfaction with how breastfeeding developed for her. I got the sense that she felt she pre-empted and avoided issues such as poor weight gains and reduced lactation, and thus enjoyed an uncomplicated breastfeeding relationship.

Understanding what is perceived as, 'normal breastfeeding' from the perspectives of the first two participants is challenging. The concept of "normality" appears to be broad in respect to breastfeeding and infant weight; the participants' interpretations differing from clinical definitions. Unlike clinical perspectives, which are concerned with measurements and timeframes, defining one's own experience as normal or otherwise is potentially more personal and measured against factors such as previous experiences, culture, expectations, family stories etc. The concept of normality and its implications for further interpretation of the data is a topic I will resume in the next chapter. Participant 2 demonstrated considerable confidence in her breastfeeding knowledge. This may have reflected her multiparity; or, it is possible that the communication modality of social media influenced how she expressed herself. I will resume this discussion in the following chapter. Both concepts of 'normality' and

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<sup>9</sup> At this point I acknowledged the ethical consideration of potential lactation mismanagement. I reminded Participant 2 to discuss breastfeeding with her midwife, which she said she would do.

'autonomy' can be considered breastfeeding influencers for Participants 1 and 2; yet whether they were barriers or facilitators is less set.

## **The Partnership Approach to Maternity Care**

Within the theme of the 'Partnership Approach to Maternity Care', communication was again noted to be highly influential to how this was experienced. Partnership was referenced by client and midwife participants. It was seen to support the clients' autonomy; and was understood as 'normal maternity care', therefore strengthening the clients' identity as 'normal women'. Conversely, the lack of partnership approach in clinic and postnatal ward was experienced as detrimental in these respects. Participants 3 and 4 distinguished between clinic or ward care, and the partnership experienced with LMCs. I make this distinction here to highlight that partnership or lack of partnership did not seem to be a comparison of medical or midwifery approach for participants, but a reflection of organisational structure influencing how care is delivered.

Participant 3 considered breastfeeding support or messages out of context to be counterproductive, "*You get your zealots that kind of push, push, push;*" advocating instead for breastfeeding support to be "*prepositioned;*" by which she meant, coming from within a conversation and a relationship, where personal circumstances are acknowledged. Her experience of postnatal ward appeared to have been one of tolerance, and engagement with staff was not sought. This is likely to stem from a previous poor experience of postnatal ward care as she mentioned; a repetition of which she was determined to avoid.

Participant 4 revealed that the midwifery partnership between herself and her LMC was based on trust and experienced positively. She sought the support of her midwife when she felt desperate:

*“I talked to my midwife about it, [...] I was kind of at the end of my tether and I said there’s nothing wrong. Everything... he’s healthy. And she agreed. I only saw her from that point on.”*

She reported limited continuity on postnatal ward, to which she attributed the stress and confusion she experienced in the early postpartum: *“It was really confusing and stressful and I thought I would be better off just going home and trying to figure it out myself.”*

Participants 3 and 4 voiced opinions that positive experiences of partnership were empowering. Having relationships of trust with their LMCs was a feature of maternity care relied upon to support resilience and autonomy, through individualisation of their care and encouragement of participation. For Participant 4, partnership and participation were absent from the obstetric clinic, while Participant 3 did not engage with clinic.

The implication that the presence of the midwifery partnership was an expectation of normal maternity care, was made by frequent references such as *“my midwife told me that,”* and *“I talked to my own midwife,”* so imbedded in the language, that direct reference to it was not made. The experience of midwifery partnership was perceived by Participants 3 and 4 to strengthen autonomy and therefore facilitate breastfeeding.

Like the interviewed women, the midwives referenced the 'partnership approach to maternity care' frequently. They included opinions on the effect that the issue of obesity had on midwifery practice in terms of: the relevance of midwifery knowledge and skills; and the importance of the midwifery partnership and its preservation, in the context of primary care/secondary care interface. *"Women with a raised BMI are certainly changing how midwives are working."* (Midwife 1)

Midwife 1 thought of the midwifery partnership as an important tool for providing good care to obese women, but that it was challenged by obesity as a construct.

*"The LMC, you're the primary carers, ought to be doing the breastfeeding talk to these women [...] and going through it from the point of view that they can break the cycle."* (Midwife 1)

*"The manner of how a midwife approaches the partnership with the woman can be quite challenging [...] get across in a non-judgemental way that increased surveillance is because of her size."* (Midwife 1)

She considered the midwifery partnership to be a facilitator to exclusive breastfeeding, and a key factor for preventing obesity in the infant. *"Midwifery partnership is absolutely the key."*

Midwife 2 spoke of her frustration at what she perceived as the generic high-risk status of obese women and how this influenced the care she provided: *"We're now treating women like they're all going to be abnormal. It's frustrating. [...] Because we're becoming very medicalised again in this hospital."* In contrast to the other interviewed

midwives, Midwife 2 reports no BMI range in labour management requirements (such as induction or augmentation of labour), or exclusive breastfeeding rates or support needs; inferring that changes to her practise are driven by Section 88 Referral Guidelines, rather than individual needs of women with obesity.

Midwife 3 was the LMC for the outlier Participant 5. I will present data pertinent to their partnership in the next section. When discussing supporting obese women in general terms, she expressed concern regarding the relevance of midwifery skills:

*“I find the fact that I can’t accurately palpate and measure very difficult, because it’s a skill that I rely on [...] to have to rely on two-weekly scans is, I don’t like that. I don’t feel that that’s me doing my job the way I am trained to do it. [...] I don’t think that we are adequately prepared for that.”(Midwife 3)*

All three midwives expressed concerns over changes they feel they have needed to make to their practice with regards to obese clients; and all maintained that the midwifery partnership was an important component of maternity care, that they endeavoured to protect. They seemed to have an awareness of obesity stigma and potential impacts to their practice and to the midwifery partnership, but they took different positions. Midwives 1 and 3 believed that there was not sufficient established education or research available to guide their practice and felt concerned about *‘feeling their way;’* that this constituted doing the obese women a disservice. However, Midwife 2 felt that promoting different services or approaches for obese clients had the potential to expose obese women to discriminatory practises. While Midwives 1 and 3 considered the midwifery partnership to be essential to the promotion and support of exclusive breastfeeding, they acknowledged they would benefit from further education



regarding the specific requirements and challenges to breastfeeding for obese women. Midwife 2 did not believe that obesity presented physiological challenges to breastfeeding, believing the challenges to be social in nature, such as obesity stigma, or social deprivation.

All interviewed participants considered the partnership approach to maternity care to be a facilitator of exclusive breastfeeding. Possible factors negating it included; lack of partnership in other areas of maternity care, feeling inadequately trained to meet specific needs of obese women, and frustration regarding primary care/secondary care interface.

## **Interventions in Pregnancy, Labour and Infant Feeding**

The theme of 'Interventions for Obese Women' emerged as an umbrella term for several subsidiary themes. In this section I will introduce the clients' views of interventions, and how they were experienced, together with the midwives' views on interventions in pregnancy and labour, which includes their views on the medicalisation of obese women and defensive practice, which were subordinate themes. In the section that follows, I will introduce and describe the midwives' views and experiences of interventions and effects on lactation.

The views of the client participants implied that it was not the intervention alone (in isolation) that caused them concern, but how it was delivered to them, and subsequent effects on their autonomy and their identity as normal women. It referred specifically to how medicalisation was experienced by the women, and whether it was perceived as relevant and individualised, or unwarranted and generic.

Unfortunately, Participant 3 made many comments regarding medicalisation before and after the interview which I noted, but did not record; therefore, I have not included quotations. However, she communicated that learning from previous experiences, she anticipated that medicalisation of her pregnancy would occur unnecessarily, and therefore did not attend obstetric clinic.

Participant 4 questioned the value of obstetric clinic; *“Why the need for a referral? [..]There doesn’t seem to be any point for women to come in for doctors to say “this, this, this and this, bye.””* She considered the medicalisation of her pregnancy to be generic, falling short of her expectations. *“It’s specifically around the high BMI. From the moment I got pregnant. [..] I thought I was going specifically to learn about having a healthy pregnancy, but that wasn’t discussed.”*

She reported that she did not understand that when all signs of fetal and maternal health were reassuring, the doctor advised against vaginal birth; *“Perhaps you should consider scheduling a caesarean.”* Participant 4 reported feeling disempowered by the end of her pregnancy. She perceived the basis for clinical decisions as discriminatory.

*“I felt like I was doing everything wrong, and I think perhaps if the approach was taken slightly differently then, yeah. And it may have been surrounding his birth. It may have been residual from the pregnancy.”*

On the postnatal ward Participant 4 experienced further interventions. On the baby’s third day of life, his weight and blood sugar levels were measured and found to be within normal parameters according to hospital protocols. However, he was commenced on two hourly artificial formula supplements, although referral to a

lactation consultant was not made. Participant 4 did not question the relevance of interventions to the baby but notes that they served to decrease her confidence in her lactation, *“I suggested to my midwife that perhaps although there’s some quantity, there’s not, no quality in my breastmilk. [...]I kind of threw in the towel.”* Participant 4’s experiences of interventions in the maternity journey appear to have been barriers to exclusive breastfeeding, however, she often framed them within an emotional context – how her confidence and resilience was affected by the experience. She expressed confusion when her experience of her normal healthy body and baby, was not supported by the clinicians.

The midwives believed that women with obesity were subjected to a higher rate of intervention throughout their maternity care than other women. This belief was in line with the ‘inductions of labour’ and ‘mode of birth’ comparisons for the study site in 2014, presented earlier. The interviewed midwives showed concerned regarding the level of interventions experienced by obese women. Midwife 1 pointed out that obesity alone was not an indication for labour induction, but noted some interventions that she considered warranted; *“[...]it’s not really a documented indication for induction of labour”*

*“It’s difficult to monitor the baby during labour so [...] they have an early artificial rupture of membranes and they site internal scalp electrodes. So quite a bit of intervention early on.”* (Midwife 1)

Midwife 1 introduced the issue of ‘cascades of intervention’ for obese women, understanding it as a potential barrier to exclusive (or possibly ‘any’) breastfeeding.

*“So, these women are at risk of increased IV fluid overload [...] There is a growing body of evidence to say they have ineffectual contractions. [...] They have an increased risk of caesarean section, which in turn, does influence the milk, or lactogenesis 2.” (Midwife 1)*

The increased rate of interventions was noted by the midwives to influence a woman’s emotional health and confidence in her body, which they understood to ultimately impact on the obese woman’s ability to lactate and her confidence and desire to try in case of failure.

*“[...]she’d probably think, “Oh I, leave me alone, let me get out of here. [...] at least I can formula feed my baby well, because I can see how much she’s getting,” [...] instead of trusting their body. Their body’s let them down in a way, haven’t they?” (Midwife 1)*

In addition to acknowledging warranted interventions for obese women in maternity care, the midwives also considered some practice to be defensive. Midwife 2 thought that applying management in pregnancy based on BMI alone was defensive and discriminatory: *“We’re just trying to protect our backsides. [...] too frightened to do anything else.”* She perceived a discordance with what was considered safe practice and defensive practice; to what lengths risks ought to be pre-empted, versus reacting to abnormal events, possibly reflecting dissonance between midwifery training in keeping birth normal, and maternity unit policy for risk management.

Two midwives questioned the effectiveness of approaches employed by individual medical practitioners in obstetric clinic. *“The majority of them (clients) have*

*quite a negative opinion about someone in authority telling them that they just need to lose weight.” (Midwife 2.)*

Midwife 3 thought that clinic interventions sometimes amounted to obesity stigma, *“there are some people still living in an archaic time of thinking that it’s totally appropriate to fat shame;”* though she acknowledged this to be individual, and not necessarily reflecting clinic culture.

The thoughts of the midwives regarding interventions for obese women appear to reflect their views that the risks associated with obesity for pregnant or labouring women noted in the research, were not necessarily applicable to all obese women, but thought this was not acknowledged in obstetric clinic. Implicit in their interviews was the awareness that defensive and discriminatory practise was a risk in the maternity care planning of the obese client, and that this, along with indicated interventions, posed a threat to breastfeeding.

## **The Effect of Interventions on Lactation**

Midwives 1 and 3 believed that interventions in labour had the potential to impact on breastfeeding exclusivity and went on to discuss their interpretation of normal oxytocin pathways in labour and lactation, and the potential blunting by use of synthetic oxytocin. They surmised that if obese women were subjected to a higher level of interventions in labour, as they believed to be the case, this would negatively impact upon lactation and lead to supplementation with artificial formula: *“I suppose, delayed response.. the babies could get, well the mothers could be offered formula at an earlier time.” (Midwife 1)*

*“Well the fact that obesity rates are on the rise. I mean it would be absolutely ridiculous to not consider the impact that’s going to have not only on breastfeeding, but on labour and birth and, you know, adequate antenatal care [...] I don’t see how it couldn’t impact on the breastfeeding.” (Midwife 3)*

Midwives 1 and 3 believed obesity had a negative impact on labour initiation and progress, and lactation success. Additionally, they believed that interventions in labour had the potential to impede the physiological process of lactation and was a potential barrier to exclusive breastfeeding for obese women. Midwife 2 however, reported that she did not think obesity impacted on labour initiation, progress or lactation, *“not that I see.”*

The different viewpoints of the midwives can be understood as a metaphor for the challenges that obesity poses to maternity care practices. The midwives were not unanimous in their beliefs surrounding the impact of obesity on the normal physiology of pregnancy, labour and lactation; neither were they in agreement regarding best practices to optimise outcomes. All three midwives thought that obesity stigma could potentially influence clinical decision making to various degrees. This highlights the challenges to establishing the best practices for the maternity care of the obese woman well; reduced unanimity concerning risks to the mother or baby resulting from obesity, the extent to which risks, or adverse events should be pre-empted or reacted to, and the acknowledgment of the effect of inherent obesity stigma influencing interpretation and decision-making in clinical settings.

## **Vignette of Participant 5's experience**

It was apparent that Participant 5's viewpoint and situation did not correlate well with the other clients or midwife participants. However, it raised additional perspectives on breastfeeding determinants. I will present her experience separately, through her own words, and those of her midwife, Midwife 3.

For the other study participants, experiences were examined in terms of barriers and facilitators to exclusive breastfeeding; specifically, influencers on the duration of exclusive breastfeeding. An inclusion criterion for recruitment to the study had been, 'intention to exclusively breastfeed', and Participant 5 had reported that she met inclusion criteria. However, during data analysis, Participant 5's comments appeared to relate to factors influencing 'intention to breastfeed' rather than 'duration of breastfeeding.' It is conceivable that Participant 5 did not meet inclusion criteria, and therefore the relevance of her themes to the study question is debatable. However, as a study participant, her themes are included. This is a possible explanation for variance of themes emerging from Participant 5's data, compared to other participants. From the researcher's perspective Participant 5's experiences of breastfeeding were challenging to reconcile. I wrote a personal reflection on her experiences, and I reviewed her midwife's transcript before continuing. The theme of 'safety and transparency' arose from this exercise.

### **Safety and transparency**

An important context to Participant 5's experiences was that she was a multiparous woman, and her first child was not in her care. It is possible that this influenced her perception of maternity professionals, and researchers, and restricted

how safe she felt when disclosing breastfeeding intentions. Despite Participant 5 reporting that she intended to breastfeed, her midwife and interviewer both interpreted this woman's intention to breastfeed as reduced. I got the sense that she did not feel safe enough to report this, either to her midwife within the midwifery partnership, or during the interview. Midwife 3 thought that some things were said to please her, and did not reflect the woman's true opinions or intentions.

*"[.] she wanted people to think it was all going well. [.] She wanted to tell people the right things. [.] she didn't breastfeed her first child, but also her first child only lived with her for a short period of time. [.] this is really the first child that this woman has had in her care. I don't know that breastfeeding was high on her priority list."* (Midwife 3)

## **Reasons given for Breastfeeding Cessation**

I had the sense that Participant 5 justified her breastfeeding decisions by apportioning outcomes to external factors and therefore rendering them unchallengeable. Participant 5 framed her breastfeeding journey as being beyond her control, dictated by external experiences that she and her baby were victim to. However, reduced intention to breastfeed, coupled with reduced ability to be transparent with maternity care providers seems an equally plausible interpretation.

*"I think in a lot of ways, she was very happy to come up with reasons why she couldn't [continue breastfeeding], I think it was an easy jump for her, to go to formula."* (Midwife 3)



## **Breastfeeding cessation was attributed to infant apnoea**

Participant 5 described her baby's development of apnoea as the primary reason that her breastfeeding was curtailed, explaining that apnoea events occurred more frequently at the breast than when using a bottle. She elaborated on her understanding of apnoea, *"This is a true moment. I can't do two things at once, live and breathe. Eat and breathe."* (Participant 5)

Although her midwife questioned the validity of this understanding of breastfeeding versus bottle feeding and the frequency of occurrence of apnoea episodes, Participant 5 remained of this opinion. Unexplored is the extent to which Participant 5 can see the baby breathing at the breast or bottle, which may have been a consideration.

## **Maternal Nutrition**

The issue of nutrition was reported by Participant 5 as an influencer to her breastfeeding choices. This is seemingly a modifiable variable, but notably, her story changed at points throughout the interview. She reported that her consumption of food of low nutritional quality or *"junkie food"* and lack of exercise, were impediments to the nutritional quality of her breastmilk and therefore barriers to breastfeeding, making frequent references to these issues. However, she also reports,

*"Well I always have anyways. [eaten well] Before I got pregnant with him, I'd started lifting at the gym, you know, so protein shakes and heaps of veggies and fruit and everything."* (Participant 5)

She reports having a healthy diet since becoming pregnant but returns to the subject of junk food and milk quality a few times.

*“Well, I noticed that if I was just having, like, a junkie meal, and that, I knew.. I noticed that he wasn’t really getting as much as when I’d have a proper full meal. You know, like, eggs, veg, and all that.” (Participant 5)*

Elsewhere in the interview, when asked about recommendations for change to the maternity service, Participant 5 remarks;

*“[ ] you know how they say.. they do say, you do get told to eat right, and everything, but not how it really.. and how it is important but not how, actually important it is. Like, with me well, well I don’t know, they could have actually. But I just noticing what you eat, and how the like and difference that you note, like they’re thicker. [..] I noticed that I wasn’t eating properly, my milk was a bit more like, see through.” (Participant 5)*

Maternal diet was understood by Participant 5 to influence breastmilk quality, and she underscored this by her recollection that her breastmilk became transparent to some degree following not eating well. She presents this as a barrier to breastfeeding in her situation.

## **The Experience of Breastfeeding for Participant 5**

Both Participant 5 and Midwife 3 reported that lactation was not delayed, and there were no latching challenges or milk supply issues; which are reported as risks for obese women in the reviewed research. Participant 5 did not have any interventions in labour and had a normal vaginal birth.

Researcher: *“When did your milk come in do you think?”*

Participant 5: *“I think it was straight away.”*

And her midwife was in agreement with this,

*Researcher: "Did she have a delayed lactation?"*

*Midwife 3: "No, I don't believe that she did."*

Regarding experiences of latching baby to the breast, and supply;

*Researcher: "Was latching easy or difficult when baby was born?"*

*Participant 5: "Easy. [...] Yeah real easy."*

*Researcher: "You were expressing when you were breastfeeding?"*

*Participant 5: "yeah"*

*Researcher: "How come?"*

*Participant 5: "Too full."*

There is no point in the interview where Participant 5 ascribes any breastfeeding challenge to her obesity. It appears that she did not have physiological challenges to lactation or latching challenges, and she does not report any obesity-based discrimination in clinic approach to her care. She maintained throughout, that she had a positive self-image, and her midwife substantiated this, while noting it as a barrier to addressing health needs during pregnancy.

*"I did have conversations with her in pregnancy about her size and weight. She frequently just said to me that she thought she was beautiful, which I thought was absolutely fantastic. [...] I did find it a bit difficult then to be able to talk to her about health consequences of being overweight." (Midwife 3)*

## **Conclusion to Participant 5's story**

From the researcher's perspective it was challenging to interpret Participant 5's breastfeeding experience. Potentially she had reduced intention to breastfeed, an interpretation that is shared by her midwife. She does not reflect on any themes similar to those raised by other participants such as autonomy, normality, communication or the midwifery partnership as influencing her breastfeeding duration or how she perceived her care. The factors she reported as influencing her infant feeding choices amount to baby safety issues – breathing and nutritional quality of her milk. Possible experience of lack of safety within the maternity care setting and by extension, within the interview setting, may have influenced how Participant 5 communicated her health needs and shared her experiences, due to her life situation.

## **Summary of study findings**

The client and midwife participants' narratives introduced five themes in answer to the research question; "What are the barriers and facilitators to exclusive breastfeeding experienced by women with a BMI equalling or exceeding 35kg/m<sup>2</sup>?" Participant 5 introduced a further two themes and did not share any themes with other participants. This was in response to data collection using the Facebook social media format, and semi-structured one-to-one interviews. One consideration in study design had been to allow themes to arise and develop with minimal direction from the interviewer. I believe this occurred due to the wide spectrum of themes that arose. The themes will be considered in the discussion chapter that follows, in relation to the literature reviewed on factors that influence exclusive breastfeeding duration in obese women.

# **CHAPTER FIVE: DISCUSSION & CONCLUSION**

## **Overview of discussion**

The discussion chapter will draw together the threads of the thesis brought forth in previous chapters to a conclusion. This will include a return to the original ideas and observations which prompted the study, and their progression from that point. I will review the themes that emerged from the study data, and the interpretation of them by participants and researcher, as barriers or facilitators to exclusive breastfeeding for clients concerned. I will relate study findings to the literature explored, and the snapshot of the study site outcomes, drawing parallels or contrasts where applicable. The chapter will review the study methodology and design, strengths and limitations of the approach, along with suggested directions for future research in this area. Finally, I will offer thoughts on current challenges to maternity provision at the study site for obese consumers and suggest areas for review.

## **Origins of study ideas**

I embarked on this study following lactation consultant education in 2012, which acknowledged increased breastfeeding challenges for obese women but offered few management strategies to the clinician. Following this observation, I noted research demonstrating exclusive breastfeeding for six months to be protective of obesity for the mother (Harder, Bergmann, Kallischnigg, & Plagemann, 2005; Horta & Victora, 2013; Yan, Liu, Zhu, Huang, & Wang, 2016); and theorists such as Dabelea (2011), and Adamo (2012) write further on the theoretical intergenerational cycle of obesity including the

impact of breastfeeding/not breastfeeding on future obesity proclivity for the infant (Adamo, Ferraro, & Brett, 2012; Dabelea & Crume, 2011).

I went on to review perspectives on obesity relevant to maternity care including social and physiological determinants of obesity pertinent to the mother/infant dyad. These have included; obesity co-morbidities (Drake & Reynolds, 2010; Ryan, 2007), obesity and poverty correlations (Lee, Harris, & Gordon-Larsen, 2009; Prentice, 2006), clinical outcomes and risks to the mother/infant dyad associated with obesity (Kristensen, Vestergaard, Wisborg, Kesmodel, & Secher, 2005; Sebire et al., 2001), and historic obesity drivers (Swinburn et al., 2011). The purpose of this approach was to develop a holistic picture of obesity related influencers acting on the obese pregnant, intrapartum or breastfeeding woman, and how resultant maternity clinical outcomes may, in turn, become obesity determinants to the infant. Accomplishing this was expected to facilitate a more comprehensive appreciation of how the experiences of obese women (social, physiological and obstetric) influence breastfeeding; and how said experiences, including the experiences of breastfeeding, contribute to the perpetuation of obesity currently observed in modern cultures (James, Leach, Kalamara, & Shayeghi, 2001; Wang & Lobstein, 2006).

I reviewed the clinical outcomes for women using the study site maternity unit in 2014, according to BMI categories, with permission of the study site midwifery manager. Cursory data suggested there was a BMI range to modes of birth, inductions of labour rates and breastfeeding exclusivity for this period. As a midwife and lactation consultant, I decided to talk to women with a BMI exceeding or equalling  $35\text{kg}/\text{m}^2$

regarding their experiences of breastfeeding and breastfeeding support, to see if breastfeeding support practices would benefit from review at the study site.

I went on to review research perspectives on breastfeeding and obesity and found extensive research and varying theoretical positions. I confined the literature review for this study, to research or research reviews which examined the ‘factors influencing the duration of exclusive breastfeeding’ within the context of maternal obesity. This was to draw together the threads of discussion raised in the introduction chapter, which included: -

- the impact of maternal obesity on maternal physiological processes involved in pregnancy, intrapartum and lactation;
- corresponding clinical outcomes;
- the influence of clinical outcomes (mode of birth and infant feeding method) on obesity trends and infant health;

with the reviewed research perspectives on maternal obesity and reduced breastfeeding duration. In doing so I have positioned breastfeeding experiences within the wider clinical picture of maternal obesity, due to my belief that it would be useful and realistic to elucidate on context and background to obesity in view of the study aim of informing service review. The purpose of this was to acknowledge the interrelation of maternity clinical outcomes, including breastfeeding, and obesity perspectives.

## **Review of findings**

Following this undertaking with existent research perspectives, I proceeded to administer the research study I had designed, with the design adaptations discussed

previously. In this section, I will discuss the key findings of the research. The client and midwife participants had common and unique themes. I will present them in the following order, due to how they interrelate;

- Communication – a common theme for clients and midwives
- Autonomy and normality – a unique theme for clients
- The partnership approach - a common theme for clients and midwives
- The experience of interventions - a common theme for clients and midwives
- The effects of interventions on lactation – a unique theme for midwives.

Within each section I will include reference to the research question and the participants' interpretation of the theme as a breastfeeding barrier or facilitator, and the researcher perspective. Once breastfeeding barriers and facilitators are identified, I will relate them to implications for research, practice and draw potential conclusions that are relevant to the study site hospital. Notably, the semi-structured interview design, compared to the Facebook design, gave the participants freedom to reflect on issues they considered to be relevant to the research question and did not confine them to the specific topic of breastfeeding.

## **Experience and interpretation of communication in clinical episodes**

'Communication' emerged as the dominant theme for all participants (with the exception of the outlier participant), underpinning other themes. Communication theorists such as Barnett Pearce (2009), assert that the meaning of clinical episodes is in the interpretation as much as the intent, with clinical and social contexts, family story,



cultural beliefs, influencing both intent and interpretation of meaning (Barnett Pearce, 2009). For this study, experiences of obesity and obesity stigma were understood to provide context and influence meaning, along with other social contexts.

Interpretations of 'autonomy' and 'normality,' were derived from how clinical communication episodes were experienced. Experiences of 'communication', 'autonomy,' and the self-identification of 'normal', underpinned the other themes of; 'the partnership approach,' and 'experiences of intervention.'

Chapter four also introduced the themes of 'maternal diet', and 'infant health' as breastfeeding influencers for Participant 5. These were understood within the context of 'safety and transparency' in clinical relationships and did not align well with other participant data.

## **The interrelatedness of the concepts 'Normality' and 'Autonomy' in this study**

The distinct concepts of 'normality' and 'autonomy' were interrelated in this study, and therefore, presented together. Through the data analysis process, it became apparent that these two themes were reciprocal, neither being subordinate. The participants' ability to identify as 'normal women,' and the preservation of their 'autonomy' underpinned their understanding of the maternity journey, and experiences.

### **Autonomy**

Autonomy was a central finding in this study. In New Zealand maternity care, the autonomy of the woman is respected, and midwives are autonomous practitioners. Section 88 Maternity Referral Guidelines (2007), may recommend the sharing or

transferring of clinical responsibility to the obstetric team due to stated conditions of medical complexity (Ministry of Health, 2007), but the woman's rights, decision-making capacity and involvement in her care, ought to remain.

The National Maternity Standards (2011), Standard Two, states that maternity services provide a '*woman-centred approach*' and stipulates that all women will have access to;

- Nationally consistent information to inform their decision making,
- National frameworks that support continuity of care,
- Culturally appropriate services,
- Continuity of care from a lead maternity carer for primary care (Ministry of Health, 2011)

Standard Three states that nationally consistent and comprehensive maternity services are accessible to all women and there are no financial barriers. It further stipulates;

- women whose care is led by secondary or tertiary services continue to receive continuity of midwifery and obstetric care (Ministry of Health, 2011)

A '*woman centred approach*' that upholds continuity of care and carer (including the obstetrician), underscores the importance of the autonomy of the woman within her maternity journey, and acknowledges maternity experiences as normal life events (Guilliland & Pairman, 1995). Interviewed clients' experience of obstetric clinic provision at the study site belied these standards. It was described as "*humiliating,*" and "*a complete waste of time.*" Experiences of obstetric clinic were reported by clients to

contribute to their decision to disengage with the service, and this related to how they interpreted meaning in clinical communication episodes. One client commented that the clinician was '*nice enough*' and yet, she continued to feel increasingly disempowered. Midwife and client participants alike, expressed the belief that the obstetric clinic service (secondary care) was not 'woman-centred,' and was detrimental to the woman's ability to participate in her care. Study participants reported a reduction of their autonomy, including body confidence, which they attributed to the experience of clinical interactions in obstetric clinic.

In this study, midwives and clients reflected on issues of communication and implications for autonomy. The use of oblique terms risked confusion and misunderstandings, and clients understood many clinical interactions to characterise defensive practise and to stem from negative attitudes towards their body shape rather than clinical information, as found in the Mulherin (2013) study of clinician attitudes to obese clients (Mulherin, Miller, Barlow, Diedrichs, & Thompson, 2013). Studies by Garner (2014), Kair (2016) and Mold (2013), reported weight stigma to have an influence on communication in clinical interactions, similar to study participants (Garner, Ratcliff, Devine, Thornburg, & Rasmussen, 2014; Kair & Colaizy, 2016; Mold & Forbes, 2013). There was a shared belief among interviewed women and midwives, that the autonomy of obese women was compromised for issues relating to communication. This resulted in service dissatisfaction and a belief that it was inadequate to requirements. All interviewed midwives expressed frustration with the current service in terms of their perceptions of its relative usefulness to the obese client, and its potential for negative consequences to the woman's autonomy, echoing findings by

Schmied (2011) who explored midwife experiences and concerns regarding obesity in the maternity setting (Schmied, Duff, Dahlen, Mills, & Kolt, 2011).

The frustration that participant midwives expressed at secondary care services, may reflect an underlying awareness of the potential challenge that obstetric clinic poses to the clients' autonomy, coupled with the fundamental midwifery role of the empowering of women throughout the maternity journey (New Zealand College of Midwives, 2017a). This questions the integrity and durability of the primary/secondary care interface, in the face of obesity maternity care. Certainly, one interviewed midwife expressed considerable frustration with clinic services and with Section 88 referral guidelines, reporting that her clients referred to it as '*the fat clinic*' and she did not see any added value from her experiences with clients.

### **Defining the term 'Normal'**

The concept of 'normality' appeared as another pervasive theme through the study and was an unexpected finding. The theme of 'normality' did not emerge from a specific question addressed to participants. However, all client participants referred to themselves, their pregnancy, their baby or their breastfeeding as normal, either directly or indirectly. How participants defined and experienced 'normal' and their experience of personal autonomy through the maternity journey influenced all other participant themes.

### **The clinical meanings of 'normal'**

The term 'normal' is a frequently used term in maternity care to describe experiences or test results that fall within given reference ranges; including 'normal labour' and 'normal vaginal birth'. It is used as a way of emphasizing distinctions and

limitations; *normal* midwifery care emphasizes its difference from obstetric led care (Kennedy & Shannon, 2003) Importantly, clinical use of the term 'normal' implies expected reference ranges, which may differ from other defined ranges of normal, such as *normal* blood results for a pregnant woman, or *normal* blood sugar levels for a person with diabetes.

### **What did client participants understand by the term 'normal'?**

The clients reflected on how the notion of 'normal' applied to them, as obese pregnant or breastfeeding mothers; yet had awareness that their understanding did not match clinical views, which they attributed to their body size. All client participants refuted that poor health or poor health literacy was applicable to their circumstance and questioned the required or expected submission to medical intervention, on the basis that they were 'normal women.' This seemed to create a conflict between how the participants viewed themselves, and how they sensed maternity services viewed them, influencing their ability or desire to participate. There is considerable discussion in research perspectives and obesity discourse regarding clarity of definitions, causes and solutions of obesity (Gaesser, 2003). The view that poor diet and inactivity trigger obesity is now challenged in the research (Herrick, 2007). The context of 'obesity' and 'obesity stigma' and the prevailing view that obesity is a self-inflicted condition (World Health Organisation, 2016), serve to influence how 'normal' and by association, 'abnormal' is interpreted, therefore influenced clinical relationships. All client participants appeared to identify themselves as 'normal women', with 'normal breastfeeding' experiences, potentially a reaction to obesity stigma and a means of asserting that common understandings of obesity – overeating, poor food knowledge, did not apply to them, or their babies. No participant specifically defined 'normal,' but

did so implicitly through use of terms such as *'healthy,'* and *'nothing wrong.'* Identifying as healthy women, and therefore, normal, seemed integral to their sense of autonomy. The women conveyed that in their understandings, meanings of *'healthy'* and *'obese'* were mutually exclusive; and while they identified as *'healthy,'* clinicians framed them as *'obese,'* against their wishes. Notably, one participant recalled losing autonomy when she noted dissonance between a clinician's perception of her normality/abnormality and her own.

Client participants also experienced and interpreted *'normal breastfeeding'* by criteria different to clinical definitions (Riordan & Wambach, 2010). Three of the clients expressed confidence in breastfeeding and lactation, and did not perceive challenges, as abnormal or unexpected. Participant 5 also expressed breastfeeding confidence; her challenges were not relatable to obesity, but more accurately expressed as choices she made due to infant health concerns. This highlights a difference between how researchers such as Rasmussen (2002), and Rasmussen and Kjolhede (2004), have framed and explored breastfeeding challenges pertaining to maternal obesity, largely focussing on lactational hormone disruptions or changes, and the experience of study participants; essentially relating to underpinnings of *'normal'* (Hilson, Rasmussen, & Kjolhede, 2004; Rasmussen, Hilson, & Kjolhede, 2002). Clients' experience of their own obesity contrasted with their understanding of health issues requiring medical support in pregnancy. Interviewees did not identify as having health issues; further explanation of the recommendations for increased surveillance, or health promotion activity (as was expected by one participant), did not occur in a meaningful way.

## **Interpretations of normality/autonomy experiences**

Findings from this study are not generalisable to a wider population due to the study size and design; however, this finding offers an interesting insight. Client participants defined themselves as 'normal', rejecting other descriptions such as 'high risk'. The Facebook participants did not establish whether their normality pertained to their body size, or their choices, but all interviewed participants considered themselves and their experiences to be 'normal' and that no abnormalities had resulted consequently. Therefore, the experience of their body, and their understanding of the purpose of obstetric clinic did not align.

Discordance between clinical and lay definitions of 'normal' proved unhelpful for participants in this study; for one participant it was detrimental. The discordance appeared to persist from pregnancy through to postnatal care. The personal understanding of 'normal' was a crucial determinant in communication episodes involving the maternity care of obese participants. Potential explanations for miscommunication include the involvement of obesity stigma in lay understandings, and official WHO reports that frame obesity as result of individual lifestyle choices (World Health Organisation, 2016). The rejection of the self-inflicted notion of obesity seemed to influence clients to reject defining themselves as 'obese' altogether, in favour of 'normal'. The terms appeared to be mutually exclusive in their understanding. When Participant 1 revealed her lactation met her baby's requirements by day 14, it was challenging to facilitate any further reflection; possibly as her expectation of 'normal lactation' was met. Her understanding of normal lactation did not align with the accepted definitions (Riordan & Wambach, 2010). Attempting to initiate discussion or

interpretation of it in a neutral way was unsuccessful as fundamental understandings of normal lactation were different.

This finding suggests that miscommunication and lack of clarity occurred in clinical episodes. The researcher questioned whether this originated from a fundamental power imbalance within the clinical relationship, service structure or environment. The participants experienced reduction in autonomy and sense of normality which they related to past or present clinic attendance. Communication between client and clinician had the potential to occur in the context of power imbalance, with the clinician assuming authority and expertise. It is the researcher's opinion that there is a higher risk of this occurring with obese clinic attendees compared to non-obese attendees, as obese women may not experience poor health, or agree with it as a diagnosis, and consider it discrimination. Women may misunderstand communication in this context, reject its meaning, or comply and face risk of reduced autonomy. This reveals a lack of partnership approach and limitation in opportunities to participate in one's health and care.

This finding has interesting implications for clinical practice, language and communication and the partnership approach to maternity care in respect to the care of obese women. There was an incongruity in how clinicians and participants communicated and interpreted 'risk' and 'normality'. For the participants in this study, the 'high-risk' status of their care was understood by them to relate to their weight or body shape, and there was an undercurrent of blame perceived by the interviewed women and midwives. Their experience of their body and health did not align with their interpretation of the clinical approach. They considered themselves healthy women and



were not clear on the appropriateness of the '*high risk*' label; there was a loss of confidence in hospital services. Clinicians were not able to justify the high-risk status or intervention plans to the satisfaction of the women. It was perceived as criticism of the body and its functionality, and two participants considered the approach to be defensive.

### **Implications for breastfeeding**

Client participants shared some breastfeeding challenges acknowledged in the wider research, namely, insufficient lactation or perceived insufficient lactation<sup>10</sup>. Out of the five client participants, only one was discouraged at this, expressing ongoing feelings of guilt. The researcher reflected on the emotional implications of client interpretations of 'normal lactation', and 'normal infant feeding', as it was the same participant who considered the use of formula milk not to be normal, not aligning with other participants in this respect. Specifically, the ability to consider oneself a normal woman or mother favourably influenced the participants' breastfeeding experience and their interpretation of it, regardless of their breastfeeding status. The researcher posits that this may influence breastfeeding longevity and perhaps future feeding choices. This question was not put to participants unfortunately. Design of this study did not enable further clarity on causes of reduced lactation for participants. The wider research presents alterations to hormonal expression as a result of, or exacerbated by, obesity, (Babendure, Reifsnider, Mendias, Moramarco, & Davila, 2015; Riordan & Wambach, 2010), delay of secretory activation including the risk that the introduction of artificial formula presents to lactation (Babendure et al., 2015), and reduced confidence in breastfeeding/lactation ability or social and family influences (Hauff & Demerath, 2012)

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<sup>10</sup> This study did not extend to examining perceived or actual lactation insufficiency.

as potential determinants. Two of the three interviewed midwives agreed with the wider research that these could present breastfeeding challenges to obese women, and the client participants' experiences do not contradict this.

Researcher interpretation of the interrelated themes of communication, normality and autonomy places them as common threads that all women experience in daily living. When positioned in the context of experiencing maternity care as an obese woman, these three threads can be understood to contribute to the woman interpreting her maternity journey experience and outcomes, positively or negatively. The notions of 'humiliation of being pregnant when obese,' and, 'the medicalisation of obesity when pregnant,' which arose in the qualitative research by Furber (2011), resonate well with this study (Furber & McGowan, 2011). Likewise examinations of clinician attitude to obese clients such as Mulherin (2013) and Kair (2016), also support the suggestion in this study, that further scrutiny of clinical communication with obese maternity consumers would benefit clinicians and consumers alike (Kair & Colaizy, 2016; Mulherin, Miller, Barlow, Diedrichs, & Thompson, 2013). Two client participants perceived clinical communication episodes unfavourably, which were then considered barriers to breastfeeding, regardless of when they occurred in the maternity journey; i.e. communication episodes occurring in pregnancy influenced experiences of breastfeeding, irrespective of the subject matter, as it had implications for self-perception, and body confidence.

### **Interpretations of breastmilk substitute use**

Four client participants viewed breastmilk substitute use as 'normal.' Within study parameters this was not assigned as a breastfeeding barrier or facilitator. The

discussion on the potential consequences to autonomy experienced by participants when they, or their choices, were framed as 'not normal' implies that this is not a simple matter. However, from a lactation consultant's perspective, acceptance of breastmilk substitutes as 'normal'<sup>11</sup> would be challenged. This presents an interesting dichotomy for clinicians involved in breastfeeding support and health promotion, which is deeply imbedded in 'what is normal?' and the experience of choice. To be informed that the infant feeding method employed is not 'normal', (even by insinuation, through offering breastfeeding support,) may be received negatively by the mother, and be detrimental to the clinical relationship, if we account for the possibility that the woman may not have experienced choice in this decision. For women interviewed, different perspectives on breastfeeding/formula feeding and normality emerged. Facebook participants displayed no acknowledgement that use of formula milk was outside of infant feeding recommendations (New Zealand Breastfeeding Alliance, 2014). Participant 3 reported that she equated breastfeeding support with suggestion that she was not doing the best for her baby, which she strongly disputed. Participant 4 agreed with clinical definitions that use of formula milk did not align with infant feeding recommendations and revealed that her confidence and emotional wellbeing was affected by this. These points cause me to reflect on whether obese women require an individualised pathway be developed and navigated with them for the support and promotion of breastfeeding, encouraging participation and choice<sup>12</sup>. This is an integral theme of the midwifery partnership model of care (Pairman, 1999), but I suggest it is also relevant to lactation consultants' practice.

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<sup>11</sup> This is part of the wider issue of the normalising of formula milk by formula companies, which I will not address further in this study.

<sup>12</sup> All women would benefit from an individualised pathway, promoting breastfeeding, encouraging participation and choice. This study reflects on whether this is available to obese women at the study site.

Reviewing this theme in its entirety leads me to reflect on how breastfeeding education and support is situated within the maternity journey. For obese clients, I suggest breastfeeding education and support will more successfully occur in the context of a partnership which acknowledges the normality and autonomy of the individual woman; a proposal which is not entirely in line with the BFHI documents for maternity service accreditation which requires the facility to provide breastfeeding information and promotion to pregnant women (New Zealand Breastfeeding Alliance, 2017). The normalising of breastfeeding is more suited to group situations such as antenatal classes, and efforts at organisational levels. As Participant 3 believed, breastfeeding education is optimal when delivered within the context of a relationship. I will go on to discuss how the partnership approach may provide reconciliation of this clinical dilemma.

## **The Midwifery partnership**

The tenets of the *midwifery partnership refined model* as defined by Pairman (1999), include women-centredness, autonomous practice, continuity of carer and pregnancy and childbirth as normal life events; within the contexts of New Zealand society and the Treaty of Waitangi (Pairman, 1999). The partnership approach to maternity care emerged as a theme for both client and midwife participants. Furthermore, it was understood as being constructed in *communication*, and a standard or representation of *normality*, to which all service-users are entitled, as per National Maternity Standards, standard two and three (Ministry of Health, 2011). Interviewed midwives experienced the 'midwifery partnership' as encompassing all other elements of their role. They indicated that they facilitate the maternity journey through the

partnership with the woman, and this included the facilitation of exclusive breastfeeding. Within this study, midwife participants thought that the system in place to oversee or manage the pregnancy care of obese women was potentially undermining to the midwifery partnership and could go on to have negative consequences for breastfeeding outcomes.

### **The social construct of *obesity* affecting partnership**

The midwives reported that 'obesity' itself created a challenge to the midwifery partnership. They experienced challenges in discussing topics such as maternity-related clinical risks associated with obesity, and they suggested this stemmed from obesity stigma overshadowing attitudes to obesity in society. Similar to the study of midwife perspectives by Schmied (2011), interviewed midwives seemed keenly aware of stigma, communication challenges, and poor maternity service response to increasing obesity amongst service users (Schmied, Duff, Dahlen, Mills, & Kolt, 2011). They were concerned that in addressing obesity with their client, they could cause the client harm, and the partnership would be damaged as a result. Midwives reported that they do not routinely address obesity with their clients, do not routinely refer them to obstetric clinic, or alternatively, refer obese clients to clinic for other reasons, leaving off the relevant BMI referral category, for fear of damaging the midwifery partnership. This demonstrated an implicit consciousness of the importance of a positive midwifery partnership to client (and midwife) outcomes, and a fear that conversations centred on obesity would have an adverse effect on it. Aware that partnership is central to midwifery, the interviewed midwives, and anecdotally noted from conversations with non-participating midwives, considered the way they chose to address obesity with

clients reflected their struggle to protect the partnership, which they valued as their role.

Communication and language was a strong motif throughout the theme of the 'midwifery partnership'. The midwives displayed appreciation for the importance of effective communication to the partnership but thought that the context of 'obesity' influenced when topics were introduced for discussion, how they were communicated, and concerns regarding how they were received. The researcher noted the midwives' awareness that communication and language could be a breastfeeding barrier or facilitator, depending on interpretation. The midwives noted that they have not received education in this area, implying that efforts were individual.

### **The clients' view of Partnership**

Clients were less direct than midwives in their referencing of the midwifery partnership<sup>13</sup>. Yet it was clear in their language, they considered the partnership approach as the foundation of 'normal' care, strengthening their identity as 'normal,' healthy women. Their language suggested they experienced partnership as an empowering, reciprocal relationship that facilitated their participation in developing and meeting health goals. This was particularly apparent when compared to secondary care clinic experiences, which they seemed to experience as the passive or obedient party. Perception of obedience in this scenario may be related to a reduction in autonomy experienced by the interviewed clients. Experiencing partnership in maternity care appeared to facilitate clients being active decision-makers in their maternity journey. It involved 'communication' and 'autonomy and normality' as interrelated concepts.

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<sup>13</sup> No interviewed clients had an obstetrician as lead maternity carer, restricting comparison or extrapolation.

## **How the partnership approach affected breastfeeding**

The experience of a positive midwifery partnership, and ability to participate in their own journey, appeared to influence autonomy within this study; a positive experience of which was understood as a facilitator to breastfeeding for participants. The partnership approach empowered the women, and a journey where they perceived the reactions of clinicians as reinforcing their normality and recognition of pregnancy as a normal life event, enhanced their experience and confidence in meeting breastfeeding goals. Conversely, if the experience of clinical interactions continued to reinforce that they were not normal women, they had health risks, and they perceived judgement, their confidence began to diminish. For midwives and client participants, the partnership model stood in contrast to the clinic-based approach at the study site, which was experienced and understood by participant clients and midwives as formulaic rather than individual. However, the existing structure of obstetric clinics is not an essential feature of obstetric care, but a traditional method of care delivery. It would be conceivable to develop an alternate approach for secondary care delivery; one that facilitates partnership and participation with the purpose of improving client (and midwife) experiences, which could conceivably improve maternity clinical outcomes for obese women, including experiences of breastfeeding.

## **Experience of intervention**

This section discusses how client and midwife participants perceived interventions in maternity care. Research studies examined such as those by Bogaerts (2013) and Heslehurst (2008) noted correlation between obesity and increased risk of interventions, whereas Amir (2007) reviewed the effect of intrapartum interventions on

lactational hormone expression (Amir, 2007; Bogaerts, Witters, Van den Bergh, Jans, & Devlieger, 2013; Heslehurst et al., 2008). The midwives in this study discussed their understanding of the implications of interventions in a similar way. However, client participants were more concerned with how interventions were communicated to them, how relevant they thought the intervention was to them as individual women, and how their emotional wellbeing was affected. The clients discussed their interpretations of communication concerning interventions; how this related to autonomy and normality, and as such how they then went on to experience the intervention and experiences that followed, such as breastfeeding. Interestingly, it was understandings of clinical decisions, maintenance of autonomy and sense of normality that influenced their experience of the intervention, rather than the intervention itself. If the women did not understand or agree with the indication for interventions, or considered it was generic and, '*due to the BMI*' (Participant 4), then their ability to retain their autonomy was challenged, and thus it became a barrier to exclusive breastfeeding. The midwives spoke of their understanding of indications for interventions in the care of obese women, justifications or criticisms of it, and their views of how interventions in labour had the propensity to influence breastfeeding success.

### **The clients' experience of intervention<sup>14</sup>**

#### *The initial referral to obstetric clinic.*

The initial referral to obstetric clinic<sup>15</sup> was discussed by clients as an intervention that was not satisfactorily explained or understood; consequently, clients queried its

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<sup>14</sup> Due to the study design, Facebook participants did not comment on pregnancy or intrapartum experiences. Participant 5 discussion of interventions was minimal. The following section discusses the views of Participants 3 and 4.



relevance and clinical indication. During interviews, participants queried the rationale for the initial referral to obstetric clinic, considered the referral generic based on body shape rather than clinical need, and expressed a desire for equitable treatment with non-obese clinic attendees (which they implied they did not experience). This bears similarities to study themes uncovered by Mills (2013) who also demonstrated perceived stigma by service users in clinical approaches to the pregnancy care of obese women (Mills, Schmied, & Dahlen, 2013). From the beginning of clients' engagement with maternity services there was a perceived incongruity with the expectation and reality of clinic experiences, and lack of meaning in their clinical communication episodes.

#### *The experience of clinic appointments*

Participants did not interpret clinic appointments favourably. They perceived experiences as criticism, and recognised no added value. Their self-perception did not align well with being labelled as women with '*complex needs*' or '*obese*'. Therefore, clients engaged with obstetric clinic without comprehending it or experiencing benefit; increasing the risk of disengagement with services, which occurred with both participants.

Participants did not experience obstetric clinic care as participatory, and this was a threat to their autonomy. One client interpreted the suggestion for planning a caesarean section by clinic staff as without clinical relevance. She went on to have a caesarean birth, remaining unaware of the indication. The scope of this study did not extend to auditing notes; therefore, review of clinical indications and clinical decisions

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<sup>15</sup> 'Obstetric clinic' refers to the obstetrician run clinic which provides pregnant women with appropriate medical surveillance, if they have medical complications which are either predate pregnancy or have arisen in pregnancy.

was not possible. Nevertheless, this demonstrated a miscommunication between clinician and client, with ramifications for how the client interpreted clinical decisions and interventions, and subsequent effects on emotional wellbeing and autonomy. Participant 4 thought that her reduced lactation was attributable in part, to her experiences in pregnancy which led to reduced autonomy.

This provides indications for review of approaches to the care of obese maternity consumers at the study site. Two participants in this study reported that obstetric clinic was not relevant to their needs and thought it did not improve their outcomes. Therefore, its purpose was not achieved; that being, a higher level of focussed pregnancy surveillance, the pre-empting of adverse situations and the optimising of clinical outcomes (Catalano, 2007).

Study participants believed that their wellbeing and breastfeeding outcomes were detrimentally affected by what they perceived as a fragmented approach to their care, and they were not in agreement that interventions were indicated. This represents a dissonance with clinical opinion, and the view that interventions were not well explained. Findings in the research by Dutton (2010), which revealed that obesity increased the risk of vague language, are of a similar theme (Dutton et al., 2010). Similarly, the review by Puhl and Heuer (2009), questioned the efficacy of care and underlying attitude to the obese client by clinician, forwarding the view that obesity stigma may contribute to the perpetuation of obesity (Puhl & Heuer, 2009).

This finding specifically refers to how client participants experienced interventions in their maternity journey, and whether they thought there were implications for their breastfeeding. They reported an unfavourable experience of

intervention which resulted from lack of clarity and perceived stigma, and this, they thought, negatively impacted on their ability to breastfeed.

### **The midwives' experiences of pregnancy and intrapartum interventions**

The midwives' experiences and opinions regarding indications for, and consequences of, interventions in the maternity care of obese women were broad; and this may reflect the semi-structured interview style used. They thought that both obesity as a physical state, and labour interventions had the potential to negatively influence breastfeeding outcomes. They also acknowledged there was research demonstrating that obese women were at a higher risk of experiencing intrapartum interventions than other women and had increased risk of slow labour progress. They believed that this was the case at the study site, and the 2014 cursory data also implied this. Two midwives expressed views aligning with the research review by Amir (2007) that demonstrated obesity challenged the expression of labour and lactational hormones, increasing intrapartum interventions and impeding breastfeeding exclusivity (Amir, 2007). One midwife mentioned the possibility that the emotional impact of increased intervention could lead to a withdrawal from maternity care services, and negatively impact on breastfeeding duration.

Additionally, they also discussed how the influence of pregnancy and intrapartum interventions (including the referral for obstetric consultation in secondary care clinic), had the potential to negatively affect the midwifery partnership, which they considered crucial to breastfeeding support. The interviewed midwives understanding of clinical indications for the obstetric led care was not unanimous and their acceptance, or otherwise, of clinical indications seemed to relate to a level of compensation on their

part, to protect the client, and make attempts to minimise what they perceived as harm to their client, considering it to be part of the partnership role.

However, the midwives struggled to reconcile their beliefs and experiences concerning risk implications of obesity in maternity care, obesity stigma and defensive practice, with a positive midwifery partnership and the optimisation of breastfeeding. They seemed to be making attempts to reflect on and evaluate their practice, experiences and outcomes, with limited access to reliable tools to guide them. This resulted in experiencing a degree of frustration. It is the researcher's interpretation that the context of obesity stigma is implicit in the midwives' struggles to find the best-practice for their obese clients, and their attempts to moderate exposure to interventions, with clinical safety recommendations. They recall efforts to achieve the balance through mindful communication and effective midwifery partnerships but had felt the need to adapt and consolidate existing midwifery skills, which they were continuing to process.

One interviewed midwife was more explicit than her counterparts regarding her belief that the maternity care of obese women was defensive; and the parameters within which she found herself working, were challenging to her. Her views on breastfeeding challenges and breastfeeding exclusivity trends for obese mothers did not match the research and reviews denoting reduced initiation, intention and duration by Amir (2007), and Jevitt (2007); or that intrapartum interventions per se challenged breastfeeding (Amir, 2007; Jevitt, Hernandez, & Groër, 2007). However her focus was aligned with the research by Kair (2016), that found obesity stigma to influence the postnatal care provided to obese women (Kair & Colaizy, 2016). She rejected the

inference that obese women had differing breastfeeding care needs to other women and endeavoured to maintain a standard approach to all her clients. The midwife's views may be understood as a reaction to obesity stigma. She was intent on maintaining neutrality, minimising bias and optimising the emotional component of her clients' journeys.

The midwives expressed some agreement about the experiences of interventions, how they thought their midwifery partnership was affected as a result and how they, as midwives responded to this to maintain a positive experience of partnership. They believed that there would be barriers for breastfeeding and their ability to support breastfeeding effectively if the partnership was not protected. Midwife 2 was somewhat in agreement with these sentiments but clarified that she did not believe that obesity as a physical state in itself to be a breastfeeding barrier.

## **Summary**

The findings in this study had some similarities with, and some departure from the wider research perspectives. Two midwives agreed with research that demonstrated labour and lactational hormones could be disrupted by obesity and intrapartum interventions; the breastfeeding experience of four client participants did not oppose this assumption. Midwife and client participants considered that communication and language used in their care, or care approach, had a strong influence on how experiences were interpreted, client self-perception, how they thought others perceived them, and their ability to participate. All participants viewed experiences throughout the ongoing maternity journey as influential to breastfeeding. The presence (or absence) of a partnership approach also influenced how other themes,

such as experiences of interventions, were received, and so potentially protected breastfeeding by holding other maternity experiences together; assisting the woman and midwife to remain grounded despite situations occurring that may not be well understood. The risk management approach of obstetric clinic at the study site was not seen to encourage participation, rendering participants as passive recipients of their care, which was described as '*repetitious*' and '*judgemental*'.

## **Appraisal of study methods**

IPA is a study methodology with its foundations in three philosophical schools of research; hermeneutics, phenomenology and idiography (Smith et al., 2009). Expanding on this, the study was concerned with interpretation of the phenomenon of breastfeeding, by individual participants who shared the characteristic of obesity, and the midwife participants, regarding the experience of providing breastfeeding care to obese clients. Interpretations of experiences were then interpreted by the researcher, referred to by Smith et al. (2009), as 'double hermeneutics' (Smith, Flowers, & Larkin, 2009). It was deemed an appropriate choice of study methodology, as the study was intended to inform clinical outcomes review at the study site by offering service-user opinion; including interpretation of their breastfeeding influencers as obese women.

### **Study strengths**

The study had a novel design, encouraging the collection of contemporaneous data from participants, and reflections on experiences from others. The selection of IPA as a methodology facilitated a flexible approach to data collection and analysis, allowing for serendipitous findings such as the importance of self-identification as 'normal,' and the influence of antenatal experiences on breastfeeding outcomes. A focus on

idiography rather than generalisability facilitated considerable examination and interpretation of individual perspectives of breastfeeding. This enabled the researcher to illuminate detail in participant narratives, which included emotional responses to health care; something that may not have emerged with a quantitative approach.

### **Study limitations**

#### *Reduced recruitment*

I had proposed to recruit ten women to the study to facilitate group interaction and to account for women birthing at different times – to increase the likelihood of there being some active group members at any given time. Unfortunately, only two women were recruited to this study design, requiring me to modify the design. I did not have sufficient resources to survey women regarding their reasons for declining to participate.

Potentially the use of social media was perceived by women as a barrier to participation; this may have included privacy concerns or fear of judgement. I also speculated that the initial proposed length of participation – one month – women found too long and hence reduced interest in participation. From reviewing the literature on obese service user perspectives on health care, I wondered whether women were reluctant to identify as obese due to anticipated judgement, and this together with the emotive topic of breastfeeding caused the study to be of too sensitive a nature to encourage participation.

#### *Study size*

This study is of small scale, is of a qualitative methodology, and focuses on idiography. This was a deliberate choice made by the researcher to facilitate reference

to the study site maternity care systems. However, this has meant that study findings are not applicable to the wider population of obese maternity consumers. To achieve this, an alternative study methodology would need to be employed.

Due to small sample size, there was no value in collecting information on other demographic criteria such as parity, age, ethnicity, education level. Research examining these factors would assist in developing an approach to meet needs, as factors could be considered with approach and design.

### *The use of social media for data collection in research*

The use of social media as a research tool was employed to enable women to participate with a degree of anonymity if they chose<sup>16</sup>, and to allow them to participate from their own home, at a time of their choosing. The intention was also to facilitate exchange between participants and in this way, minimise researcher input. I had planned to conduct thematic analysis using the NCapture feature of the NVivo software by QSR international, used for analysis of qualitative research captured on social media platforms. This was not successful. There was limited recruitment to this study design. I did not have the resources to follow up clients who declined to participate. Therefore, although social media was utilised to ease participation, this was not the reality.

## **Research implications**

This study provided elaboration on how client and midwife participants experienced the maternity journey and the influence it had on breastfeeding; in reference to the research question “What are the barriers and facilitators to exclusive

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<sup>16</sup> The option of anonymising their Facebook identity, or creating an additional identity for study participation was offered to women.



breastfeeding for women with a BMI equalling or exceeding 35kg/m<sup>2</sup>?" For study participants, how they interpreted care, whether they perceived discrimination which they attributed to their body shape, went on to influence the tone of other aspects of their maternity journey, and had implications for breastfeeding outcomes, and reception of breastfeeding support efforts. There are numerous avenues for further research which could follow this study, addressing questions that this study raised.

The question of the influence of obesity stigma on clinical interactions could be further investigated using qualitative or quantitative methodologies. For example, qualitative methodologies could be employed to explore client or clinician experiences and opinion of how obesity as a social construct, influences meaning in clinical dialogue; or clinicians' experiences of working in obstetric clinic with obese clients. This would provide a comparison to the experiences gleaned in this study from midwives working in primary care roles. Quantitative approaches to the examination of service user satisfaction or understanding of maternity care include designs such as the administration of questionnaires, at various points of the maternity journey, to gauge the effectiveness of clinical communication, or whether clinical communication was perceived to be influenced by obesity stigma.

In this study, the clients and midwives explored their understandings of intrapartum interventions, from the perspective of clinical indications, and influence on breastfeeding. A retrospective, quantitative study designed to measure total volume of synthetic oxytocin received by participants in labour and the timing of secretory activation, with controlled variables including BMI, induction or augmentation of labour, mode of birth, length of labour, parity and previous breastfeeding experience, ethnicity

and age would be expected to provide useful information regarding whether synthetic oxytocin administration influences lactation, and if so, whether there is a range to the effect of synthetic oxytocin influence on lactation. Other findings to such a study, dependant on participant numbers and strength, would note any correlation between synthetic oxytocin total volume over time, and mode of birth. Interpretation may inform intrapartum management guidelines for obese women and have implications for anticipated timing of secretory activation.

Finally, it would be valuable to interview women regarding their understanding of 'normal breastfeeding'; and compare it to accepted clinical definitions. Variables to consider applying to such a study include parity and previous experience or exposure to breastfeeding, which would elucidate further on whether prior experience or exposure alters interpretation of breastfeeding norms. Designing a study with quantitative methodology, using Likert Scales would be expected to address the research question well. The implications from a study examining perceptions of 'normal breastfeeding' may include language used in antenatal and postnatal care to promote breastfeeding and may suggest work streams for midwives and lactation consultants involved in normalising breastfeeding on a community level.

Comparisons between this study and wider research regarding 'experiences of normal' and 'breastmilk substitute use', how it was handled in clinical conversations, and implications for autonomy, has not been addressed, as no research examining this issue was reviewed or noted in the wider literature search. How breastmilk substitute is discussed, and the language used in conversations would be a useful study to conduct,

to assist breastfeeding supporters in having clear and meaningful dialogue with mothers regarding breastmilk substitute use while continuing to promote breastfeeding.

# CONCLUSIONS

Impetus for this research study was in response to a number of observations made by the researcher when reviewing lactation research and government reports.

These have included: -

- Increasing overweight and obesity trends nationally and internationally (James, Leach, Kalamara, & Shayeghi, 2001; Ministry of Health, 2016; Wang & Lobstein, 2006).
- Research demonstrating that breastfeeding is protective of obesity (Dewey, 2003; Owen, Martin, Whincup, Davey Smith, & Cook, 2005).
- Research examining the epigenetic inheritance of obesity (Lane, 2014; Thomas, 2015).
- Research examining milk and gut microbiome, and health implications including obesity (Gregory et al., 2016; Musilova, Rada, Vlkova, Bunesova, & Nevoral, 2015).
- Breastfeeding challenges experienced by obese women (Baker, Michaelsen, Sorensen, & Rasmussen, 2007; Garner, McKenzie, Devine, Thornburg, & Rasmussen, 2017).

These strands of the literature seemed heavily interdependent, and this became influential in the research approach and the broad view taken. The research perspectives infer that infants born to obese mothers are at a disadvantage regarding health outcomes. Intending to initiate service evaluation for obese mothers, including a focus on breastfeeding outcomes, I planned a study with the intention of identifying and

examining breastfeeding barriers and facilitators experienced by obese women who used the study site maternity unit. The study went on to include midwife perspectives. Prior to embarking on study recruitment, I compiled a narrative literature review which examined the following perspectives: - hormonal disruptions considered to result from obesity; intrapartum interventions as challenges to lactation and as experienced by obese women at a higher rate than other women; correlation between psychosocial factors, maternal obesity and breastfeeding outcomes, and equity of breastfeeding support practices and approaches experienced by obese women. The *Snapshot of Practise* at the study site suggested there was a BMI range to maternity outcomes including; mode of birth, induction of labour and breastfeeding outcomes. Therefore, I considered it a logical progression for this study to focus on talking to obese women, to learn more about their experiences.

### **Implications for practice at the study site**

This study revealed that approaches to the maternity care of study participants, did not meet their needs or expectations well. It revealed that the antenatal experiences of care (not necessarily breastfeeding education), influenced breastfeeding outcomes. The theme of communication was the predominant theme for all participants and it linked strongly to notions of autonomy and normality. Interviewed women did not experience communication episodes in obstetric clinic favourably – it threatened their autonomy and sense of normality. Regarding breastfeeding outcomes, leading on from the experiences of care in pregnancy, ward-based attempts to support breastfeeding were not experienced positively. If participants experienced limited choices with infant feeding, breastfeeding support had the potential to be construed as

judgement on their mothering ability – which led to annoyance or guilt – and was not reported by participants to have maximised breastfeeding/lactation.

While acknowledging that study findings are not generalisable, I was nevertheless given to consider how maternity services could respond to the feedback of study participants, while continuing to apply pregnancy and intrapartum surveillance or management deemed appropriate to optimise outcomes. The partnership approach emerged as a factor which strengthened autonomy and normality and from which breastfeeding support was experienced as acceptable. Additionally, it was a strong topic for interviewed midwives – who reported concerns of it being undermined by obesity as a social construct, and obstetric approaches to the care of their obese clients. Therefore, employing a partnership approach to the obstetrician-led care of obese women, involving a named midwife and named obstetrician<sup>17</sup>, and facilitating participation from the client and LMC, and additional team members as appropriate on a case-by-case basis, such as lactation consultant, may be a realistic and favourable option.

Study findings imply that consultation with obese service users on a larger scale than managed in this research would be useful; to ascertain whether the provision of maternity care to obese women requires review; and if yes, then what are the elements that require a new focus. Findings from this study suggest the following areas;

- Service structure and environment

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<sup>17</sup> This would align with the National Maternity care standard's recommendations for continuity of midwife and obstetrician for women under the care of secondary care services (Ministry of Health, 2011).

- Communication and language – an evaluation of clinical language used to communicate with women regarding their care, and clinician attitudes regarding the clinical relationship
- Opportunities and empowerment afforded to women to participate in their maternity journey

Additionally, findings of this study imply that breastfeeding support in the postnatal period, particularly by clinicians not familiar to the woman, is of limited value. This raises questions of interest to site lactation consultants regarding their role and approach to obese mothers on the postnatal ward. The presence of the lactation consultant in the proposed midwife led antenatal clinic would be a potential solution, and this would entail relationship building as well as breastfeeding education, to improve the reception of breastfeeding support efforts following birth, if required.

The clients' narratives were concerned with their experiences of maternity care and carers. From data analysis, interactions with maternity services had implications for participants' ability to navigate their journey. The approach was experienced as disjointed, and at times, defensive. Additionally, there was confusion with meaning, miscommunications within the wider context of obesity stigma, and even potential client/clinician power imbalance which led to a reduced body confidence, and breastfeeding outcomes were not optimal. This leads me to suggest that maternity care for obese women is re-evaluated. I suggest this should include a review of language used in descriptions of maternity care, such as 'care delivery', and instead opt for terms that do not imply care is **delivered** by the clinician, and passively **received** by clients, such as 'meetings' and 'interactions'. Likewise, I suggest that clinical approaches review

the words that are used in clinical conversations. Use of words such as 'normal' with many varying nuances has a high risk of misinterpretation. The reason suggestions made are applicable to the maternity care of obese women, is the risk that conversations concerning their bodies are more likely to be affected by stigma; risks that are not as high for non-obese attendees of obstetric clinic in my opinion.

This study is not applicable to a wider population due to its small scale and design. However, the services and outcomes of obese service-users is a focus of a current maternity Quality and Safety project; and a Ministry of Health target involves the identification and management of 95% of obese children, focussing on a treatment approach rather than a preventative one (Ministry of Health, 2017a). Returning to the wider perspective of obesity as an increasingly prevalent health concern, I contend that obesity has the potential to influence, and in turn, be influenced by, maternity clinical outcomes, including breastfeeding. This study serves to indicate areas of maternity services which warrant further examination, with the aim of improving client experience and outcomes, and curtailing obesity trends.

Developing a comprehensive understanding of obesity is now crucial to maternity services, which is well placed to form part of the management strategies to obesity as all parents and newborns pass through it, with few exceptions. However, the minimisation of risk and the promotion of health are not synonymous, and this is one possible avenue where maternity professionals can refocus interventions and education opportunities. Maternity care providers ought to have a good understanding of the risks and requirements peculiar to the antepartum, intrapartum and postpartum obese woman and fetus/infant and a deeper understanding of obesity as a general health risk,



including obesity drivers. Clarity on causality would of course benefit health-care providers and an awareness of the low success rate of dietary and exercise measures as a combat to obesity. Therefore, measures may be better focussed on prevention, such as mode of birth and early infant feeding practices.

This study raised questions about the design of care delivery provided to obese women at the study site. The original question posed, sought to identify breastfeeding barriers and facilitators experienced by obese women. The findings reflected that while the women were concerned about breastfeeding, how they interpreted clinical interactions was the most relevant thing for them to discuss and critique. The way in which client participants construed maternity care contrasted with how health professionals divided pregnancy, intrapartum, and postnatal periods and services. As participants considered themselves healthy women, the perceived fragmented approach to their care surprised clients and disappointed midwives.

### **Researcher statement regarding research process**

I experienced considerable personal development, and evolution of my understandings of the research question, throughout the research process. As a novice researcher, there are elements of research that I would now approach differently. The experience of interviewing participants is an example of this. There are times during data collection and write up, where I have had to acknowledge interesting threads of discussion which were not pursued at the time, which may have been illuminating. In the recruitment phase of the study, it would have been useful to discover reasons for low uptake as this may have led to adaptation of the design to encourage participation. Acquiring feedback on reluctance to participate via the Facebook design would have

been useful. Resource constraints prevented follow up in these two instances, which I addressed in the Appraisal of Study Methods section.

I experienced some difficulty when preparing the study 'Discussion and Conclusion' section as the themes that emerged from the participants' data were not easily relatable to the literature reviewed; and applied broadly to the research question, rather than specifically. Time constraints did not allow for me to prepare a second literature review. Therefore, approaching the study from a pragmatic perspective may have proved a more suitable approach in this instance. I remain enthusiastic about facilitating data collection which is led by participants and therefore performing a review of research perspectives following data collection would be a valuable approach, as the purpose was to reduce researcher bias through my existent knowledge and opinions on the research question.

# GLOSSARY OF TERMS

Breastfeeding duration categories/breastfeeding intensity -

- Exclusive - – the baby has had only breastmilk since birth, excepting prescribed medications,
- fully – the baby has had a breastmilk substitute but has only had breastmilk within 48 hours,
- partial – the baby has taken breastmilk and a breastmilk substitute within the previous 48 hours,
- artificial – the baby only has a breastmilk substitute and has not had breastmilk for 48 hours or longer (New Zealand Breastfeeding Alliance, 2014).

BMI - Body mass index is a measurement of body fat applicable to adult men and women (Rothman, 2008). Unless specified, this is the measurement used in reviewed research to categorise body weight. BMI criteria discussed in this review align with definitions used by the WHO as follows;

- underweight - less than  $18.49\text{kg/m}^2$ ,
- normal weight -  $18.5\text{-}24.99\text{kg/m}^2$ ,
- overweight -  $25\text{-}29.99\text{kg/m}^2$  and
- obesity classes 1, 2 and 3: -  $30\text{-}34.99\text{kg/m}^2$ ,  $35\text{-}39.99\text{kg/m}^2$  and greater than or equalling  $40\text{kg/m}^2$  respectively (World Health Organisation, 2014)

BFHI – Baby friendly hospital initiative, administered in New Zealand by NZBA

NZBA – New Zealand Breastfeeding Alliance

IOL – induction of labour

SEP - socioeconomic position

Microbiome – community of microbes living in, or on, human bodies

ICM – International Confederation of Midwives

IPA – interpretative phenomenological analysis

LMC – lead maternity carer

Obstetric Clinic care – this refers to pregnancy care appointments which are led by the obstetrician, occurring within the format of clinic structure. Clients who attend this clinic have been referred, by self, midwife or GP, due to conditions noted in Section 88, considered requiring medical consult or overview

MOH - New Zealand Ministry of Health

WHO – World Health Organisation

MER – Milk ejection reflex

Secretory differentiation/ L1 – occurring during pregnancy, the epithelial cells of the mammary gland differentiate into lactocytes

Secretory activation/L2 – occurring between 48-72 hours after the birth of the placenta involving copious milk secretion

PCOS – Polycystic ovarian syndrome

C/S – Caesarean section

PET - Pre-eclampsia

PPH – Postpartum Haemorrhage

IUGR – Intrauterine growth restriction

Prolactin - a pituitary hormone which suppresses lipid storage (Diakonova, 2015). In pregnancy prolactin is essential for secretory initiation (Lawrence & Lawrence, 2005), and increases milk synthesis in the lactating mammary gland (Diakonova, 2015).

Prolactin is also produced by the brain, breast, skin and adipose tissue (Diakonova, 2015).

Leptin - a hormone produced by adipose tissue. The main function of leptin is to regulate appetite and satiety responses. While obese subjects have increased serum leptin due to increased adipose cells, they appear to have leptin resistance (Myers, Cowley, & Unzberg, 2008).

Neonatal death – infant death which occurs after birth and within the first 28 days of life

Late fetal demise – infant death occurring after 28 weeks gestation and before birth

# APPENDICES

## Appendix one: Ethical Approval & Consultation

### Ethical Approval



Phone 0-4-463 5480  
Email susan.corbett@vuw.ac.nz

#### MEMORANDUM

TO	Rachel Monerasinghe
COPY TO	Robyn Maude
FROM	AProf Susan Corbett, Convener, Human Ethics Committee
DATE	16 December 2015
PAGES	1
SUBJECT	<b>Ethics Approval: 22548</b> A Descriptive Study Examining the Breastfeeding Barriers and Facilitators for Women with a BMI over 35kg/m <sup>2</sup>

Thank you for your application for ethical approval, which has now been considered by the Standing Committee of the Human Ethics Committee.

Your application has been approved from the above date and this approval continues until 1 February 2017. If your data collection is not completed by this date you should apply to the Human Ethics Committee for an extension to this approval.

Best wishes with the research.

Kind regards



Susan Corbett  
Convener, Victoria University Human Ethics Committee

## Maori Consultation



**Kuini Puketapu** [REDACTED] <Kuini.Puketapu@[REDACTED].org.nz>

Jul  
28

to me

Hi again Rachel,

Apologies once again.. I have read this and am happy with your proposal...Let me know if there is anything I can assist with

Kind regards

kp

**From:** Rachel Monerasinghe [mailto:[rachel.monerasinghe@gmail.com](mailto:rachel.monerasinghe@gmail.com)]

**Sent:** Tuesday, 23 June 2015 3:46 p.m.

**To:** Kuini Puketapu [REDACTED]

**Subject:** Re: Study proposal consultation

## Locality Authorisation

### Electronic Authorisation Given

Inbox x



Nov 9 (8 days ago)

**Online Forms** <administrator@ethicsform.org>

to me

Dear Ms Rachel Monerasinghe

Ms Deirdre O'Connell has given electronic authorisation as Locality for Project "Barriers and facilitators associated with breastfeeding for women with a raised BMI".

If you need further help or assistance please e-mail us at: [helpdesk@infonetica.net](mailto:helpdesk@infonetica.net) or phone 0800 634 758 or [+64 4 974 7675](tel:+6449747675).

Regards  
HDEC-SCOTT Form  
<https://nz.ethicsform.org>

This is a system-generated e-mail. Please do not reply.



# Appendix two: Participant Information Sheets

## Client Participation Information Sheet



GRADUATE SCHOOL OF NURSING, MIDWIFERY & HEALTH  
VICTORIA UNIVERSITY OF WELLINGTON, PO Box 7625, Newtown, Wellington 6242, New Zealand  
Phone +64-4-463 5363 / 0800 108 005 Fax +64-4-463 5442 Email nmh@vuw.ac.nz  
Website www.victoria.ac.nz/nmh

### Participant Information Sheet

My name is Rachel Monerasinghe. I am a Masters student at the Graduate School of Nursing, Midwifery and Health at Victoria University of Wellington. I am undertaking a study to examine how women who are overweight experience breastfeeding. This study will contribute to my thesis.

Study title: A Descriptive Study Examining the Breastfeeding Barriers and Facilitators for Women with a BMI over 35kg/m<sup>2</sup>

Locality: [REDACTED] Ethics committee ref.:22548

Lead investigator: **Rachel Monerasinghe** Contact phone number: [REDACTED]

You are invited to take part in a study on Breastfeeding. Whether or not you take part is your choice. If you don't want to take part, you don't have to give a reason, and it won't affect the care you receive. If you do want to take part now, but change your mind later, you can withdraw.

This Participant Information Sheet will help you decide if you'd like to take part. It sets out why we are doing the study, what your participation would involve, what the benefits and risks to you might be, and what would happen after the study ends. We will go through this information with you and answer any questions you may have. You do not have to decide today. Before you decide you may want to talk about the study with other people, such as family, whānau, friends, or healthcare providers. Feel free to do this.

If you agree to take part in this study, you will be asked to sign the Consent Form on the last page of this document. You will be given a copy of both the Participant Information Sheet and the Consent Form to keep.

This document is 6 pages long, including the Consent Form. Please make sure you have read and understood all the pages.

## WHAT IS THE PURPOSE OF THE STUDY?

The Purpose of this study is to increase knowledge concerning the breastfeeding challenges that women who are overweight face, in order that the health service can meet women's needs more effectively. In doing so, the aim is to improve the health of mother, baby and community through improving breastfeeding rates.

The study is funded through Healthy Workforce New Zealand, via the New Zealand College of Midwives. Rachel Monerasinghe is the lead investigator and is carrying out the study through Victoria University of Wellington. She can be contacted on [REDACTED] or [REDACTED], and she will be happy to answer any questions you might have.

## WHAT WILL MY PARTICIPATION IN THE STUDY INVOLVE?

You are invited to participate in this study because you are expecting a baby, you intend to birth your baby at [REDACTED], you intend to breastfeed your baby and your weight is in the overweight range.

When your baby is 4 weeks old you will be asked to agree to be interviewed in person, regarding how you experienced breastfeeding.

Questions asked will be regarding how breastfeeding developed and progressed. This may include you commenting on whether you think breastfeeding went well and is still going well, if it was or still is challenging, whether everything was straightforward for you, or what challenges did you face and how did you overcome them. The interview will aim to include details from the early days after baby was born, up until the interview and also include your plans for future breastfeeding duration for this baby.

Certain health information will be collected with your permission, including your age, the length of your labour, any pain medication you used during labour, whether you had a vaginal delivery or a caesarean section delivery. However, you can opt not to answer these questions.

The investigator will collect your weight and this can be a sensitive issue for some people. In medical terminology this is referred to as your BMI. If you wish to participate, but do not wish to divulge your weight status, you can simply inform the investigator that your BMI is above 35kg/m<sup>2</sup>.

With your permission, your midwife will also be interviewed regarding how she supported your breastfeeding and what support strategies she used if any. In the consent form there is a section for you to indicate whether you give your permission or decline it. Your midwife will not be approached until after your

interview. The contents of your interview will not be discussed with her and she will not be made aware if you decline for her to be interviewed. This will not affect your postnatal care, or your participation in this study.

#### WHAT ARE THE POSSIBLE BENEFITS AND RISKS OF THIS STUDY?

Due to the nature of this study – an in person interview – there will be no physical side effects.

Breastfeeding can potentially be an emotional journey for mothers and babies. If you find the interview uncomfortable or upsetting, please let the interviewer know and the interview can be terminated. You do not need to disclose any information that you would prefer to keep private.

#### WHAT ARE MY RIGHTS?

Participation in this study is voluntary.

- You are free to decline to participate or to withdraw from the research at without experiencing any disadvantage. You are not able to withdraw your data once data analysis has begun.
- Have the right to change your mind and decline for your midwife to participate, if you had previously agreed, without her knowledge.
- You have the right to access information collected about you as part of this study.
- In the research write up, no participant will be named. Pseudonyms (a different name) will be used.

#### WHAT HAPPENS AFTER THE STUDY OR IF I CHANGE MY MIND?

Transcripts and computer files will be stored securely so that only the researcher and supervisor will have access to them. Personal information such as identity, BMI, mode of birth, pain relief, and breastfeeding outcomes will be kept in a secure location for the required five years so that research may be validated if necessary, after which it will be destroyed. The investigator will personally undertake transcribing so that no other person will have access to personal information.

Data collected in this study will not be used in any other study.

Transcriptions will be shredded after five years and computer files will be deleted. Study findings will be communicated to participants within six months of the conclusion of the study. Study findings will be communicated to service managers and educators within six to twelve months of the conclusion of the study, but no participants will be named in this process.

**WHO DO I CONTACT FOR MORE INFORMATION OR IF I HAVE CONCERNS?**

If you have any questions, concerns or complaints about the study at any stage, you can contact:

Dr. Robyn Maude, Supervisor.  
04 463 6137  
Robyn.maude@vuw.ac.nz

If you want to talk to someone who isn't involved with the study, you can contact an independent health and disability advocate on:

Phone: 0800 555 050  
Fax: 0800 2 SUPPORT (0800 2787 7678)  
Email: advocacy@hdc.org.nz

For Maori health support please contact:

Kuini Puketapu Kuini.puketapu@[REDACTED].nz

You can also contact the HEC ethics convener who approved this study on:

Phone: +64-4-463 5480  
Email: susan.corbett@vuw.ac.nz

# Midwife Participation Information Sheet



GRADUATE SCHOOL OF NURSING, MIDWIFERY & HEALTH  
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Phone +64-4-463 5363 / 0800 108 005 Fax +64-4-463 5442 Email nmh@vuw.ac.nz  
Website www.victoria.ac.nz/nmh

## Participant Information Sheet

My name is Rachel Monerasinghe. I am a Masters student at the Graduate School of Nursing, Midwifery and Health at Victoria University of Wellington. I am undertaking a study to examine how women who are overweight experience breastfeeding. This study will contribute to my thesis.

Study title: A Descriptive Study Examining the Breastfeeding Barriers and Facilitators for Women with a BMI over 35kg/m<sup>2</sup>

Locality: [REDACTED] Ethics committee ref.:22548

Lead investigator: Rachel Monerasinghe Contact phone number: [REDACTED]

You are invited to take part in a study on Breastfeeding. Whether or not you take part is your choice. If you don't want to take part, you don't have to give a reason. If you do want to take part now, but change your mind later, you can withdraw.

This Participant Information Sheet will help you decide if you'd like to take part. It sets out why we are doing the study, what your participation would involve, what the benefits and risks to you might be, and what would happen after the study ends. We will go through this information with you and answer any questions you may have. You do not have to decide today. Before you decide you may want to talk about the study with other people, such as family, whānau, friends, or healthcare providers. Feel free to do this.

If you agree to take part in this study, you will be asked to sign the Consent Form on the last page of this document. You will be given a copy of both the Participant Information Sheet and the Consent Form to keep.

This document is 6 pages long, including the Consent Form. Please make sure you have read and understood all the pages.

#### WHAT IS THE PURPOSE OF THE STUDY?

The Purpose of this study is to increase knowledge concerning the breastfeeding challenges that women who are overweight face, in order that the health service can meet women's needs more effectively. In doing so, the aim is to improve the health of mother, baby and community through improving breastfeeding rates.

The study is funded through Healthy Workforce New Zealand, via the New Zealand College of Midwives. Rachel Monerasinghe is the lead investigator and is carrying out the study through Victoria University of Wellington. She can be contacted on [REDACTED] or [REDACTED], and she will be happy to answer any questions you might have.

#### WHAT WILL MY PARTICIPATION IN THE STUDY INVOLVE?

You are invited to participate in this study because you work at or have an access agreement with [REDACTED], you have a woman in your care who has a BMI of 35kg/m<sup>2</sup>, who intends to exclusively breastfeed and who is enrolled to participate in this study (client participant). Prior to participation, your client will be asked to formally consent to you being interviewed with regards to her breastfeeding experience. If your client is in complete agreement, you will be asked to agree to be interviewed in person, regarding how you communicated breastfeeding support or education and details of what your experience involved. Questions asked will be regarding how breastfeeding developed and progressed. This may include you commenting on whether you think breastfeeding went well and is still going well; if it was or still is challenging; whether everything was straightforward for you and your client; or what challenges did you or/and your client face and how did you both overcome them. Is supporting a woman with a BMI above 35kg/m<sup>2</sup> to breastfeed challenging? The interview will aim to include details from the early days after baby was born, up until the interview. Your interview will take place after your client has been interviewed.

#### WHAT ARE THE POSSIBLE BENEFITS AND RISKS OF THIS STUDY?

If you find the interview uncomfortable or upsetting, please let the interviewer know and the interview can be terminated. You do not need to disclose any information that you would prefer to keep private.

### WHAT ARE MY RIGHTS?

Participation in this study is voluntary.

- You are free to decline to participate or to withdraw from the research at without experiencing any disadvantage. You are not able to withdraw your data once data analysis has begun.
- You have the right to access information collected about you as part of this study.
- In the research write up, no participant will be named. Pseudonyms (a different name) will be used.

### WHAT HAPPENS AFTER THE STUDY OR IF I CHANGE MY MIND?

Transcripts and computer files will be stored securely so that only the researcher and supervisor will have access to them. Personal information such as identity, BMI, mode of birth, pain relief, and breastfeeding outcomes will be kept in a secure location for the required five years so that research may be validated if necessary, after which it will be destroyed. The investigator will personally undertake transcribing so that no other person will have access to personal information.

Data collected in this study will not be used in any other study.

Transcriptions will be shredded after five years and computer files will be deleted. Study findings will be communicated to participants within six months of the conclusion of the study. Study findings will be communicated to service managers and educators within six to twelve months of the conclusion of the study, but no participants will be named in this process.

### WHO DO I CONTACT FOR MORE INFORMATION OR IF I HAVE CONCERNS?

If you have any questions, concerns or complaints about the study at any stage, you can contact:

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If you want to talk to someone who isn't involved with the study, you can contact an independent health and disability advocate on:

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Email: [advocacy@hdc.org.nz](mailto:advocacy@hdc.org.nz)

For Maori health support please contact:

Kuini Puketapu [Kuini.puketapu@\[REDACTED\].nz](mailto:Kuini.puketapu@[REDACTED].nz)

You can also contact the HEC ethics convener who approved this study on:

Phone: +64-4-463 5480  
Email: [susan.corbett@vuw.ac.nz](mailto:susan.corbett@vuw.ac.nz)



## Research Recruitment Poster

Rachel Monerasinghe RN RM IBCLC

Home phone [REDACTED]

Mobile [REDACTED]

Email: [REDACTED]



### Invitation to Participate In a Private Discussion Group on Facebook.



Title of Research: A Descriptive Study Examining the Breastfeeding Barriers and Facilitators for Women with a BMI over 35kg/m<sup>2</sup>.

My name is Rachel Monerasinghe. I am a core midwife at [REDACTED], and a student at [REDACTED] University. I am undertaking a study investigating how women who have a BMI above 35kg/m<sup>2</sup> experience breastfeeding.

I would like to recruit women who are currently expecting their first baby, have a BMI over 35kg/m<sup>2</sup> and intend to exclusively breastfeed, to join a private (secret) Facebook group and discuss their experiences over the first month following the baby's birth. You would ideally be due to birth your baby after 15<sup>th</sup> March 2016.

For women who are interested in participating in this research, your commitment is:

- To join a secret Facebook group that I will create for this purpose
- To comment on your experiences with feeding your baby throughout the first month after baby's birth
- To chat with the other women in the group as you wish to.

Group discussion and individual comments will be reviewed and will form part of my Master's thesis. I will be looking at the themes of your discussions and writing a report. I will not use anyone's real name in the writing of my report. Comments and conversations will be downloaded from Facebook and I will save them onto a USB stick which will be password protected and securely stored for the required 10 years. If you wish to change your Facebook identity for the duration of the research, I will assist you with this.

This study has been granted ethical approval by the [REDACTED] Ethics committee.

My supervisor is [REDACTED]

If you are interested in participating in this research please contact me to discuss the setting up of the Facebook group.

**Thank you for considering being a part of this research**

# Appendix three: Participant Consent Forms

## Client Participant Consent Form



GRADUATE SCHOOL OF NURSING, MIDWIFERY & HEALTH  
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Phone +64-4-463 5363 / 0800 108 005 Fax +64-4-463 5442 Email nmh@vuw.ac.nz  
Website www.victoria.ac.nz/nmh

### A Descriptive Study Examining the Breastfeeding Barriers and Facilitators for Women with a BMI over 35kg/m<sup>2</sup>

#### Consent form

Please tick to indicate you consent to the following (Add or delete as appropriate)

I have read, or have had read to me in my first language, and I understand the Participant Information Sheet.

I have been given sufficient time to consider whether or not to participate in this study.

I have had the opportunity to use a legal representative, whanau/ family support or a friend to help me ask questions and understand the study.

I am satisfied with the answers I have been given regarding the study and I have a copy of this consent form and information sheet.

I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without this affecting my medical care.

I understand that with my consent, my midwife will also be interviewed regarding her involvement in my care, and how she supported my breastfeeding. I am aware that I can decline to give my permission for my midwife to discuss her perspective of my care.

I consent to the research staff collecting and processing my information, including information about my health.

If I decide to withdraw from the study, I am aware that I can ask for my contributions to be removed if I wish. I agree that the information collected about me up to the point when I withdraw may continue to be processed. I am aware that I cannot withdraw my contributions once data analysis has begun.

I understand that my participation in this study is confidential and that no material, which could identify me personally, will be used in any reports on this study.

I know who to contact if I have any questions about the study in general.

I understand my responsibilities as a study participant.

**Declaration by participant:**

I hereby consent to take part in this study.

Participant's name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Declaration by participant:**

I hereby consent for my midwife to be interviewed regarding my breastfeeding experience

Participant's name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Declaration by member of research team:**

I have given a verbal explanation of the research project to the participant, and have answered the participant's questions about it.

I believe that the participant understands the study and has given informed consent to participate.

Researcher's name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# Midwife Participant Consent Form



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Website www.victoria.ac.nz/nmh

## A Descriptive Study Examining the Breastfeeding Barriers and Facilitators for Women with a BMI over 35kg/m<sup>2</sup>

### Consent form

Please tick to indicate you consent to the following (Add or delete as appropriate)

I have read, or have had read to me in my first language, and I understand the Participant Information Sheet.

I have been given sufficient time to consider whether or not to participate in this study.

I am aware that my client has formally given written consent for me to discuss my involvement in her care and breastfeeding experience.

I have had the opportunity to use a legal representative, whanau/ family support or a friend to help me ask questions and understand the study.

I am satisfied with the answers I have been given regarding the study and I have a copy of this consent form and information sheet.

I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without this affecting my medical care.

If I decide to withdraw from the study, I am aware that I can ask for my contributions to be removed if I wish. I agree that the information collected about me up to the point when I withdraw may continue to be processed. I am aware that I cannot withdraw my contributions once data analysis has begun.

I understand that my participation in this study is confidential and that no material, which could identify me personally, will be used in any reports on this study.

I know who to contact if I have any questions about the study in general.

I understand my responsibilities as a study participant.

**Declaration by participant:**

I hereby consent to take part in this study.

Participant's name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Declaration by member of research team:**

I have given a verbal explanation of the research project to the participant, and have answered the participant's questions about it.

I believe that the participant understands the study and has given informed consent to participate.

Researcher's name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# Appendix four: Interview Schedules

## Client Participant Question Sheet

### Questions for participants

The meeting/interview will be semi structured. I propose to ask the following questions:

- Can you tell me when you experienced breast fullness following baby's birth? You may remember feeling like your breasts felt quite firm all of a sudden.
- Have you ever experienced difficulties with latching baby on the breast? Why do you think that was? Can you think of anything that helped you over come this difficulty?
- Did you experience any pain when breastfeeding? What do you think was the cause? How did you solve this issue?
- Can you tell me about your baby's progress? Did you feel reassured about the weight always, and the wet and dirty nappies?
- Did you always feel that you had enough milk supply for baby? If not, can you tell me about what you needed to do next, to increase your supply?
- Have you ever expressed your milk? What was the reason for this? Has this been easy for you to do? If not, what made things difficult for you?
- Have you needed to breastfeed in public, while out shopping for example? Is this easy for you? If not, what actions do you take to help yourself?
- Has breastfeeding been a good experience? Do you think you were well prepared for breastfeeding? Is there something that you think your LMC could have advised you about beforehand that would have helped you?
- Can you tell me how long you want to breastfeed for?

## Midwife Participant Question Sheet

### Questions for midwife participants

The meeting/interview will be semi structured. I propose to ask the following questions:

- Can you remember when your clients milk came in? Did she have delayed lactation? Did she have a reduced lactation early on? How did you support her at this time?
- Do you think that your client had latching difficulties? Do you know what the problem was? How did you teach your client to feel more competent and confident with their latching?
- Did your client experience breast or nipple pain or trauma? What was the cause? How did you discover the cause? Can you tell me how you overcame this problem?
- Can you tell me about the baby's progress? Did you feel reassured about the weight always, and the wet and dirty nappies?
- Was your client worried about any particular breastfeeding issues? What questions were you asked? Did you find her concerns straightforward to address or did you need to consult others?
- Did your client need to express her milk? For what purpose? How did you help her through this? Did you need to educate your client in when to express and when not to express, and how long to express for? Was providing this education and support straightforward?
- Was your client concerned about breastfeeding in public? How did you support her with this?
- Was supporting your client with breastfeeding a positive experience for you? Do you feel that you needed to alter your approach to breastfeeding for women with a raised BMI?
- Do you think that breastfeeding knowledge and education adequately prepared you for supporting a women with a raised BMI to breastfeed?

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