# UNDERSTANDING THE EXPERIENCES OF MOTHERS WHO ARE BREASTFEEDING AN INFANT WITH TONGUE TIE:

## A PHENOMENOLOGICAL STUDY

Submitted by

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**Statement of Authorship and Sources**

This thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma.

No parts of this thesis have been submitted towards the award of any other degree or diploma in any other tertiary institution.

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**Date:** 28th of February, 2012

**Abstract**

In Australia, initial exclusive breastfeeding rates are 92 %, reducing to 14% at six months. One factor that contributes to early breastfeeding cessation is infant tongue tie. It is linked to breastfeeding difficulties and these problems contribute to early breastfeeding cessation. Tongue tie or ankyloglossia is described as a congenital condition with an unusually thickened, tightened or shortened frenulum (membrane or string under the tongue). The frenulum may vary in length, elasticity and placement along the underside of the tongue to the floor of the mouth, which then can affect infants' breastfeeding skills in different ways. Tongue tie has been reported as occurring between 2.8% and 10.7% of all infants with an average of 5.14%. The shortened membrane limits movement of the tongue, which can affect activities such as feeding, dental hygiene and speech. Since breastfeeding has been shown overwhelmingly to be of significant benefit to infants and mothers, it is important to address any condition that may impair breastfeeding.

The purpose of this research was to describe the effect tongue tie has on the breastfeeding experiences of women in order to provide evidence that can be used to review and refine practices within the health service district.

This study utilised a qualitative research approach: hermeneutic phenomenology. Because phenomenology seeks to explore the meaning, examination and description of the human experience and therefore gain an understanding of what has occurred, it is appropriate for this study, which focuses on description and interpretation of the breastfeeding experiences of women whose infants have tongue tie. In particular, hermeneutic phenomenology has been selected because it focuses on what the experience means for the individuals being-in-the world, and how these individuals interpret their experience and this experience influences the choices that they make.

A purposive sample of ten women from lactation clinics within one health service district was selected for interview. Women were invited to participate in the research immediately following their visit to a lactation clinic. Tongue tie was identified as the probable cause of the breastfeeding difficulties that they were experiencing. These problems included difficulties latching their infant to the breast, cracked and sore nipples and low breast milk supply. The data collection method used in this study was in-depth interviews, using open-ended questions. Two interviews were conducted with each woman who consented to participate in the study.

The themes that emerge from the analysis tell a common story. That is the story of the expectations, challenges, disappointment, frustrations and relief that the women felt during the initial period when they started to breastfeed their infants. Consistent with hermeneutic phenomenology, the interpretation of the findings which is presented within several themes is a fusion of the participant mother's perspectives with those of my own. The journey is marked in six distinct phases. These are Expectations; Something is wrong; Questioning, Seeking advice, No real answers; Symptoms and perseverance; Approaching the wall it's all too much and Relief. These themes are discussed and interpretations made as to their effect on the women's' breastfeeding experience.

This study has explored what it is like to breastfeed an infant with tongue tie. Despite women in this research study being committed to breastfeeding because of its health benefits, they found that having an infant with tongue tie was a harrowing journey with many frustrations along the way. Breastfeeding did not always transpire to be the natural experience that they had anticipated. It became evident that many people including health professionals have limited knowledge surrounding tongue tie and its potential effect on breastfeeding. This lack of knowledge had a significant impact on the women in this study who were breastfeeding as they did not receive appropriate advice in regards to the breastfeeding difficulties that they were experiencing.

The absence of a universal diagnostic and assessment tool for infants with tongue tie was also identified as a significant issue in the research. Implementation of an appropriate diagnostic and assessment tool for tongue tie into all hospitals would help reduce the incidence of breastfeeding difficulties that the women in this research study described. Early identification and prompt management of tongue tie would subsequently contribute to increasing breastfeeding rates which currently are below government targets.

**Outputs arising from this research study**

**<u>Peer-reviewed journal article</u>:**

Edmunds, J., Miles, S. & Fulbrook, P. (2011). Tongue-tie and breastfeeding: a review of the literature. *Breastfeeding Review*, 19(1), 19-26.

**<u>Peer-reviewed conference papers</u>:**

Oral research presentation. *Experiences of mothers breastfeeding an infant with tongue-tie.* Presented at The International Lactation Consultant Association 2011, Conference & Annual Meeting, San Diego, USA-July, 2011.

**Key Words**

Ankyloglossia; breastfeeding; frenotomy; frenulum; hermeneutic phenomenology; tongue tie.

**Statement of Appreciation**

I would like to thank a few people who have provided ongoing support and encouragement as I worked to complete this thesis.

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# CHAPTER ONE

## INTRODUCTION AND BACKGROUND

## 1.0 Introduction

The purpose of this research was to understand and describe the experiences of women who were breastfeeding an infant with tongue tie in the immediate postpartum period. Tongue tie is one of the conditions which can negatively impact on breastfeeding. Since breastfeeding has been shown overwhelmingly to be of significant benefit to infants and mothers, it is important to address any condition that may impair breastfeeding.

As a registered nurse, certified midwife and child and family health nurse, I have a special interest in supporting breastfeeding and have been an International Board Certified Lactation Consultant for 16 years. I worked for 10 years as a midwife before moving to work as a Clinical Nurse in child health. As part of my role as a child health nurse I started working in a Lactation Clinic. When I commenced in this role we had one lactation clinic per week, whereas now, due to increased demand, there are four per week. Our local hospital offers no breastfeeding support service and has no lactation clinics. It was while working in the Lactation Clinic that I first became aware of the impact of tongue tie on breastfeeding and decided to explore the phenomenon of breastfeeding an infant with tongue tie.

Tongue tie or ankyloglossia is described as a congenital condition with an unusually thickened, tightened or shortened frenulum (membrane or string under the tongue) (Hillan 2008; Wallace & Clarke, 2006). The frenulum may vary in length, elasticity and placement along the underside of the tongue to the floor of the mouth, which then can affect infants' breastfeeding skills in different ways (Watson Genna, 2008). The International Affiliation of Tongue-tie Professionals, an organisation comprised of clinical experts and tongue-tie researchers, has defined tongue-tie as "embryological remnant of tissue in the midline between the under surface of the tongue and the floor of the mouth that restricts normal tongue movement" (The International Affiliation of Tongue-tie Professionals, 2011, p. 1). Tongue tie has been reported as occurring between 2.8% (Ridgers, McCombe & McCombe, 2009) and 10.7% (Hogan, Westcott & Griffiths, 2005) of all infants with an average of 5.14% (Ballard, Auer, & Khoury, 2002; Hogan et al., 2005; Messner, Lalakea, Aby, Macmahon, & Bair, 2000; Ricke, Baker, Madlon-Kay, & Defor, 2005; Ridgers et al., 2009). The shortened membrane limits movement of the tongue, which can affect activities such as feeding, dental hygiene and speech (Amir, 2006; Kummer, 2005; Messner & Lalakea, 2002; Wallace & Clarke, 2006). This condition can have a negative impact on breastfeeding for some infants and mothers and is the focus of this research.

This chapter will explore the benefits of breastfeeding for both infants and mothers, including the nutritional and immune advantages of breast milk, how breastfeeding protects against diseases, and the common challenges and difficulties associated with breastfeeding including why women wean. There is a huge amount of literature examining breastfeeding and breast milk. This chapter focuses primarily on the major research studies. The published literature examining tongue tie will be discussed in the literature review in Chapter Two.

## 1.1 Human milk for human infants

Recent major reviews of the literature confirm that there is overwhelming evidence that breastfeeding and breast milk provides optimal nutrition and protection against illness and disease for both mothers and infants (Horta, Bahl, Martines, & Victoria 2007; Ip et al., 2007; National Health and Medical Research Council, 2003). Despite this, Australian breastfeeding rates drop significantly over the first six months of an infant's life, with a 2008 National Health Survey showing the drop from 80% of infants fully breastfed at one week of age to only 14% of infants being fully breastfed at six months of age (Australian Institute of Family Studies, 2008).

Breast milk is superior to breast milk substitutes and makes important contributions to the infant's cognitive and psychosocial development (Labbok, Clark, & Goldman, 2005; McGregor & Rogo, 2006; Oddy, Scott, Graham, & Binn, 2006). The proteins in breast milk have been found to play an important role in maximising infants' nutrition and development (Alvarez, 2007). Early cessation of breastfeeding has been positively associated with increased health problems and visits to the doctor (Oddy,et al., 2006). Thus it is important to continue supporting women who are breastfeeding because of the superiority of human milk.

Human milk contains many factors which support the infant's defence against infection and disease. It is the main source of both passive and active immunity in the first few months of an infant's life (Labbok et al., 2005). It is estimated that the deaths of 1.3 million children could be prevented annually if breastfeeding continued exclusively for six months, and then continued with the addition of complementary food until twelve months and beyond (Labbok et al., 2005). As well as providing optimal nutrition for the growing infant, breast milk contributes to the prevention of many diseases. Infants who are fed substitutes for human milk are at increased risk of many infections including urinary tract infections (Pisacane, Graziano, Mazzarella, Scarpellino, & Zona, 1992), invasive *Haemophilus influenzae*

(Silfverdal et al., 1997), acute otitis media (Uhari, Mantysaari, & Niemela, 1996) and other diseases (Labbok et al., 2005). The superiority of human milk will now be detailed in order to show the importance of supporting breastfeeding.

### 1.1.1 Human milk for optimal nutrition

Breast milk is the most nutritionally perfect food there is available for the human infant. Its constituents change according to the stage of lactation, the gestational age of the baby, the time of the day and the time during the breast feed (Brodribb, 2006; Olds, London, & Wieland Ladewig, 2000). This suits the infant's physiological needs perfectly (Brodribb, 2006). Colostrum, the first milk is produced in small quantities (Akre, 1992; Saint,Smith & Hartmann, 1984). Colostrum is higher in protein, fat soluble vitamins and some minerals, as well as immunoglobulins and other protective factors than mature milk (Akre, 1992; Brodribb, 2006; Jansson, Akesson & Holmberg, 1981; Kulski & Hartmann, 1981). It has less lactose, fat and water soluble vitamins than mature milk (Akre, 1992; Coppa et al., 1993; Saint et al., 1984). This suits the infant's immature kidneys, which are not able to handle large amounts of fluid at this time without causing some metabolic stress (Akre, 1992)

Colostrum transforms into mature milk from day 3 to 14 (Akre, 1992; Kulski & Hartmann, 1981). Mature breast milk contains many components including protein, fat and carbohydrates, which provide energy for the infant and are used for the rapidly occurring growth during infancy (Allen, Keller, Archer & Neville, 1991; Brodribb, 2006). The majority of the carbohydrate in human milk is lactose, while small amounts of oligosaccharides are also present (Coppa et al., 1993). Oligosaccharides are unique to human breast milk and are only synthesized in the mammary gland during lactation (Bode, 2006). They are not digested easily and are present in the infant's faeces where they act to prevent pathogens adhering to mucosal surfaces, and help prevent infection (Brodribb, 2006; McVeagh & Brand Miller, 1997). Lactose is digested in the gut and provides about 40% of the energy needs of the infant as well as enhancing calcium absorption (Brodribb, 2006). It promotes the growth of lactobacilli, helps maintain the acid ph of the gut and helps prevent pathogens from adhering to the gut wall (Akre, 1992; Brodribb, 2006; McVeagh & Brand Miller, 1997). This is significant as it demonstrates that breast milk contains unique properties which not only provide perfect nutrition for the infant, but help prevent the growth of pathogens, and therefore provide protection for the infant against illnesses.

The fat in human milk is an important energy source providing up to 55% of kilojoules and it is the most variable component of breast milk (Brodribb, 2006; Hambreus, 1996). The fat content changes throughout a breastfeed, with the levels increasing as the breast empties (Kent et al., 2006). The closer two breastfeeds are together, the higher the fat concentration in the milk (Daly, Rosso, Owens, & Hartmann, 1993). The lipid component of breast milk contains essential fatty acids including omega-3 and omega-6 fatty acids which are important for growth and development of the brain and central nervous system (Gustafsson, Duchen, Birberg, Karlsson, 2004; Riordan, 2005). These properties are unique to human milk and are not replicated in breast milk substitutes (Schulzke, Patole & Simmer, 2011).

Breast milk contains many vitamins and minerals which are more readily bio-available for the infant than those found in bovine milk (Akre, 1992). Iron levels in human milk are lower than those in breast milk substitutes, but the iron is more easily absorbed (Olds et al., 2000). Enzymes in breast milk have many functions including promotion of neonatal development and have a bacteriolytic effect, destroying gram positive bacteria (Akre, 1992). Other enzymes have immunological functions while some are involved in cell maturation (Akre, 1992). Human milk has a high water content as well as being a low solute fluid (Brodribb, 2006). Exclusively breastfed infants do not require any other food or fluid for the first six months of life, as human milk provides all the nutrients and fluid the infant needs, provided the infant has uninterrupted access to the breast, or in other words, breastfeeds to need (Brodribb, 2006). Human milk contains many factors that contribute to its status as the perfect food. Therefore, it is important for health professionals to continue supporting breastfeeding for as long as is mutual between mother and baby, as it is an important way to improve the health of all children.

### 1.1.2 Immunological components of human milk

At birth an infant's immune system is not fully developed. Infants acquire some antibodies (Immunoglobulin G) during pregnancy via the placenta (Hanson et al., 2001; Zinkernagel, 2001). Infants who are not breastfed have been described as having an immune deficiency because they are at an increased risk of developing infections and other diseases (Labbok et al., 2005). Human milk contains many factors which inhibit the development of infection and protect against the development of other illnesses (Oddy, 2001). Breast milk contains antibodies which protect the infant against any bacteria, viruses, fungi and antigenic

substances to which the mother has been recently exposed, and this provides some passive protection for the infant (Oddy, 2001). These protective factors are not present in breast milk substitutes (Oddy, 2002).

The proteins in human milk contain bioactive components which have a variety of roles. Some proteins are involved in the digestion and absorption of nutrients (Alvarez, 2007). Lactoferrin, a major milk protein has antiviral, anti-inflammatory, bactericidal and fungicidal properties (Hambraeus 1996; Oddy, 2002). Lactoferrin acts to block infection, by competing with bacteria for ferric iron, preventing bacterial growth (Labbok et al., 2005), while also stimulating the growth of beneficial gut bacteria (Hamosh, 2001). Proteins in human milk stimulate the growth of good bacteria, such as bifidobacteria in the infant's gut; which inhibit the growth of harmful pathogens (Alvarez, 2007).

Breast milk provides the infant with large amounts of secretory IgA. This immunoglobulin prevents pathogens from adhering to mucosal surfaces, as well as providing antibodies that protect against E. Coli, Shigella, Salmonella, Rota virus, Giardia Lamblia and other viruses and bacteria (Hanson et al., 2001; Oddy, 2001). Lysozyme, a protein enzyme is bactericidal, destroying gram positive and a few gram negative bacteria (Hamosh, 2001). Its levels continue to rise during lactation (Hamosh, 2001). Carbohydrates, such as oligosaccharides in breast milk, are one of the three main components of breast milk and act in the infant's gut to prevent bacterial attachment to mucosal surfaces (Brodribb, 2006). Human milk contains living cells including macrophages, lymphocytes and neutrophils, which have a phagocytotic action in destroying micro-organisms meaning that the organisms are engulfed and destroyed (Brodribb, 2006). Breast milk contains many factors that help protect the infant against infection, as well as stimulate the development of the infant's immune system. These are unique to human milk and provide much needed immunity in the infant's early life when they are vulnerable to many infections and diseases (Labbok et al., 2005). Breastfeeding should be encouraged and supported by all health professionals, because human milk contains many factors which make it superior to breast milk substitutes.

### 1.1.3 Human milk protects against disease and illness

Breastfeeding provides the infant with protection against many diseases. Researchers working for the World Health Organisation (WHO) undertook a series of systematic reviews and meta-analyses in order to find evidence on the long term effects of breastfeeding (Horta et al.,

2007). They selected both observational and randomised studies and include studies published in French, Portuguese, Spanish, as well as English, excluding studies from the meta-analyses which only measured outcomes to infancy (Horta et al., 2007). From the evidence reviewed, they found that breastfeeding reduces the incidence of mean blood pressure, total cholesterol, obesity and Type-2 Diabetes Mellitis among people who were breastfed (Horta et al., 2007) while it was found that subjects performed higher in intelligence tests (Horta et al., 2007). The researchers stated that all effects were statistically significant however; for some research studies the size of the effect was small (Horta et al., 2007).

The findings from this review are supported by those of another group of researchers, the Tufts-New England Medical Center Evidence-based Practice Center (EPC) sponsored by The Agency for Healthcare Research and Quality, in the United States (Ip et al., 2007). The researchers were asked to examine the evidence on the effects of breastfeeding on both short and long-term infant and maternal health outcomes in developed countries (Ip et al., 2007). A report was prepared after the review was undertaken. This was a large review, as 9,000 abstracts were screened, as well as 43 primary studies on maternal health outcomes and 29 systematic reviews or meta-analyses, which had included 400 individual studies (Ip et al., 2007). Only studies published in English were included and breastfeeding had to be measured against formula feeding or include different durations of breastfeeding (Ip et al., 2007). The results of this review are detailed in the next three subsections.

#### 1.1.3.1 Full term infants

For full term infants, Ip et al. (2007) found that breastfed infants had a significant reduction in the incidence of acute otitis media when compared to infants who were exclusively fed breast milk substitutes. Infants who were exclusively breastfed for more than to 3-6 months duration had a 50% reduction in the chance of developing acute otitis media when compared to infants who were fed breast milk substitutes, and for infants who were ever breastfed there was a 23% reduction when compared with infants who were fed breast milk substitutes (Ip et al., 2007). Any infants with a family history of atopic dermatitis, who were exclusively breastfed for at least 3 months, had a 42 percent reduced risk of getting atopic dermatitis (Ip et al., 2007). Non- specific gastroenteritis infections in the first year of life were shown to be reduced in infants who were breastfed, with one case-control study reporting a 64 percent reduction in risk (Ip et al., 2007).

Breastfeeding was shown to reduce the incidence of hospitalisation due to lower respiratory tract diseases by 72 percent, in infants under 1 year of age who were breastfed for at least 4 months (Ip et al., 2007). The risk of asthma was reduced by at least 27 percent in those infants breastfed for at least 3 months, and in those infants with a family history of asthma, there was a 40 percent reduction in risk for children under the age of 10 years (Ip et al., 2007). After reviewing all the research, Ip et al. found that overall breastfeeding was associated with a reduced risk of being overweight or obese in adolescence or as an adult (2007). Some research studies have found an association between breastfeeding for at least 3 months and a reduced risk of Type 1 Diabetes Mellitis; however, the researchers suggest that this is interpreted with caution (Ip et al., 2007). Breastfeeding has also been associated with a reduced risk of Type 2 Diabetes Mellitus but the strength of association has not yet clearly been defined (Ip et al., 2007). Therefore, breastfeeding is important for human health as feeding infants breast milk substitutes has been shown to cause an increase in the incidence of lower respiratory tract disease, asthma, overweight or obesity in adolescence or as an adult and Type 1 and type 2 diabetes.

Breastfeeding for at least 6 months was found to be associated with a reduced risk of both acute lymphocytic leukaemia and acute myelogenous leukaemia (Ip et al., 2007). For infants who had a history of breastfeeding, one meta-analysis found that the incidence of Sudden Infant Death Syndrome (SIDS) was reduced when compared with infants who had not been breastfed (Ip et al., 2007). Breastfeeding therefore, has been proven to reduce the incidence of many diseases and illnesses for full term infants.

#### 1.1.3.2 Pre-term infants

Breastfeeding was found to have protective benefits for pre-term infants. Ip et al. (2007) conducted a meta-analysis of four randomised controlled trials in order to examine what effect breast milk had on the development of necrotizing enterocolitis. When compared with formula fed pre-term infants, there was an association between breast milk feeding and a reduction in necrotizing enterocolitis, with a 5 percent absolute risk difference between the two groups (Ip et al., 2007). According to Ip et al. (2007), the diversity of the infants in the research studies, including weight, gestation and health needs to be considered when interpreting these results (Ip et al., 2007). Never the less, breast milk was shown to offer some protection against the development of necrotizing enterocolitis (NEC). More recent research

has examined the protective effects of human milk against the risk of development of (NEC) in low birth weight infants. A prospective cohort study of very low birth weight infants was undertaken in order to determine if high proportions of enteral feeds of human milk was protective against the development of NEC (Sisk, Lovelady, Dillard, Gruber, O'Shea, 2007). The researchers found that enteral feeding which contained at least 50% human milk reduced the odds of NEC sixfold (Sisk et al., 2007). These findings are supported by another study which examined the association between the intake of human milk and the development of NEC or death among very low birth weight infants (Meinzen-Derr et al., 2009). The researchers found that the risk of NEC or death was reduced as the total amount of human milk per enteral feed increased (Meinzen-Derr et al., 2009). Therefore, as human milk has been shown to be protective for very low birth weight infants, mothers of all premature infants should be supported to provide human milk for their infants for as long as is possible in order to reduce the risk of development of NEC or death.

#### 1.1.3.3 Maternal Outcomes

Breastfeeding was shown to reduce the incidence of maternal Type 2 Diabetes Mellitus in two large cohorts from a large study of nurses in the United States (Ip et al., 2007). In parous women with no history of gestational diabetes, there was a reduced risk of 4% in one cohort and 12 % in the second cohort for each additional year of breastfeeding (Ip et al., 2007). The researchers found that breastfeeding did not however, reduce the risk of developing Type 2 Diabetes Mellitus in women with a history of gestational diabetes (Ip et al., 2007).

Breast cancer has been shown to be reduced in two meta-analyses, one systematic review and other research studies published since the meta-analyses (Ip et al., 2007). Researchers found that the risk was reduced for each year of breastfeeding (Ip et al., 2007). The researchers also found that breastfeeding for more than 12 months (cumulative duration) reduced the risk of ovarian cancer when compared to never breastfeeding (Ip et al., 2007). Breastfeeding has therefore been shown to provide the mother with more optimal health as well as the infant.

## 1.2 Breastfeeding rates

An Australian government review of Australian breastfeeding rates, found that 92 percent of infants are breastfed at birth (Australian Institute of Family Studies, 2008). However, by three months of age only 56 per cent of infants are exclusively breastfed with this decreasing to 14 percent at six months of age (Australian Institute of Family Studies, 2008). Current breastfeeding rates in Queensland fall short of national targets. On discharge from hospital, 79 per cent of infants born in Queensland are breastfeeding (Queensland Government, 2009). Queensland Health had previously aimed to increase breastfeeding rates to 90 per cent on discharge, 60 per cent at three months and 50 per cent at six months by 2008 (Queensland Government, 2003). Locally, a research project undertaken in three health service districts of Queensland, including my health service district, found that only 9.5% percent of infants were exclusively breastfeeding at five months of age (Paul, Johnstone, Walker, Stanton, & Bibo, 2007). Exclusively breastfeeding is defined as an infant receiving only breast milk from the mother, a wet nurse or expressed breast milk, and no other food or fluids except vitamins, minerals and medicines (Paul et al., 2007). As these reduced rates are in my health service district, the current research study is relevant to my role as a child health nurse and lactation consultant. Being aware of the superiority of human milk to breast milk substitutes motivated me to undertake this research into one condition that impacts on the breastfeeding rates.

## 1.3 The cost of not breastfeeding

In an economic analysis of breastfeeding and formula feeding in 1997, it was estimated that over $11 million could be saved in Australia each year if breastfeeding rates were increased from 60% to 80% at three months of age (Drane, 1997). This figure included savings due to reduction in hospitalisations resulting from gastrointestinal illness, treatment of skin disorders and treatment of necrotising enterocolitis (Drane, 1997). Included in these costs are increased educational costs associated with poor outcomes from health problems. These relate to impaired neurodevelopment due to lower intelligence quotient from not breastfeeding (Drane, 1997). A more recent study which examined the costs of suboptimal breastfeeding rates in the United States, found that if 90% of families exclusively breastfed their infants for 6 months, the United States could save $13 billion dollars a year. The researchers calculated that over 900 deaths could be prevented with most of these being infants (Bartwick & Reinhold, 2010).

## 1.4 Why Women Stop Breastfeeding

Despite strong research evidence of the superiority of breastfeeding and breast milk to breast milk substitutes, breastfeeding rates are still below national targets (Queensland Government, 2009). The most common reason cited in literature for why women cease breastfeeding is not enough milk (Amir, 2005; Avery, Duckett, Dodgson, Savik, & Henly, 1998; Bailey & Sherriff, 1993; Feinstein, Berkelhamer, Gruszka, Wong, & Carey, 1986; Kirkland & Fein, 2003; Rentschler, 1991; Schwartz et al., 2002). Others factors identified include illness, inconvenience, and breast and nipple problems (Avery et al., 1998; Binns & Scott, 2002; Bulk - Bunschoten, van Bodegom, Reerink, Pasker-de Jong, & de Groot, 2001; Feinstein et al., 1986; Rentschler, 1991; Schwartz et al., 2002). Additional factors which can positively affect the duration of breastfeeding have also been identified. These include increased father involvement such as paid paternity leave in the infant's first year of life, increased prenatal breastfeeding confidence and increased confidence in the ability to produce adequate breast milk for infant growth in the postpartum period (Dykes, 2005; Flacking, Dykes, & Ewald, 2010; Mossman, Heaman, Dennis, & Morris 2008). There have been many studies undertaken which have examined why women stop breastfeeding earlier than planned, and these will be detailed in this section.

An American prospective study examined whether formula samples or other factors affected the success of breastfeeding (Feinstein et al., 1986). The most common reason identified was insufficient breast milk with other reasons identified including illness, inconvenience, nipple problems and issues surrounding work. Another study in the USA found that 43 out of the 150 women studied reported lack of milk and sore nipples as the two most frequent reasons for weaning (Rentschler, 1991). This was confirmed by a large prospective cohort study of 946 women undertaken in the USA (Schwartz et al., 2002). The most common reason for terminating breastfeeding in the first 6 weeks was "not enough milk". Returning to work was the most common reason identified for weeks 7 through 12 (Schwatrz et al., 2002). Breast pain or infections were also identified as the second most common reason for terminating breastfeeding in the first 3 weeks (Schwartz et al., 2002).

A large prospective cohort study of breastfeeding practice in The Netherlands examined the frequency of reasons for terminating breastfeeding (Bulk – Bunschoten et al., 2001). The main reasons given for ceasing breastfeeding in the first 4 months were mothers' perception that their infant was hungry and had colic. Maternal related reasons were returning to work, doubts about breast milk sufficiency and feelings of restriction caused by breastfeeding.

A longitudinal study of 556 women in Perth, Western Australia, sought to identify and describe problems experienced by mothers who were breastfeeding, and how this affected breastfeeding duration (Binns & Scott, 2002). The most common reason identified for cessation of breastfeeding was that the infant was unsettled. Painful breastfeeding and breast refusal were the two most common reasons for weaning to formula prior to discharge from hospital. The same authors conducted a similar study 10 years after the first one, in order to determine predictors of breastfeeding duration (Scott, Binns, Oddy, & Graham, 2006). Difficulties with breastfeeding in the first 4 weeks were found to increase the chance that breastfeeding would be discontinued before 6 months (Scott et al 2006). Therefore there is a need to actively intervene to prevent and treat any breastfeeding difficulties.

Concerns about milk supply and wanting someone else to feed the infant were the two most common reasons for stopping breastfeeding in months 1 and 2 and 3 to 5, in a large Infant Feeding Practices study undertaken in the USA (Kirkland & Fein, 2003). Another study of 597 women undertaken in Argentina identified that the duration and frequency of breastfeeding were significantly higher in women who did not have nipple problems when breastfeeding (Ceriani Cernadas, Noceda, Barrera, Martinez, & Garsd, 2003).

Nipple tenderness, nipple damage, breastfeeding difficulties including mastitis are all caused by poor attachment to the breast, which leads to ineffective breast emptying and therefore reduced breast milk production (James, 1999; Neifert, 2004). Inadequate milk transfer due to poor attachment to the breast leads to insufficient milk intake and inadequate weight gain (Neifert, 2004). Concerns about milk supply have been cited in the literature as one of the most common reasons for cessation of breastfeeding. This may be due to poor attachment to the breast or may be a perceived breast milk insufficiency due to mothers' not understanding normal infant behaviour (Dykes & Williams, 1999).

Tongue tie has been identified as a cause of breastfeeding problems due to poor infant attachment to the breast, (Amir, 2006; Amir, James, & Beatty, 2005; Ballard et al., 2002; Griffiths, 2004; Hogan et al., 2005). Poor infant attachment to the breast may lead to a plethora of breastfeeding difficulties including breastfeeding cessation, which could have been prevented by correct management.

Any breastfeeding difficulty which can interfere with the breastfeeding relationship between a mother and her infant should be addressed. Despite research evidence that supports early treatment of tongue tie and the subsequent benefits of continued breastfeeding, current evidence and a lack of guidelines to support treatment suggest that many potentially treatable infants are not treated. As a result of the pain and other difficulties experienced by mothers,

many may give up breastfeeding. The literature on tongue tie and breastfeeding will be examined in Chapter Two.

# CHAPTER TWO

## LITERATURE REVIEW

## 2.0 Introduction

This chapter presents a review of literature pertaining to the topic of tongue tie. The aims of this literature review were:

- to examine the research evidence of the impact of infant tongue tie on breastfeeding and early cessation,
- to examine the effectiveness and safety of frenotomy (tongue tie separation),
- to identify any possible complications of frenotomy, and
- to appraise the evidence concerning its treatment with respect to breastfeeding continuation.

This review also examined research which assessed medical opinion in regard to the management and treatment of tongue tie, in order to determine consensus views regarding treatment. The results of this literature review justified the need for the research study.

## 2.1 Tongue tie

Tongue tie or ankyloglossia is described as a congenital condition with an unusually thickened, tightened or shortened frenulum (membrane or string under the tongue) (Hillan 2008; Wallace & Clarke 2006). The frenulum may vary in length, elasticity and placement along the underside of the tongue to the floor of the mouth, which then can affect infants' breastfeeding skills in different ways (Watson Genna, 2008). The International Affiliation of Tongue-tie Professionals, an organisation comprised of clinical experts and tongue-tie researchers, has defined tongue-tie as "embryological remnant of tissue in the midline between the under surface of the tongue and the floor of the mouth that restricts normal tongue movement" (The International Affiliation of Tongue-tie Professionals, 2011, p. 1).

Tongue tie has also been classified in the literature into four types:

> ***Type 1*** is the attachment of the frenulum to the tip of the tongue, usually in front of the alveolar ridge in the lower lip sulcus.
>
> ***Type 2*** is two to four millimetres behind the tongue tip and attaches on or just behind the alveolar ridge.
>
> ***Type 3*** tongue-tie is the attachment to the mid-tongue and the middle of the floor of the mouth and is usually tighter and less elastic.

> ***Type 4*** is essentially against the base of the tongue, and is thick, shiny and very inelastic (Coryllos, Watson Genna, & Salloum, 2004, p. 1-2).

Researchers have reviewed the published literature surrounding tongue tie, in order to identify the diagnostic criteria for identification of tongue tie including the requirements for frenotomy as well as treatment options across various age groups (Suter & Bornstein, 2009). Suter and Bornstein (2009) found that there was no universally accepted definition or classification of tongue tie which made it difficult to accurately compare treatments and outcomes associated with tongue tie.

According to various authors and researchers, tongue tie occurs in between 2.8% to 10.7% of all infants (Ballard et al., 2002; Hogan et al., 2005; Messner et al., 2000; Ricke et al., 2005; Ridgers et al 2009). This range is similar to the prevalence of 4.2 to 10.7% found in a methodological review by Segal, Stephenson, Dawes and Feldman (2007) which examined prevalence, diagnosis and treatment of tongue tie. The shortened membrane limits movement of the tongue, which can affect activities such as breast feeding, dental hygiene, and speech (Amir, 2006; Kummer, 2005; Messner & Lalakea, 2002; Wallace & Clarke, 2006).

## 2.2 The infant's tongue during breastfeeding

The infant's tongue is a vital component of the suckling process during breastfeeding; its action has been studied using several methods. Ardran, Kemp and Lind (1958) examined cinegradiographic films taken of mothers while breastfeeding. They concluded that the lower jaw is raised during suckling, with the nipple "teat" being compressed between the upper gum and the tip of the tongue, which is resting on the lower gum. Weber, Woolridge and Baum (1986) used ultrasound to study breastfeeding women. They described how the tongue and the upper gum hold the elongated nipple or "teat" during feeding, with milk being removed by a peristaltic action. More recent ultrasound research by Geddes, Kent, Mitoulas and Hartmann (2008) found that milk flow during breastfeeding occurs when the infant's mid to posterior section of the tongue is lowered and increasing vacuum is applied without accentuated peristaltic action. They concluded that vacuum played an important part in milk removal during breastfeeding. However, they were unable to define the role of the tip of the tongue in milk removal and concluded that further research was needed.

Tongue tie may prevent the infant from taking enough breast tissue into its mouth to form a teat, which may affect breastfeeding (Hillan, 2008). Some infants with tongue tie are unable to attach to the breast, while others are able to attach but are less efficient at breastfeeding, due to reduced tongue mobility (Hillan, 2008). Infants may fail to transfer enough breast milk for adequate growth, while poor attachment due to tongue tie may reduce stimulation of the breast and lead to a reduction in milk supply (Amir, 2006; Ricke et al., 2005). As a result of this restricted tongue action, the mother may experience painful, bleeding nipples from the friction created by abnormal tongue movements (Griffiths, 2004). Despite frequent feeds, the infant may have poor weight gain due to poor milk intake (Amir et al., 2005; Blenkinsop, 2003; Dollberg, Botzer, Grunis, & Mimouni, 2006; Wallace & Clarke, 2006). Nipple tenderness, nipple damage, and breast pain are common symptoms experienced by mothers who are breastfeeding an infant with tongue tie (Amir et al., 2005). Often, the level of discomfort and pain becomes unbearable, and these are primary factors that led to early breastfeeding cessation. This in turn can lead to maternal feelings of failure and high levels of emotional distress (Amir, Dennerstein, Garland, Fisher, & Farish, 1997).

## 2.3 Methods

The search strategy for this literature review included searches through medical and nursing databases including CINAHL, Pre-CINAHL, Medline and Academic Search Premier, ERIC and Health Source Nursing/Academic Edition for both quantitative and qualitative research papers on tongue tie and breastfeeding. The keyword search terms included: tongue tie, ankyloglossia, frenotomy, frenulotomy, breastfeeding, and infants. All articles were obtained with a particular focus on tongue tie, its impact on breastfeeding and management including frenotomy, with specific searching for research evidence. The only limit applied was English language. The initial search was undertaken in 2007 with ongoing searches undertaken since then, including Cochrane Database of Systematic Reviews and Ovid Journals.

## 2.4 The impact of tongue tie on breastfeeding

A number of high quality studies demonstrate that tongue tie impacts on breastfeeding. One large USA study demonstrated that tongue tie causes breastfeeding difficulties and pain for mothers

(Messner, Lalakea, Aby, Macmahon, & Bair, 2000). This prospective controlled study was undertaken to determine the incidence of tongue tie in a well-baby population, and also to determine whether mothers of infants with tongue tie experienced any breastfeeding difficulties. Fifty infants from a total of 1041 infants (4.8%) in a well-baby nursery were identified as having tongue tie. Of these, 36 mothers of infants with tongue tie who planned to breastfeed were compared with a matched control group of 36 mothers of unaffected infants. The researchers found that 83% of infants with tongue tie were breastfed for at least two months compared to 92% of the control infants without tongue tie. They also found that mothers of infants with tongue tie generally had more difficulty latching their baby onto the breast and/or experienced nipple pain extending for longer than six weeks when compared to the control group. Infants with a thick frenulum were more likely to have breastfeeding difficulties (Messner et al., 2000). This study demonstrated that mothers of infants with tongue tie experienced more breastfeeding difficulties than mothers whose infants did not have tongue tie, and that tongue tie can affect breastfeeding duration.

This finding is supported by a case-control design study, which examined the effect of tongue tie on breastfeeding (Ricke et al., 2005). During the study, 3490 infants were assessed, with 148 identified as being tongue tied; a prevalence of 4.2%. Researchers found that tongue tied infants were three times more likely to be bottle fed at one week than control infants, but by one month they were as likely as control infants to be bottle fed only. Twice as many mothers of tongue tied infants had sore nipples and breast pain at one month compared to control infants (Ricke et al., 2005). This finding provides further evidence to indicate that tongue tie reduces breastfeeding duration and is associated with breastfeeding difficulties.

Reasons for breastfeeding difficulties were determined in Western Australia, where Geddes et al. (2008) used ultrasound imaging to assess infants while breastfeeding, before and after frenotomy (tongue tie separation). The 24 infants in the study had ultrasound undertaken while breastfeeding before frenotomy, and at least seven days after frenotomy. The researchers identified some key findings which were highly significant. One group of infants compressed the tip of the nipple during breastfeeding pre-frenotomy, with a second group compressing the base of the nipple. The authors postulated that the former group might represent the clinical group of infants that are unable to maintain a seal to the breast, whereas the latter group represents infants who either bite or latch strongly to the breast; both groups may cause nipple trauma. Nipple compression was reduced or resolved following frenotomy. The distance from the tip of the nipple to the hard soft palate junction was greater before frenotomy than after frenotomy (Geddes et al., 2008). This demonstrates that tongue movement is restricted by tongue tie and therefore infant latch to the breast is also affected.

The ultrasound demonstrated that the infants had a disorganised piston like motion with their tongue when suckling prior to the procedure, which was reduced following the frenotomy. Six of the mothers in this study measured their milk production in the 24 hours before frenotomy and after the procedure, which revealed that the infants were able to remove more milk from the breast post frenotomy, and that there was a significant increase in total milk production in the 24 hours after frenotomy. All the women reported that breastfeeding comfort was improved (Geddes et al., 2008). This is highly significant as it is the first study to measure the effect of tongue tie and frenotomy on milk production. It provided evidence that tongue tie can reduce milk intake and affect breast feeding due to its effect on suckling.

In a recent study using a small case series, Geddes et al. (2010) examined the sucking characteristics of five infants with tongue tie who were successfully breastfeeding. Ultrasound was used to image tongue action, with intra-oral vacuum measured with a supply line, filled with sterile water and connected to a pressure transducer. The researchers found that, despite some nipple compression and intra-oral vacuum pressures outside the normal range, milk production, milk intake and maternal pain were not affected by tongue tie. The researchers suggested that other factors, such as particular breast/nipple shape and milk ejection reflex contribute to some mothers being able to successfully breastfeed an infant with tongue tie and is in contrast to the previous study (Geddes et al., 2010): Further research is required in this area.

## 2.5 Effect of treatment for tongue tie on management of breastfeeding problems

Given that tongue tie can impact on breastfeeding, it is important to examine the effectiveness of treatment. It can be treated surgically by frenotomy (also termed frenulotomy), a minor surgical procedure involving separation or cutting of the frenulum, undertaken with sterile scissors and without anaesthetic (Ridgers et al., 2009; The Royal Women's Hospital, 2006). A frenuloplasty may also be used, which combines excision and repair of tongue tie (Ballard et al., 2002). Although laser treatment has been used for older children and adults (Aras, Goregen, Gungormus, & Akgul, 2010; Fiorotti, Bertolini, & Nicola, 2004) there have been no reports in the literature of its use with infants.

Several studies have explored the effectiveness and safety of tongue tie procedures while studying their effects on feeding problems. To date, two randomised controlled trials have been undertaken examining tongue tie and breastfeeding. In the first research study 28 infants

in an experiment group had immediate division of tongue tie, of which 27 improved and fed normally, while one continued to feed on a nipple shield (Hogan et al., 2005). The parents of 29 control group infants received 48 hours of intensive lactation support. Of these, 28 infants' breastfeeding had not improved at 48 hours. Parents were offered tongue tie separation, which was accepted by all of them. Subsequently, 27 infants improved and fed normally. Thus, separation of the tongue tie resulted in improved feeding in 54 of 57 infants, with no complications identified. This study provides high quality evidence that separation of tongue tie for infants with feeding problems can improve infant feeding when compared with mothers having intensive lactation support.

In a recent single-blinded, randomised controlled trial of frenotomy for neonatal ankyloglossia, 58 infants were randomised to either a frenotomy (30 infants), or a sham procedure (28 infants) (Buryk, Bloom & Shope, 2011). A preintervention and post intervention nipple-pain scale (Appendix ix) and the Infant Breastfeeding Assessment Tool (Mathews, 1988) were used to assess breastfeeding at the time of the intervention, at the 2 week follow-up and at regular scheduled follow-ups over a 1 year period. The parents of the sham procedure group were offered frenotomy before the two week follow up if they continued to have breastfeeding difficulties. No complications were identified. Following separation of tongue tie for infants with breastfeeding problems, there was an immediate improvement in reported maternal nipple pain and breastfeeding scores, thus providing further evidence that separation of tongue tie for feeding problems can reduce maternal pain and improve breastfeeding. (Buryk et al., 2011).

Researchers in Israel also examined the effect of frenotomy on breastfeeding problems (Dollberg et al., 2006). Employing a randomised, prospective, blinded trial, the purpose of their study was to identify if breastfeeding improved following tongue tie separation. Twenty five full term infants with tongue tie were recruited, with the main breastfeeding problems identified as nipple pain and trauma, and poor latch. The trial was blinded and randomised in order to reduce favourable bias towards separation of tongue tie by the mothers. The infants were randomised into two groups; i) a sham procedure followed by breastfeeding then frenotomy followed by breastfeeding (11 infants), and ii) frenotomy followed by breastfeeding then a sham procedure followed by breastfeeding (14 infants). The mothers were supervised during the procedure to verify that they did not try to examine the mouth of their baby to determine whether frenotomy or sham had been performed. In both groups it was found that following frenotomy there was significant immediate reduction in nipple pain score when breastfeeding ($p < 0.001$) and near significant improvement of latch (score) to the

breast ($p = 0.06$). Following frenotomy, any bleeding was minor and controlled within a few seconds and no other complications were identified. Although the sample size was relatively small, this study provides additional evidence that separation of tongue tie for breastfeeding difficulties improves pain and infant latch to the breast.

Further evidence supporting frenotomy is provided by Australian researchers who conducted a telephone survey to assess the effect of tongue tie release on breastfeeding difficulties and maternal satisfaction (Amir et al., 2005). Initial breastfeeding problems included difficulty latching, nipple pain and damage, frequent and prolonged feeding, and poor weight gain. A structured telephone interview was conducted by a lactation consultant with each mother three months after a tongue tie assessment. Sixty six infants were assessed initially with follow up data collected on 46 infants; frenotomy was performed in 75% of the infants assessed. No problems were reported following the procedure and most mothers (89%) felt they had been given enough information and the majority (74%) was "very satisfied" with the procedure (Amir et al., 2005 p. 245).

An ongoing audit of a new service in Wales where tongue tie division was commenced revealed that 100% of parents were happy with the service, and 93% reporting that breastfeeding had improved following frenulotomy (Breward, 2006).

A UK audit of a new service examined the effect of frenotomy on breastfeeding problems for 220 infants with tongue tie (Ridgers et al., 2009). Feeding problems resolved following division of tongue tie in 168 of the infants, improved in 47 infants and were unchanged in only five cases. Minor bleeding following the procedure occurred in only four cases, which ceased completely within a maximum of two minutes. Infant crying was usually caused by the surgeon inserting his finger into the mouth to perform the procedure. This demonstrates the effectiveness and safety of the frenotomy procedure; however, no controls were used to compare breastfeeding outcomes of infants who did not have tongue tie separation.

A UK prospective cohort study of breastfeeding mothers demonstrated that frenotomy increased breastfeeding duration (Khoo, Dabbas, Sudhakaran, Ade-Ajayi, & Patel, 2009). Significantly, of the 62 mother-infant pairs who underwent frenotomy, 78% were still breastfeeding at three months despite having initial breastfeeding difficulties, which included nipple pain and trauma. However, the study was limited because only mothers self referring to a clinic with their infants for separation of tongue tie due to breastfeeding difficulties were included in the sample. It was also dependent on voluntary completion of questionnaires by mothers. An uncontrolled case series had similar findings when examining the effect of frenuloplasty on maternal pain levels while breastfeeding, and on infants' latch to the breast

(Ballard et al., 2002). Each of the 2763 inpatient breastfeeding infants and 273 outpatient infants with breastfeeding problems were examined for possible tongue tie. Each breastfeeding dyad was observed while breastfeeding, and when latch problems were identified, the mother was asked to describe the sensation and quality of the baby's suck at the breast. Tongue tie was diagnosed in 3.2% (n = 88) of the inpatients and 12.8 % (n = 35) of the outpatients. One hundred and twenty-three mothers elected to have surgery. In all cases, only a simple separation of the tongue tie was required, and all procedures were performed without complications. Both inpatients and outpatients were followed up after the procedure and all mothers reported improved latch and decreased pain while breastfeeding. The results of this study provide further evidence that separation of tongue tie improves the ability of the infant to breastfeed and reduces maternal nipple pain when breastfeeding. However, the study lacked a control group and there was no long term follow up to monitor breastfeeding duration.

A recent UK prospective study was undertaken in order to assess the impact of outpatient frenulotomy on neonatal growth and breastfeeding (Miranda & Milroy, 2010). There were 62 infants in the study who had frenulotomy performed, with 51 families traced for follow-up, at two weeks post frenulotomy. Out of this group of 51 infants, all had gained weight with 90% gaining a centile, 6% staying at the same centile and 4% dropping 7.5 centiles. The average overall gain for infants was 15 $\pm$ 1.2 centiles. Sixty three percent of women reported an improvement when breastfeeding their infants. All women who were contacted reported that breastfeeding difficulties which had included painful, cracked and bleeding nipples had improved by 100% post frenulotomy, with nipple pain scores improving by 83% and latch to the breast improving by 89% (Miranda & Milroy, 2010). Therefore, in this study, frenulotomy was found to be effective in improving breastfeeding difficulties and infant growth.

The indications, safety and outcome of tongue tie separation were studied in a large non-randomised, single centre prospective study of 215 infants (Griffiths, 2004). Mothers in the sample had major breastfeeding problems including painful, bleeding nipples, continuous feeding cycles and difficulties latching to the breast, despite receiving support from health professionals. Twenty-four hours following frenotomy most infants (80%, n = 173) were assessed by their mothers to be feeding better. For 40 (19%) infants there was no change to their feeding while two (1%) had increased problems feeding, with no reasons provided. Minor bleeding was identified as a complication, with 113 (53%) producing only "a few drops of blood" and 18 (8%) producing "a small amount" post procedure (Griffiths, 2004, p. 411). Minor ulcers were found under the tongue in four (2%) infants. These results indicate

that tongue tie is associated with breastfeeding difficulties for some infants, and these difficulties can be resolved in most mother/infant dyads with frenotomy, without complications.

Finigan (2009) published the results of evaluation of a new frenotomy service in northern England. Over a three year period from 2005 to 2008, 501 women and infants were referred for treatment with 416 infants receiving frenotomy. The majority of mothers of infants who were able to latch and breastfeed straight after the procedure (n = 383), reported that breastfeeding was less painful; the infants latched better and remain latched for a full breastfeed. Of the 33 mothers who did not notice a difference, their infants either would not breastfeed after the procedure or there were other problems, such as fungal infection or extremely sore nipples prior to the procedure. Of the 228 women who were contacted 24 hours after the procedure, it was reported that breastfeeding was more comfortable and the infants were latching better. At a three month phone follow-up, contact was made with 139 mothers, with 60 reporting that they were still exclusively breastfeeding, 13 stating they had exclusively breastfed for their intended period of time, ten reporting mixed breast and formula feeding and two were expressing and giving breast milk in a bottle. No problems were identified with the procedure.

## 2.6 Safety of frenotomy

The weight of research evidence reviewed above suggests that frenotomy is an effective treatment for tongue tie, which enhances breastfeeding. However, it is important also to establish its safety as a procedure. Several studies cited already have provided evidence concerning safety of frenotomy and no problems, other than minor bleeding, have been identified (Amir et al., 2005; Ballard et al., 2002; Dollberg et al 2006; Finigan 2009; Griffiths 2004; Hogan et al., 2005; Ridgers et al., 2009). Safety has been examined further by some researchers with the purpose of evaluating complications or negative outcomes following the procedure. These studies are reviewed in this section.

A telephone audit was conducted in Edinburgh, UK to determine the safety of tongue tie separation (Hansen, Mackinlay, & Manson, 2006). This study was neither controlled nor had specific measures of outcome. Breastfeeding problems identified prior to the procedure included poor latch, sore nipples and mastitis. Forty four mothers were telephoned after a minimum 14 day period following the procedure, with 80% reporting an improvement in

feeding and 64% reporting that feeding took less time after the procedure. The study also demonstrated minimal complications following separation of tongue tie. One infant had a small amount of bleeding after the procedure, which was self limiting. Another infant was given paracetamol for possible pain with good effect. There were no reports of infection or other medical problems identified post procedure. Although this study provides some evidence supporting the safety of frenotomy it should be noted that it was described in brief in response to another article on tongue tie (Hall & Renfrew, 2005). As such the validity of the results cannot be established fully.

The safety of frenotomy is supported by Blenkinsop (2003) who undertook a retrospective audit of 21 infants referred for frenotomy to a UK feeding clinic, to evaluate the success of the treatment, and determine parental satisfaction with the procedure. Information was gathered by reviewing case notes as well as phone contact with the mother in order to discuss if frenotomy had reduced or eliminated the breast feeding difficulties they had been experiencing. All mothers reported satisfaction with the procedure, with no complications identified. The researchers concluded that division of tongue tie improved feeding in 95% of cases and that frenotomy was found to be a safe intervention for feeding problems caused by tongue tie.

Wallace and Clarke (2006) had similar findings after they undertook a small case series in Yorkshire, UK to determine indications for tongue tie division and the outcomes of the procedure. Eleven infants with breastfeeding difficulties associated with tongue tie underwent frenotomy in an outpatient setting. Breastfeeding problems identified prior to the procedure included difficulties with latching, sore nipples and continuous feeding. Following frenotomy, the mothers were contacted by phone, with most reporting an improvement with breastfeeding following separation of the tongue tie. No complications were reported. Neither this study nor Blenkinsop's (2003) study used a control group with non surgical intervention to compare outcomes. In both studies the women were contacted by phone so breastfeeding technique could not be assessed post procedure. However, in both studies frenotomy was shown to be a safe, effective procedure for mothers experiencing problems breastfeeding an infant with tongue tie.

Another small telephone survey follow up was undertaken in Canada by Srinivasan, Dobrich, Mitnick and Feldman,(2006) to measure the effectiveness of frenotomy in infants with tongue tie. This study confirmed that frenotomy reduced pain experienced by mothers when breastfeeding an infant with tongue tie. The researchers measured the change in latch and maternal pain of the breastfeeding mother, for 27 infants under the age of 12 weeks. No

complications were identified during or after the procedure. Mothers were phoned three months after the frenotomy to determine if they were still breastfeeding, whether they continued to have nipple pain, and whether they found the frenotomy improved breastfeeding. All women who were contacted had decreased nipple pain after the frenotomy. Even though this was a small evaluation study, it demonstrates that tongue tie does impact on breastfeeding and may be a reason why women stop feeding their infants. It also demonstrated that frenotomy was a safe and effective procedure for reducing pain experienced by mothers when breastfeeding infants with tongue tie.

Yeh (2008) published an anecdotal evaluation of his tongue tie division service in Taiwan. Between 1980 to 2006 there were 2620 cases of tongue tie in infants, and 158 cases in children, were treated with frenotomy. Post procedure bleeding was minimal with most self-limiting spontaneously in a very short period of time, concluding that tongue tie separation was a very safe and effective procedure. In this study, three patients required further tongue tie division under general anaesthetic due to recurrent tongue tie, which the author stated was most likely due to "inadequate release by the quick cut" ( Yeh, 2008, p. 107).

## 2.7 Lack of consensus regarding tongue tie management

While many studies (Amir et al., 2005; Ballard, Auer, & Khoury, 2002; Blenkinsop, 2003; Dollberg et al., 2006; Finigan, 2009; Geddes et al., 2008; Griffiths, 2004; Hogan et al., 2005; Khoo et al., 2009; Ridgers et al., 2009; Srinivasan et al., 2006; Wallace & Clarke, 2006) have provided evidence of the effectiveness of frenotomy for tongue tie, a review of medical guidelines reveals a lack of consensus regarding the need to treat tongue tie in this manner. In its position statement posted on its official website in 2011, The Canadian Paediatric Society stated that that management of tongue tie should be conservative, "Requiring no intervention beyond parental education and reassurance" (Canadian Paediatric Society, 2011, p. 3). Frenotomy was not recommended unless the mother was experiencing major breastfeeding problems (Canadian Paediatric Society, 2011). Neither the American College of Paediatricians nor The Royal Australasian College of Physicians: Paediatrics and Child Health has a published position statement on tongue tie and its management, which is significant by omission. This would suggest that the need for treatment of tongue tie is not well recognised or that there is lack of consensus in regard to tongue tie management. A lack

of consensus is further supported by two large research studies of opinion of tongue tie treatment.

A large survey in Canada and the USA of otolaryngologists (n = 423), paediatricians (n = 425), speech pathologists (n = 400) and lactation consultants (n = 350) revealed differences of opinions in relation to tongue tie (Messner & Lalakea, 2000). Sixty-nine percent of lactation consultants, but only 10% of paediatricians and 30% of otolaryngologists believed that tongue tie was associated with feeding problems. Sixty percent of otolaryngologists and 50% of speech pathologists, but only 23% of paediatricians believed that tongue tie was sometimes associated with speech difficulties, and 67% of otolaryngologists as opposed to 21% of paediatricians believed that tongue tie was associated with social/mechanical issues. Surgery was recommended for tongue tie by otolaryngologists for feeding (53%), speech (74%) and social/mechanical reasons (69%). By contrast paediatricians recommended surgery for feeding issues (21%), speech (29%) and social/mechanical reasons (19%) (Messner & Lalakea, 2000). This survey highlighted the difference of opinion amongst specialty medical groups, especially paediatricians, in relation to management of tongue tie. This suggests that mothers may receive conflicting advice from health professionals concerning tongue tie and its management.

The beliefs and practices of paediatric surgeons in regard to management of tongue tie were explored in an Australian survey (Brinkmann, Reilly, & Meara, 2004). Four hundred surgeons in three different specialties were surveyed using a questionnaire that explored their beliefs and practices and their management and follow up of infants with tongue tie. The response rate was 80.8% (n = 323) with 73% reporting that they practised surgery to release tongue tie. The majority of participants in this survey (80.5%) stated that reduced tongue mobility was the main indication for releasing the tongue tie, followed by poor speech/articulation. Over half the surgeons (57.6%) stated that they received less than five referrals per year. Paediatric surgeons stated they received most referrals from dentists (38.1%), followed by speech pathologists (16.9%) with very few received from lactation consultants (Brinkmann et al., 2004). However, in Australia lactation consultants cannot refer directly to specialist medical officers. If a mother of an infant with tongue tie is referred to a general practitioner by a lactation consultant for further referral to a surgeon for release of tongue tie, the general practitioner may choose not to provide a referral to a paediatric surgeon. As suggested by available research evidence, this is possibly due to the fact that many medical officers do not consider tongue tie to cause problems with breastfeeding (Messner & Lalakea, 2000). As discussed already in this chapter, medical societies do not have a position statement on tongue

tie management, resulting in a lack of consensus in regard to management of tongue tie. Finigan (2009) experienced strong resistance to the development of a frenotomy service, and concluded that there is still controversy in the UK over division of tongue tie.

## 2.8 Case studies

As well as the more rigorous research studies, additional case studies discussing tongue tie have been published. During the years 1990 to 2009, there were 31 case studies described in published literature, which have examined the impact of tongue tie on breastfeeding, and in a few cases, bottle feeding (Berg, 1990; Chu & Bloom, 2009; Fitz-Desorgher, 2003; Fleiss, Burger, Ramkumar, & Carrington, 1990; Hingley, 1990; Huggins, 1990; Marmet, Shell, & Marmet, 1990; Nicholson, 1991; Notestine, 1990; O'Shea, 2002; Ward, 1990; Wiessinger & Miller, 1995; Wilton, 1990). Twenty three of these cases were described in Volume 6, Issue 3 of The Journal of Human Lactation (1990), which was a thematic issue discussing tongue tie in infancy (Berg, 1990; Fleiss, Burger, Ramkumar, & Carrington, 1990; Hingley, 1990; Huggins, 1990; Marmet, Shell, & Marmet, 1990; Notestine, 1990; Ward, 1990; Wilton, 1990). An overview of these cases is now presented.

In the case studies, the common symptoms described by mothers, who were breastfeeding an infant with tongue tie, included nipple pain and damage, mastitis, difficulties latching the infant to the breast, inefficient sucking, reduced milk supply and poor infant weight gain (Berg, 1990; Chu & Bloom, 2009; Fitz-Desorgher, 2003; Huggins, 1990; Marmet, Shell, & Marmet, 1990; Nicholson, 1991; Notestine, 1990; Ward, 1990; Wiessinger & Miller, 1995; Wilton, 1990). From the 31 cases described, 17 infants who were breastfeeding had a frenotomy, with 16 mothers reporting an improvement in their breastfeeding difficulties following the frenotomy. The seventeenth infant was thought to have a major developmental delay as this infant did not have a suck swallow reflex present (Marmet, Shell, & Marmet, 1990). An additional 10 infants who were breastfeeding with a tongue tie did not have a frenotomy. Seven of these infants continued to breastfeed without problems, one infant required supplementation with formula, while a second mother continued to have sore nipples and reduced milk supply (Marmet et al., 1990). A third was lost to follow-up. Out of the group of four infants who were artificially feeding, three had a frenotomy. Two of the four infants who were artificially feeding were noted to be doing so due to previous breastfeeding difficulties (O'Shea, 2002). These case studies demonstrate that tongue tie can impact on breastfeeding, with frenotomy reducing or eliminating these breastfeeding difficulties. For

some infants with tongue tie, it has been shown that frenotomy was not always necessary to improve breastfeeding problems.

## 2.9 Conclusions

This review of literature on tongue tie and breastfeeding has revealed several key findings. There is research evidence demonstrating significant impact of tongue tie on breastfeeding for infants and mothers. Where tongue tie has no impact, no treatment of tongue tie is warranted. However, where tongue tie is impacting on breastfeeding, the evidence indicates that frenotomy offers significant benefit, and is a simple, safe, and effective procedure. This finding concurs with the conclusion of Segal et al. (2007) following their review of the evidence on this topic.

Despite the weight of good quality evidence of the benefits of frenotomy, there is evidence of a lack of consensus regarding tongue tie management, with some medical personnel not supporting the need for surgical intervention. It is important to raise awareness of the effectiveness and safety of frenotomy as a treatment for tongue tie, especially when the procedure has been shown in large clinical trials to have positive breastfeeding outcomes for both mother and child.

Based on this review of research, it is concluded that all health professionals should consider referral for frenotomy as the primary strategy for resolution of breastfeeding difficulties experienced by a mother of a child with tongue tie, in order to prevent cessation of breastfeeding. It is suggested that further education of health professionals regarding the problems caused by tongue tie and the effectiveness of frenotomy is required, so that they become aware of the research in this area. This will enhance their ability to confidently inform and refer mothers on the basis of current evidence, while supporting them with breastfeeding for their infant with tongue tie.

Further research using blinded randomised controlled trials to compare frenotomy with no treatment for tongue tie would be ideal. However, this review of the evidence demonstrates significant benefits of frenotomy for both mother and infant. Thus, my conclusion, in common with others (Segal et al., 2007), is that not offering a treatment that has shown to be beneficial would be unethical.

There has been no qualitative research published which described the experiences of mothers breastfeeding an infant with tongue tie. Therefore, this study used a qualitative research

approach to address this gap in the literature. It is known that tongue tie impacts on breastfeeding, causing breastfeeding difficulties, but there is no evidence of how this affects the experiences of mothers and infants with these difficulties. Thus, it was timely to identify and understand these experiences.

Chapter Three presents the research methods used in study of the effect of tongue tie on the breastfeeding experiences of women in the immediate postpartum period. This will include the research methodology underpinning the research, methods of data collection and analysis and ethical considerations.

# CHAPTER THREE

## METHODOLOGY

## 3.0 Introduction

This chapter will outline the methodological approach chosen for the research. This includes a discussion of research paradigms and their influence on research perspectives. The three main approaches within interpretive research are described including a more in depth discussion about the chosen methodology, phenomenology. The history of phenomenology will also be outlined including the different methodological approaches used by researchers within phenomenology. The chosen phenomenological methodological approach for the research that of hermeneutic phenomenology, will be described including reasons for its selection.

## 3.1 Nursing research

From the days of Florence Nightingale, as nursing evolved into a profession, it became necessary for a scientific research base to be established. This was essential in order to increase credibility in the nursing discipline (Cull-Wilby & Pepin, 1987). Prior to the 1950s nursing had borrowed theories from other health disciplines in order to meet their practice needs. In addition to nursing borrowing theories from other disciplines it also incorporated medical knowledge in order to help with the development of its own unique body of knowledge which had a nursing perspective (Cull-Wilby & Pepin, 1987). Initially nurses used experimental research designs, with the main method being the sociological method of conducting surveys (Cohen, Kahn, & Steeves, 2000). Using methods that used mathematical evaluation such as with the medical model of research, nurse researchers later realised that they were asking questions that were not suited to these approaches. Because nurse researchers were wanting to address issues that related to participants' feelings about their illness or condition, nurses turned to qualitative research methods in order to satisfy their research questions (Cohen et al., 2000).

## 3.2 Research paradigms

All researchers are guided by principles and beliefs which help them sharpen their focus and vision of the world and how they act in it (Denzin & Lincoln, 2005). The principles involved merge together beliefs about ontology (the study of the *meaning* of the *nature* of existence), epistemology (the study of "*knowledge* and how it is *judged* to be true") (Roberts & Taylor, 2002, p.306), and methodology (the *theoretical* framework which *underpins* the *choice* of *methods* which are used when generating a particular form of knowledge) (Roberts & Taylor, 2002). The mesh that surrounds and contains these epistemological, ontological, and methodological principles can be called a paradigm (Denzin & Lincoln, 2005).

A paradigm is a way of viewing a concept or framing an idea, and it also provides guidelines for investigation and evaluation; it provides processes through which investigation and research can be accomplished (Weaver & Olsen, 2006). Paradigms have been described as "lenses that help us to sharpen our focus on a phenomenon of interest" (Polit & Beck, 2006, p.16). Paradigms are "sets of beliefs and practices, shared by communities of researchers, which regulate inquiry within disciplines" (Weaver & Olsen, 2006, p.459). A paradigm can also be described as consisting of "theoretical ideas and technical procedures that a group of scientists adopt and which are rooted in a particular worldview with its own language and terminology "(Holloway & Wheeler, 2002, p.6). Paradigms are the structures within which the vocabulary, theories and principles are held, as well as the assumptions and principles that are related to a research inquiry (Weaver & Olsen, 2006). Paradigms are important components of research because they help "shape the way scientists "do" research" (Monti & Tingen, 1999, p.66).

In nursing research there are two main paradigms. These are the positivist /empiricist paradigm and the interpretive/descriptive paradigm. The positivist paradigm is based on the assumption that "what is known can be verified through the senses" (Monti & Tingen, 1999, p.64). Positivism has its philosophical roots in 19$^{th}$ century thought and the predominant philosophers who guided these thoughts and ideas were Comte, Newton, and Locke (Polit & Beck, 2006). The positivist paradigm can be described as "a reflection of a broader cultural phenomenon that, in the humanities, is referred to as modernism, which emphasizes the rational and the scientific" (Polit & Hungler, 1999, p.10). The positivist paradigm is concerned with parts not the whole, in that its nature is reductionist, and research conducted within this paradigm emphasises objective measurement and usually focuses on identifying a cause and effect. Methodologically, the researcher strives to maintain objectivity and distance

from the research process in the belief that their presence would cause a bias effect. Thus researchers are not directly involved in the research process itself and tend to be observers and measurers of events (Monti & Tingen, 1999). In this paradigm, the view is held that truth can be determined and that absolute answers are possible. However, because the universe is infinitely complex it may take a very long time to achieve objective 'truth'. Ontologically, the view is that we all share the same objective truth. In other words, we all experience reality in exactly the same way (Monti & Tingen, 1999).

Quantitative methods of data collection and analysis are usually used within the positivist research paradigm and the types of research questions that are posed, attempt to deduce the relationship between A and B, or try to support or justify a theory which can be described, explained and predicted (Monti & Tingen, 1999). When positivists undertake research, their main goal is to establish a theory, which normally involves setting and testing a hypothesis to examine the link between two (or more) variables (Holloway & Wheeler, 2002).

Thomas Kuhn described a paradigm shift in the 1960s where through evolution and development of scientific methods, the positivist paradigm focus on science, which included certain presuppositions, evolved to a new more interpretive paradigm. This resulted from the realisation that traditional quantitative research was limited, as it neglected the perspectives of the participants (Holloway & Wheeler, 2002).

In contrast to the positivist paradigm the interpretive paradigm is concerned with the whole. Ontologically, the view is that multiple realities exist and that each person has an individual view or perception of the world in which they exist. (This paradigm often refers to the 'perceived' view, as opposed to the 'received' view within positivism.) Thus, research within the interpretive paradigm is more concerned with the uniqueness of human experiences rather than the specific and objective relationship between two or more factors. It is subjective, and meaning and knowledge are gained from experience (Monti & Tingen, 1999). .

Methodologically, the researcher is involved in the process rather than being an observer. Within the interpretive paradigm reality (and therefore research inquiry) is unpredictable, as opposed to empiricist research which strives to achieve predictable outcomes. Essentially, the purpose of research with the interpretive paradigm is to understand. Thus interpretive knowledge is derived from experience (Monti & Tingen, 1999). Qualitative research methods are usually used within this paradigm. This research question which seeks to explore the breastfeeding experiences of women whose infants have tongue tie, in order to describe and understand these experiences, fits within the interpretive paradigm therefore, qualitative research is the appropriate choice of methodology.

## 3.3 Qualitative research

Qualitative research methodology uses systematic methods to explore the human experience. It is less concerned with objective collection and interpretation of data as in quantitative research, and is more concerned with gaining an understanding of an individual or a group of people (Donalek & Soldwisch, 2004). Most qualitative research approaches have some common elements. The design is flexible and may be adjusted during the course of data collection and emergent theory is developed inductively, in that it is grounded in the data. The research is context bound. As the research is conducted, the researcher must consider many variables which may affect data collection and these include the locality, time, history and current conditions under which the participant is living (Holloway & Wheeler, 2002; Polit & Beck, 2006; Polit & Hungler, 1999; Streubert & Carpenter, 1999).

Generally, within qualitative studies the researcher has a close connection with the data. In some methodologies, such as ethnography, this is further explored as the researcher immerses themselves not only in the data, but also into the setting of the group of people whose thoughts and feelings they wish to study. Qualitative researchers focus on the people involved in the research, and this includes their perceptions, thoughts and interpretations. Qualitative researchers describe, analyse and interpret the data collected. Sometimes this occurs simultaneously. The relationship between the researcher and the persons being researched tends to be a close one and is viewed as being on an equal level (Holloway & Wheeler, 2002; Polit & Beck, 2006; Polit & Hungler, 1999; Streubert & Carpenter, 1999).

The three main qualitative research approaches are ethnography, grounded theory and phenomenology. These approaches are outlined below.

Ethnographic research is concerned with the description and interpretation of cultural behaviour and ethnographers undertake fieldwork so that they can better understand a culture: the words, actions, and products of the group. As culture is not something that is visible to the eye, it must be constructed through ethnographic writing (Polit & Beck, 2006; Polit & Hungler, 1999). The purpose of ethnographic study is to develop a picture of the group of people by identifying cultural characteristics which describe this culture. Methods used to collect data include observation, interviews with members of the group and other methods such as examination of documents, camera, audiotapes and video tapes (Grbich, 1999; Holloway & Wheeler, 2002; Roberts & Taylor, 2002). Although observation is the main method used by ethnographers, it is characterised by multiple methods of data collection (triangulation).

The ethnographic research approach has been rejected for my own research as it is considered unsuitable for my project, which does not focus on a particular cultural group of people. Although I investigated the experiences of a group of breastfeeding mothers, and to some extent it may be argued that breastfeeding mothers are a cultural group, in the context of my research setting they are best viewed as a group of individuals who are experiencing similar difficulties. Furthermore, although they may have similar experiences they never come together physically as a group.

Grounded Theory was developed in the 1960s by two sociologists: Anslem Strauss and Barney Glaser. Grounded theory usually focuses on "studies in the development and evolution of a social experience-the social and psychological stages and phases that characterize a particular event or episode" (Polit & Hungler, 1999, p.247). It is used commonly to study social processes and structures. Its main aim is to identify the social and /or psychological problem that a specified group of people experience. It also seeks to identify how they cope with this problem. The goal of the research is to "generate a theory that explains a pattern of behaviour that is problematic and relevant to participants in the study" (Polit & Beck, 2006, p. 222).

In Grounded Theory the main method of data collection is in depth interviews, but observation and review of existing documents may also be used. A typical grounded theory research utilises 25-50 participants (Polit & Beck, 2006).

Certain aspects of the grounded theory approach would have been suitable for my research project. These include collection of data, usually by interview, analysis of information and categorising into codes or groups (Grbich, 1999). Other aspects are not so congruent with my research approach include analysis of data and reorganisation of information into a formal theory (Grbich, 1999). These processes are undertaken continually while the research is under process and the ideas that are obtained are used to guide the analysis (Holloway & Wheeler, 2003). This did not fit with my research question.

### 3.4 Phenomenology

Phenomenology is a qualitative research methodology which seeks to explore the meaning of the human experience and therefore gain an understanding of what has occurred (Dinkel, 2005; Donalek, 2004). In contrast to other qualitative research approaches, phenomenology is underpinned by distinct philosophical considerations; most notably the philosophies of

Husserl and Heidegger. Phenomenological research focuses on the lived experiences of participants wherein the researcher strives to identify, extract and describe themes which can be then used to give a meaningful description of the phenomenon under study.

Phenomenology has a history that can be divided into three phases: the Preparatory Phase, the German Phase and the French Phase (Dinkel, 2005; Streubert & Carpenter, 1999). In the preparatory phase the two dominant people were Franz Brentano (1838-1917) and Carl Stumpf (1848-1936) (Dinkel, 2005; Streubert & Carpenter, 1999). Stumpf and Brentano sought to "provide answers to questions that religion could not supply" (Dinkel, 2005, p.7). Both men sought to clarify the concept of intentionality, which means that "the consciousness is always conscious of something" (Streubert & Carpenter, 1999, p.45), or the way the mind orientates itself to its object in a deliberate way (Moustakas, 1994).

The dominant figures of the German Phase of the phenomenological movement were Edmund Husserl (1859-1938) and Martin Heidegger (1889-1976). Husserl has been described as the central figure in the phenomenological movement (Cohen, Kahn, & Steeves, 2000). He believed that phenomena could not be separated from the experience of the phenomena, so in order to understand the phenomena, it was necessary to describe those experiencing the phenomena (Dinkel, 2005). Husserl identified three main components to his phenomenological approach. These were essences, intuiting, and phenomenological reduction or bracketing (Dinkel, 2005; Holloway & Wheeler, 2002; Streubert & Carpenter, 1999).

In summary, there are several distinctive forms of phenomenological research. Each form possesses particular characteristics that determine how inquiry should proceed. Descriptive phenomenology aims to "generate an exhaustive description of a phenomenon of everyday experience in order to achieve an understanding of its essential structure" (Holloway & Wheeler, 2002, p.170). Hermeneutic phenomenology is more concerned with understanding rather than pure description and is based on interpretation of the experience.

A key characteristic of descriptive phenomenology is phenomenological reduction (bracketing) which requires the researcher to suspend or bracket out all previous knowledge or beliefs about the phenomenon under study so that any knowledge gained is purely a description of the phenomenon (Cohen et al., 2000; Dinkel, 2005; Holloway & Wheeler, 2002; Streubert & Carpenter, 1999). The researcher must keep phenomenological reduction constant during the research process in order to achieve descriptions in their purest form (Cohen, 1987; Dinkel, 2005; Streubert & Carpenter, 1999). It is difficult to bracket when doing descriptive phenomenological research; it is unreasonable to expect that the researcher could block all prior knowledge and assumptions before under taking the research (Caelli,

2000). Descriptive phenomenology was not suited to my research approach as it would have been very difficult for me to "bracket" all my previous knowledge and experience as a lactation consultant when interviewing the women and therefore the descriptions may not have been in their purest form.

There are difficulties associated with using the phenomenological research method. There is a lack of clearly described methods for achieving phenomenological research. Understanding what underpins the philosophy behind phenomenological research is also a challenge (Caelli, 2001).

Other criticisms of phenomenology have been described by Barrit, Beekman, Blecker, and Mulderij (as cited in Leininger, 1985, p. 106) as:

1. It is difficult to replicate a descriptive study of experience;
2. A phenomenological study is too subjective;
3. In a phenomenological study, researcher bias interferes with clean results;
4. The language of phenomenological research is too vague and ephemeral;
5. There are no procedural guidelines for conducting phenomenological research;
6. The phenomenological method is ahistorical; and
7. Phenomenological research is frequently based on the memory of participants.

The credibility of qualitative research has been questioned by some people (Sandelowski, 1995) and moves have been made by some researchers to make qualitative research more closely resemble quantitative research, especially with the use of computers to analyse data. This has transformed the appearance of some qualitative research from its feeling of the tone of art to one of objective science. The methods used are designed to help enhance its reliability and validity which are terms more appropriately associated with quantitative research methods (Sandelowski, 1995). Efforts to legitimate qualitative research and rework it as science may well distort or change what it is and therefore affect the aesthetic feel of qualitative practice (Sandelowski, 1995).

Hermeneutic phenomenology was selected for the purpose of this research. As with all research, the investigator needs to ask which type of research is best suited to the expected

group of participants, the time frame for completion of the research and resources available (Streubert & Carpenter, 1999). Streubert and Carpenter (1999) suggest that if the phenomenological research approach is to be utilised the researcher needs to address several questions. Does further investigation need to be attended on the chosen phenomenon? This can be clarified by an extensive literature review (Streubert & Carpenter, 1999). Will the lived experiences of the participants be the best source of data for the phenomena under investigation? This is because in phenomenological research, descriptions of participants' experiences should provide the best source of data (Streubert & Carpenter, 1999). If positive responses are given for all these questions then phenomenological inquiry is the most suitable method for this investigation (Streubert & Carpenter, 1999). I interviewed women whose infants have tongue tie, in order to obtain a rich and full description of their breastfeeding experience. Hermeneutic phenomenology was best suited to my research as I sought to gain an essential description and understanding of this phenomenon under study.

The following sections will outline the history of phenomenology as well as provide a description of the different types and philosophical underpinnings of each.

### 3.4.1 Interpretive phenomenology

Heidegger, a student of Husserl's, saw phenomenology as a way of understanding the essences or experience of a person rather than just describing the experience of that person. Heidegger moved from Husserl's focus on epistemology (the nature of knowledge) to a more ontological focus (what it means to be a human being) (Cohen & Omery, 1994). The two main concepts to emerge from the work of Heidegger were intersubjectivity and life-world. Intersubjectivity has been described as "the experience of many creating a community who shares a common world or 'being in the world' " (Dinkel, 2005, p.7). This meant that meanings of past traditions or previous history and experiences could be viewed within the context of the research and understood in a different way. This is in contrast to Husserl who believed that bracketing all prior knowledge and experience was important to keep phenomena pure. Life-world or Lebenswelt has been described as the world of "lived experience" (Cohen, Kahn, & Steeves, 2000, p.7). "The world of everyday experiences that are often unnoticed without specific and conscious examination" (Dinkel, 2005, p.7). Our everyday world continues on without us noticing many commonplace occurrences.

Another assumption which underlies interpretive phenomenology is the presuppositions or expert knowledge that help guide the researcher. Heidegger believed that it was impossible to bracket out all previous knowledge of the topic under research because it was this knowledge that led the researcher to consider the topic worthy of research in the first place (Lopez & Willis, 2004). This is in contrast to the descriptive phenomenological approach, where bracketing of all previous knowledge and thoughts is required. Therefore, my expert knowledge and experience in breastfeeding meant that interpretive phenomenology was the best methodological approach for the research that I wished to undertake.

During the Second World War, the development of phenomenology moved to France from Germany. Gabriel Marcel (1889-1973), Jean-Paul Sartre (1905-1980) and Maurice Merleau-Ponty1908-1961) were the key figures during this time (Dinkel, 2005). Satre believed that "a person's actual consciousness and behaviour (existence) comes before character (essence)" (Cohen, 1987, p.33). In terms of research, this would mean that the focus would be on a person's actual existence before their character or essences, either real or imagined were explored. Satre's objective was to understand and, as a result of this, change one's thinking. Merleau-Ponty, a friend of Satre's, focused more on the science of humans. He thought it was important to explore the individual person's experience as this resulted in a more valuable insight into the person than a positivistic approach (Cohen, 1987). Marcel saw phenomenology as a useful method of starting to understand the human being as part of a whole process of being (Holloway & Wheeler, 2002). Dinkel (2005) reported that the French phase of phenomenological descriptions was useful because it provided ways to understand what was real for patients and as a result provide a more holistic care for those receiving psychiatric and psychology services.

After careful consideration of the various interpretive research approaches, hermeneutic phenomenology was selected as the methodology most suited to my research, as is concerned with understanding human experience. Phenomenology is suited to nursing research because it considers the uniqueness of the individual. Life situations are explored and the meaning of the experience and the perspective of the person are described. This experience is then available for others in a way that would not be determined through observation (Edward, 2006). Hermeneutic phenomenology was selected for my research into the experiences of breastfeeding women whose babies have a tongue tie. Therefore, a discussion of the approach and its associated methods of data collection and analysis will be outlined.

### 3.4.2 Hermeneutic phenomenology

This particular phenomenological approach seeks to focus on the existential-ontological questions that result from trying to understand the human experience, and as a result interpret any hidden meanings that are not immediately exposed by investigation (Koch, 1995; Omery, 1983). The goals of hermeneutic phenomenology are to "understand everyday skills, practices, and experiences;" (Leonard, 1989, p. 51). Hermeneutic phenomenology can provide a more thorough understanding of what the main issues are for the person and therefore provide guidance for the future when considering significance of the issue for that person (Whitehead, 2004). Hermeneutic phenomenology focuses on the "meanings of the individuals' being-in-the-world and how these meanings influence the choices they make" (Lopez & Willis, 2004, p.729). It is the interpretation that the researcher derives from the narratives of the participants and how they relate to various contexts that is foundational (Lopez & Willis, 2004). Hermeneutic phenomenology is focused on studying how people understand the impact that certain events have on their lives and the significance of this for them (Cohen, Kahn, & Steeves, 2000). The goal of hermeneutic phenomenology is to uncover new interpretations of experiences that have not been identified previously because of their perceived ordinariness (Gullickson, 1993).

Hans-Georg Gadamer, a German philosopher and a student of Heidegger, continued to develop contemporary hermeneutic philosophy as originally described by Husserl and Heidegger (Pascoe, 1996). Gadamer's primary focus was on the concept of understanding; this is always an historical and analytical event focusing on the scientific study of language and what it means (Pascoe, 1996). In hermeneutic inquiry Gadamer believed that there should be a close relationship between questioning and understanding.

Two concepts of Gadamer, central to hermeneutics are prejudgement or prejudices and universality (Dowling, 2004). Gadamer (1989) describes a prejudice as an understanding that has been decided upon before all the fundamentals that decide a situation have been evaluated. The prejudice of an individual as opposed to his judgements helps develop what is historically real for him. The person who has the hermeneutic trained mind needs to recognise any prejudices which affect understanding; so that the text can be identified and valued as it is (Gadamer, 1989).

Universality has been described by Ray (1994) as "the persons who understand are connected by a common human consciousness, which makes understanding possible" (p.125). Gadamer

affirmed the position of the researcher in the "hermeneutic circle". He believed that meaning was identified via a "fusion of horizons" between the text and researcher. This is circular in process and is achieved by moving between the whole and the part. As the researcher (person) attempts to understand a text, they project a meaning. This is continually being revised as more parts emerge from the text and a deeper understanding is gained (Gadamer, 1989). The horizon of the present continues to undergo change, and during this process there is fusion with the horizon of the past. The old and new horizons are fusing together to form a new horizon. The historical horizon is viewed and it is overtaken by the new view (Gadamer, 1989).

Gadamer also believed that prejudices contributed to the formation of a person's personal horizon (Annells, 1996). In order to gain a "fusion of horizons" he believed that it was important to maintain the ideas and beliefs of the past in such a way that they are included in the new understanding of them: This is a continuous process. As a meaning emerges the researcher should reconsider his expectations. Therefore, new meanings emerge and new fore projections are developed. The constant revision of the meaning allows a deeper understanding to emerge. One is always within the hermeneutic circle.

Koch (1996) believes that it is essential to maintain a reflexive journal when entering the hermeneutic circle. This is in order to enhance the credibility of the research when the researcher describes and interprets their experience. The purpose is to document how their perceptions and thoughts are formed and changed while evaluating the topic under study. For this reason, I used a reflexive journal which described how I responded to the content of the interviews as well as the process and my reactions to any interactions.

This hermeneutic phenomenological approach was suited to my research as I sought to identify the effect that tongue tie has on women's breastfeeding experiences and what it meant for them. Although research studies into tongue tie have been undertaken before, none had considered the ontological aspect of the problem. In my research, the women had an opportunity to explore their feelings and relate this to their breastfeeding experience. This research approach provided evidence through extracts and descriptions from the women's accounts of their breastfeeding experiences.

Donalek (2004) gives an apt description of the process of phenomenological research when she states that it is necessary to recruit participants "who have lived the *phenomenon* in question and are willing and able to describe their experiences" (p. 516). As part of the research process, I identified and extracted themes from the interviews. The goal of the phenomenological research process is an "essential description of the phenomenon under

study "(Donalek, 2004, p. 516). This approach was well suited to the type of research that I undertook.

### 3.4.3 Sample selection and data generation in phenomenology

In phenomenological research purposeful sampling is used most commonly. This method of sampling involves selecting participants for research based on "their particular knowledge of a phenomenon for the purpose of sharing that knowledge" (Streubert & Carpenter, 1999, p.58). The participants are given a description of the research to be undertaken which will include a description of what will be required of them, and are given the opportunity to answer any questions that they may have. Interview is the most common method of data collection used in phenomenological research. At the first interview consent is obtained and permission to record is also obtained if required (Streubert & Carpenter, 1999).

Open ended questions are ideally suited for the researcher to use in hermeneutic phenomenology as they allow the participant to describe their lived experience. The interview concludes when the participants have completed their descriptions or stories. Data collection can continue until data saturation is reached, or until the predetermined numbers of interviews have been completed. Data saturation occurs when no further description of the phenomenon under study is discovered, and repetition of information becomes evident (Ray, 1994; Polit, Beck & Hungler, 2001). This should mean that no new themes or essences have been identified (Streubert & Carpenter, 1999).

## 3.5 Research rigour

There is some debate around the concept of methodological rigor in qualitative research. This is due to the many paradigms and various philosophical positions which inform the research process (Koch, 1996), and whether it is comparable to quantitative research (Sandelowski, 1986). When hermeneutic research is undertaken, it is important to establish methodological rigor by ensuring that the researcher aims to maintain the integrity of the text and to provide an accurate description of what the participants have experienced (Guba & Lincoln, 1981).

In hermeneutic phenomenology, a dialogue occurs between the researcher and the text. Gadamer's "fusion of horizons" or fusion of the researcher's world views, own experiences

and awareness of their background, interact with the participants to bring a new interpretation (Koch, 1996, 2006; Smith, 1999). Readers of this new interpretation should be able to follow the pathway the researcher has undertaken that led to the research conclusions (Koch, 2006)

In order to establish trustworthiness in a qualitative inquiry, Guba & Lincoln (1989) identify the importance of credibility, transferability and dependability. Credibility is established in a qualitative study when the researcher presents such accurate descriptions of the participants' experiences that the reader would recognize these descriptions and interpretations which have been described. Sandelowski (1986) maintains that the credibility of qualitative research is strengthened when the researcher interprets their own behaviour when undertaking the research in relation to that of the subjects. A way of doing this is by keeping a journal which records the researcher's thoughts and feelings about the interview process (Smith, 1999). This provides a way of reflecting on the relationship of the researcher with the subject (Koch, 2006). During the interview process I kept a journal in which I documented my thoughts about the interview. I have inserted excerpts of this into the findings chapter.

Transferability has been described as the ability to extrapolate findings from one study to other settings if required (Guba & Lincoln, 1981). This is dependent upon the degree to which the most important and significant conditions match (Guba & Lincoln, 1989). It is important for the researcher to set out and adequately describe all the information which forms the basis for the study so that others who wish to, are able apply the study to their own situation (Guba & Lincoln, 1989). Sandelowski (1986), states that it is important that the findings from a study "fit" (Sandelowski, 1986, p.32) with the research data and where it was obtained from. These findings must adequately reflect the life experiences which have been studied (Sandelowski, 1986).

Dependability within qualitative research is concerned with the stability of the data collected over time (Guba & Lincoln, 1989). Changes in research methodology, hypotheses and constructs during the research process would render research data as unreliable (Guba & Lincoln, 1989). The researcher must maintain a clear audit or decision trail whereby another researcher can follow the decision process of the study's researcher (Koch, 2006; Sandelowski, 1986). This means another researcher is able to follow the research processes and understand the decisions made in regards to subject matter, the purpose of the study, how the data was collected and how the data was interpreted when the research was undertaken (Sandelowski, 1986).

Confirmability requires the researcher to show how they developed interpretations from the research data (Koch, 2006). Confirmability can be established if audit trail linkages ascertain that the findings are based on the data (Lincoln & Guba, 1985). An auditor of the research study undertaken should be able to determine whether the data and interpretations from the research are based on the events as opposed to the researcher's personal understandings and beliefs (Lincoln & Guba, 1985). Achieving confirmability in qualitative research occurs with credibility, transferability and dependability (Guba & Lincoln, 1989; Koch, 2006).

## 3.6 The researcher: who am I?

The researcher is an instrument of qualitative research. It is therefore, important for the researcher to declare their position. The researcher's thoughts, beliefs and background all influence why and how the research is undertaken. For the illumination of the reader, I will give a brief background summary of relevant aspects of myself which will help them to understand who I am.

Firstly, I am a wife and mother of a teenage daughter. She was breastfed for 17 months. Despite being a midwife and undertaking the training to be a lactation consultant at the time of her birth, I did experience some difficulties with breastfeeding including pain when breastfeeding and low milk supply. Despite these problems I persevered, as I was knew of the superiority of breast milk and I was able to access support and advice from work colleagues and experienced lactation consultants who were conducting my lactation consultant training. This sort of support is not usually available to most women who have breastfeeding problems. I can imagine how hard it is for any woman who does experience difficulties breastfeeding, to be given conflicting advice and then is unable to access appropriate help and support.

Secondly, I am a registered nurse, certified midwife and Child and Family Health Nurse. I have a special interest in supporting breastfeeding and have been an International Board Certified Lactation Consultant for 16 years. I worked for 10 years as a midwife before moving to work as a Clinical Nurse in child health in the community health centre at Ipswich. As part of my role as a child health nurse I commenced working in the child health lactation clinic. We had one lactation clinic a week at the time of my initial employment. Currently, we operate five lactation clinics a week as the need has increased. Our local hospital offers no breastfeeding support service and has no lactation clinics.

It was while working in the lactation clinic that I first became aware of the impact of tongue tie on breastfeeding. I was fortunate during this time that there were other lactation consultants within the child health team. These included our Nursing Unit Manager, who educated me about the impact that tongue tie can have on breastfeeding. When thinking back to my time working as a midwife I cannot remember identifying tongue tie when caring for women in the postpartum period. Now in hindsight, I think that many of the breastfeeding difficulties and attachment problems mothers experienced during this time may have been due to tongue tie. It was not something we routinely checked for when examining an infant.

During the time that I have worked in the child health lactation clinics over the last 11 years I have seen many women whose infant's have had tongue tie, and been experiencing breastfeeding difficulties. Initially there was no where locally to have the infant's tongue tie assessed and separated. Fortunately, in the last 2 years, a general practitioner has commenced work in the local area who will separate tongue ties. I became quite frustrated at the lack of support for these mothers and was disappointed at the non evidenced based information they were given in regards to tongue tie management: Often by medical officers and some nursing staff at the hospital, but also by some general practitioners and paediatricians. During my time working in lactation clinic, I have seen infants who were unable to attach to the breast at all as they had such a severe tongue tie. I became frustrated when women who presented to our lactation clinic with sore nipples and breastfeeding difficulties were told by doctors when we referred them for assessment, that their infant's tongue tie didn't need to be treated, were not treated any more, would grow out of it or it wouldn't impact on breastfeeding. One doctor told a mother who I had seen in lactation clinic that the only true tongue tie he had ever seen was his own child's? Many of these women ceased breastfeeding as breastfeeding was too hard and was not working.

I approached the head of paediatrics at the hospital in order to get some support in order to establish an assessment and treatment service for tongue tie at the hospital, as is already happening at other hospitals in this state and in other states. He suggested that it could be difficult to implement due to lack of support from other doctors and suggested that I do some research into tongue tie to support my request. This suggestion, as well as much encouragement from other work colleagues has led me to commence my research into tongue tie.

I received full support from all staff in the child health team who actively recruited any mother who presented to lactation clinic with breastfeeding problems whose infant had tongue tie. All staff working in child health have became more aware of the impact of tongue tie on

breastfeeding and will often discuss any breastfeeding management strategies they have in relation to women they have seen whose infants have tongue tie or possibly have tongue tie. One of the things I found difficult to do while interviewing the women in my research was not to comment or give advice in relation to their infant's tongue tie or feeding management. I became better at this as I became more experienced at interviewing.

I am hoping that when my research is completed and published that it will be a catalyst for change of practice at the local hospital in regards to management of tongue tie in infants.

## 3.7 Area of interest

***What are the experiences of women who are breastfeeding an infant with tongue tie in the immediate post partum period?***

### 3.7.1 Design

This study utilised a qualitative research approach: hermeneutic phenomenology. Because phenomenology seeks to explore the meaning, examination and description of the human experience and therefore gain an understanding of what has occurred (Dinkel, 2005; Donalek, 2004) was appropriate for this study, which focused on description and interpretation of the breastfeeding experiences of women whose infants have tongue tie. In particular, hermeneutic phenomenology was selected because it focuses on the "meanings of the individuals' being-in-the-world and how these meanings influence the choices they make" (Lopez & Willis, 2004, p. 729) and is used to study "how people interpret their lives and make meaning of what they experience" (Cohen, Kahn, & Steeves, 2000, p. 5) .

### 3.7.2 Methods

#### 3.7.2.1 Sample

A purposive sample of 10 women was selected for interview. In phenomenological research purposeful sampling is used most commonly. This method of sampling involves selecting

participants for research based on "their particular knowledge of a phenomenon for the purpose of sharing that knowledge" (Streubert & Carpenter, 1999, p.58) (The final sample size was determined by data saturation - see below). Women were invited to participate in the research study immediately following their initial clinic visit. The criteria for selection were:

- mother's first visit to the breastfeeding clinic,
- with an infant whose tongue-tie was diagnosed at the first visit, and
- consent was given.

#### 3.7.2.2 Inclusions

- All mothers who presented to lactation/breastfeeding clinics in the West Moreton South Burnett District with infants who had tongue-tie.

#### 3.7.2.3 Exclusions

- Any mothers who declined to participate in the study.
- Any mothers whose infant did not have tongue-tie.
- Any mothers who were not breastfeeding their infant.

### 3.7.3 Data collection

The data collection method used in this study was in-depth interviews, using open-ended questions. Open ended question are ideally suited for the researcher to use in hermeneutic phenomenology as they allow the participant to describe their lived experience. The interview concludes when the participants have completed their descriptions or stories (Ray, 1994). Two interviews were conducted with each woman who consented to participate in the study. The purpose of the two interviews was to describe and analyse the differing experiences of women before and after their initial contact with the breastfeeding clinic. The first interview was conducted when a diagnosis of tongue-tie was made (when the mother first presented to the breastfeeding clinic), and explored the woman's experience of breastfeeding since their infant's birth. The second interview was conducted approximately two weeks after the

tongue-tie diagnosis has been made to explore their experiences of breastfeeding following their initial clinic attendance during which relevant advice and support had been provided.

Each interview was up to 60 minutes in length. Although it was anticipated that up to 15 participants may have been required, interviewing ceased once data saturation was reached i.e. when no new information emerged from the interviews. Ten women were interviewed for this research study. The intention was to achieve data saturation, as described above.

The interviews were conducted over a ten month period. The semi-structured interviews used open-ended questions to focus the interviews. At the first interview questions were posed such as:

- What has breastfeeding been like for you?
- Can you describe this for me?
- Please can you tell me a story that illustrates what it has been like for you?

At the second interview questions were posed such as:

- What has your breastfeeding experience been like over the last two weeks?
- Can you describe this for me? Tell me your story.

To ensure depth and detail, other questions were used as prompts during the interviews, such as:

- Please can you tell me more about how that was for you?
- I was very interested when you just mentioned XXX. Please can you tell me more about that?

The interviews were conducted in the homes of the women in the research study at a time that was mutually convenient. Open ended interviews were best suited to a research study such as this one as it required the same questions to be asked of the women in a similar sequence so that the information could be compared in order to help identify themes (Grbich, 1999). Open ended questions also allowed for exploration of the women's experiences when breastfeeding an infant with tongue tie and the narrative responses were useful in providing quotes for the overall findings (Grbich, 1999).

A weakness with interviewing is that if rapport between the interviewer and interviewee is not established, then the flow of information will be decreased (Grbich, 1999). I commenced each interview by asking each woman about their pregnancy which they were very happy to talk about and I believe helped to build the rapport between us. Another weakness with

interviewing is the outcome of the interview may be linked to the interviewer's experience as a researcher (Grbich, 1999). I was an inexperienced researcher however; I became more relaxed with the interviewing process as the interviews progressed. One of the hardest things for me was not being able to comment about the management of the women's breastfeeding experience. It was important that I explained to the women that although I was a lactation consultant I was there in a research capacity and was unable to provide professional advice (Orb, Eisenhauer, & Wynaden, 2001). This is an important part of the research process and data collection with the focus of the research being the reason for the interview. It was therefore, important that the women in this study understood this (Orb et al., 2001). There are some disadvantages to conducting interviews in the family home as the interview may be disrupted by family members such as other children, which did happen to me on two occasions. On another occasion, when I arrived at the house for the interview (a second interview) at the pre-arranged time I could hear the woman arguing with her partner. She made no comment about this and the interview went ahead although it was not a long one.

It is important when conducting interviews in the home that personal safety is considered. The interviews were arranged at a time that was convenient to the mother. I left full details including address and phone number at my workplace whenever I undertook an interview in the home.

### 3.8 Data analysis

The interviews were digitally recorded, transcribed verbatim and then the themes were identified after rereading the transcripts many times. Two tape recorders were used for the interviews in case one stopped working which did happen on one occasion. When I did the first interview I took an assistant who was a work colleague and fellow student who was familiar with the operation of the tape recorders. She assisted with setting up of the equipment which helped me relax. The interviewee gave permission for this to occur. I was more confident then with the operation of the equipment at subsequent interviews.

The concepts identified were used to analyse the experience of mothers who were breastfeeding an infant with tongue-tie, and this included how their experience changed following their initial visit to the clinic. To ensure research rigour, the process of analysis followed phenomenological principles.

Van Manen (1990) believes that when conducting phenomenological research, the manifestation of essential themes should involve describing reflectively things which tend to be obscure, and which are not immediately obvious in everyday life. In order to describe the lived experience of the breastfeeding mothers in my research, it was necessary to analyse the thematic aspect of their experience of breast feeding an infant with tongue tie, and then describe this in the written form. A theme is described by Van Manen (1990) as "the structures of experience" (p.79) and they are also described as "stars that make up the universe of meaning we live through" (p.90). These allow a more complete description of the lived experience of the mother to be completed (Van Manen, 1990). Researchers also need to be open to all perspectives when undertaking the research so that they allow any new ideas to emerge (Schneider, Whitehead, Elliot, Lobiondo-Wood & Haber, 2007). They need to be willing to explore and reflect on their own understanding of the phenomenon as well as others in order to better understand the phenomenon (Schneider et al., 2007).

Thematic analysis was conducted using a selective or highlighting approach as described by Van Manen (1990). When the highlighting approach is used, the researcher must read the text or listen to it several times in order to try and identify any themes which stand out (Van Manen, 1990). During the process of reading and re-reading the text, the researcher initially develops ideas and thoughts from the text (Van Manen, 1990). Statements are interpreted and any which are descriptive or revealing of the experience being investigated are highlighted (Van Manen, 1990). As the lived experiences of the women breast feeding an infant with tongue tie was studied, and their stories read many times, recurring themes began to emerge. The themes that emerged from the analysis of their stories revealed what it was like to breastfeed an infant with tongue tie. As Van Manen, (1990) describes, the researcher must try to identify phrases or parts of statements which captured the main thrust of the theme Descriptions of experiences which go beyond what is initially visible yield a rich account of the lived experience under study. This lived experience is described in more detail in Chapter 4 the Findings Chapter.

## 3.9 Ethical issues

There are some ethical issues to consider when undertaking phenomenological research. The issues under study are often sensitive human experiences and the nurse researcher needs to consider this when considering the timeliness of the research (Orb, Eisenhauer, & Wynaden, 2001). The process of being interviewed may be distressing for some participants, as they

discuss these personal issues. During the interview process the researcher also has to be prepared to stop the interviewing if the participant becomes distressed (Orb et al., 2001). When my research was undertaken two women became upset during the interview process and were offered further counselling. However, this was declined. Despite becoming upset at describing what had happened to them they kept telling their story and seemed very keen to continue doing this.

### 3.9.1 Consent

Consent was obtained from the women in the research study (Appendix III). They were given a verbal explanation as well as a written description which outlined the research process before written consent was obtained (Appendix IV). They were advised that they could withdraw at any time.

### 3.9.2 Confidentiality

All information collected was de-identified and confidentiality was maintained at all times by using pseudonyms.

### 3.9.3 Storage of data

The data were locked in a secure cupboard and will be stored for five years in accordance with current National Health and Medical Research Council guidelines (NHMRC, 2007), after which it will be destroyed.

### 3.9.4 Ethical approval

Ethics approval was gained from The West Moreton South Burnett Health Service District Ethics committee on the 18$^{th}$ of August, 2008 (Approval Number 46/08) (Appendix I), and

from The Australian Catholic University Human Research Ethics Committee (Register Number: Q200708 42), on the 17th of October, 2008 (Appendix II).

Other issues include potential disclosure of malpractice and participants who seek professional advice during the interview process. Researchers cannot promise absolute confidentiality because they are mandated to report certain information if revealed by the participant and may have to testify in court (NHMRC, 2007). Prior to commencing the research, the researcher must describe to the participant that their role is to collect data, not dispense professional advice. If the participant seeks professional advice during an interview, they will need to be directed to the appropriate health professional at the conclusion of the interview (Orb et al., 2001). I was not asked for any professional advice during any of the interviews however; I was asked advice in relation to breastfeeding issues once the tape recorder was turned off. If it was at the conclusion of the first interview I asked them to contact Child Health or the lactation consultant who had seen them initially. Otherwise, I directed them to attend one of the child health lactation clinics again for further breastfeeding support. I explained to them that I was unable to provide professional advice as this was not part of the research process. If it was at the end of the second interview, I did answer any questions that they may have had in regards to breastfeeding, as the interviews had been completed. However, I did invite them to attend lactation clinic again in order to have a more thorough consultation.

## 3.10 Conclusion

This chapter has explored research paradigms and their influence on research. Qualitative research methods were also discussed including the three main interpretive research approaches phenomenology, ethnography and grounded theory. The history and philosophical underpinnings of each was described and phenomenology was identified as the research approach suited to my research question. The hermeneutic phenomenology research methodology was best suited to the type of research that I undertook, as I sought to describe the breastfeeding experiences of women whose infant's had tongue tie. This research identified their different perceptions and thoughts on the whole breastfeeding process and what it meant for them. Chapter Four will describe the research findings including a discussion of the themes which were identified from the interviews.

# CHAPTER FOUR

## FINDINGS

## 4.0 Introduction

This chapter will describe the sample of women who participated in the research study and provide a discussion of the themes which were identified from the transcripts. The ten women who were interviewed for the purpose of the research, were referred from one of the lactation clinic within the health service district. When they agreed to participate in the research I contacted them, explained the purpose of the research, and then gave them an information sheet (Appendix IV) about the research as well as a consent form (Appendix III) for them to complete. Out of the sample of ten women, seven had birthed their infants by a normal vaginal delivery, two had ventouse extractions and one had an elective caesarean section.

Participation in the research was voluntary. The women were informed that they were able to withdraw at any time. All interviews were recorded via an audio recorder and then transcribed verbatim. I kept a reflective journal while undertaking the interviews. This allowed me to express my own thoughts about each of the interviews and my feelings about how their breastfeeding difficulties had been managed.

It is important to explain how lactation support is conducted within my health service district. There is no lactation service offered at the local hospital in the health service district in which I am employed. Tongue tie may be identified at the local hospital after a baby is born but no treatment for this is routinely offered. On discharge from hospital all women receive some form of post natal support. They may receive extended home visiting support from community child health if risk factors such as depression, tobacco, drug and alcohol use, domestic violence or concerns about psychosocial wellbeing are identified in the antenatal period (Queensland Health, 2008).

Women who are part of the Midwifery Group Practice, "Birth and Beyond" program are discharged home within 4-6 hours of their infant's birth and then visited daily by one of the practice midwives for 5 days. Child health support has been incorporated into the "Birth and Beyond" program and these women are then routinely offered a home visit from a child health nurse after the midwives have completed all their home visits. The mothers who are not on this program are offered three home visits by the hospital early discharge home visiting team, if they are discharged home within 48 hours of their infant's birth. If they remain in hospital longer than 48 hours, they receive one home visit providing they reside within a specific catchment area; otherwise they receive a telephone call. Any mothers who are discharged home early are advised to take their infant to their GP for a Day 5 to 10 health check. Any

women who are experiencing breastfeeding difficulties should be referred to the child health lactation clinics for further support after discharge from hospital. If they attend one of the lactation clinics tongue tie would be identified if it is a problem. If they are seen by their GP, tongue tie may be identified but they are often not referred for treatment. For the women in this study, their attendance at the lactation clinic resulted in the identification of tongue tie in their infant, which culminated in treatment and breastfeeding support.

All women within the study lived within a semi rural area west of Brisbane. Lactation clinics are held on four different days at the child health service within this district. The women were de-identified with different names being used for both the mother and infant. The interviews were conducted over a ten month period. All interview documentation was stored in a locked cupboard in the office at Child Health. The interviews were erased from the recorders once the interviews had been transcribed. The following sample will provide a description of the women who participated in the research including their breastfeeding history on presentation at the lactation clinic.

## 4.1 The Sample

Debbie (26 years of age) presented to Lactation Clinic with a history of cracked and painful nipples. Ben was her second baby and Debbie stated that she did not have any problems breastfeeding her first child. Debbie had experienced difficulty attaching Ben to the breast and was concerned that her milk supply was reduced. On presentation to Lactation Clinic Ben was nearly three weeks of age yet weighed 190gm below his birth weight. Debbie's husband had a tongue tie. Debbie was very emotional during the interview, crying at times. She discussed how upset she was at the different advice she had been given by nursing and medical staff while in hospital in relation to her breastfeeding management and Ben's tongue tie. During the second interview she stated that it had been good to tell her story for the research, and she was now able to move on as her breastfeeding was going well.

Bonny (23 years of age) brought Claire to Lactation Clinic at 11 days of age for help with breastfeeding. Claire had been breastfeeding frequently with Bonny having problems attaching Claire to her left breast. Bonny was being treated for mastitis in her left breast and it was still hard and lumpy and the left nipple was flattened. Claire's father, Bonny's partner also had a tongue tie. Claire was Bonny's first baby. Bonny was keen to participate in the research as she had been part of another research study on twins. She was relaxed and chatted

easily during the interview but became distracted at times discussing other issues not relevant to the breastfeeding. She was undecided about whether she would have Claire's tongue tie reviewed for possible separation. Bonny seemed more concerned about the impact of tongue tie on Claire's speech when she was older than any impact on breastfeeding.

Julie (39 years of age) presented to Lactation Clinic with John, her first baby when he was 7 days old. Julie had been experiencing difficulties breastfeeding John since birth. When seen in Lactation Clinic, John was only having one breastfeed per day. The remainder of his feeds were expressed breast milk and formula given in a bottle because he would not latch to the breast and feed. Julie was married and in addition to John she had two stepchildren. When Julie was interviewed she was quite upset about the different and sometimes conflicting information about tongue tie that she had been given while in hospital. She expressed frustration at the lack of a management plan for tongue tie at the hospital where John had been born. In the second interview she stated that she was sure that if John's tongue tie had been separated straight after birth she would still be breastfeeding. Julie spoke positively about the support she had received from Child Health.

Kim (27 years of age) and Riley were referred into Lactation Clinic when Riley was 3 days old as a marked tongue tie had been identified at birth. An appointment had already been made to have it separated. Riley was breastfeeding frequently and Kim had sore nipples. Riley was Kim's first baby. Despite having breastfeeding problems, Kim was very relaxed during the interview and remained positive about her whole breastfeeding experience. I feel this was probably due to the support she had been given during pregnancy and during Riley's birth from the group practice midwife who had been caring for her.

Hilary (28 years of age) and Gerry attended Lactation Clinic when Gerry, her first baby was 4 days of age. Hilary described difficulties attaching Gerry to the left breast and also reported that he was fussing when breastfeeding. Hilary had been teary during her initial appointment in Lactation Clinic. Gerry's father also had a tongue tie as a child. Hilary spoke at length during her interview using many words at times to describe her experience. She seemed to be trying to evaluate and process what had happened and was looking the best way of managing her breastfeeding difficulties. She did not identify tongue tie as the main reason for her breastfeeding problems but stated that it may have been one of the reasons she was having some difficulties. At the time of her second interview she did not plan to have it reviewed for separation.

Libby was 10 days of age when her mother Mary (28 years of age) brought her into Lactation Clinic. Libby, Mary's first baby, had lost more than 10% of her birth weight initially but was

starting to regain weight. Mary was breastfeeding using a nipple shield as she had experienced cracked and tender nipples. These were healing. Libby's tongue was described as being heart shaped and she was only able to get her tongue to the gum line. Mary was married and no family history of tongue tie was identified by her. During the interview Mary expressed how difficult it had been for her because she and her husband had been given conflicting information about tongue tie management. She had been advised by a paediatrician not to have Libby's tongue tie snipped. However, when seen in the lactation clinic the option of tongue tie separation as a way of managing the breastfeeding difficulties had been discussed by staff. At the time of the first interview she was unsure about what to do. Mary thought that having the tongue tie separated would be traumatic for Libby. By the second interview, Mary and her husband had changed their mind and Libby's tongue tie had been separated the day before. Breastfeeding had improved.

Merri (37 years of age) brought Cassie her first baby, to Lactation Clinic when she was 12 days of age. Merri was having difficulties attaching Cassie to the breast and Cassie was having some breastfeeds as well as bottles of breast milk and formula. Merri's milk supply was reduced. Cassie was Merri's first daughter but her partner also had a daughter. Merri was receiving home visiting support from a child health nurse due to relationship issues with her partner. Merri expressed disappointment at not being able to breastfeed Cassie and that breastfeeding had been a lot harder than she had expected. She had also expressed her disappointment at the lack of support while in the hospital with her breastfeeding. Although agreeing to the interviews when I arrived for the second interview I could hear arguing in the house. Cassie asked me if it would take long so I knew it would be a brief interview. Despite this I was able to obtain an insight into her breastfeeding experience.

Charles was 9 days of age when his mother Rosie (36 years of age) brought him into Lactation Clinic. Both of Rosie's nipples were grazed. Rosie was only breastfeeding from her left breast and was expressing from her right breast and giving Charles expressed breast milk in a bottle. This was because her right nipple and areola were both grazed. Rosie was very teary during the interview and was reluctant to even attempt to try to breastfeed Charles from the right breast even with supervision. An appointment had already been made for Charles to have his tongue tie separated by a doctor. Rosie's partner was very supportive. During my interview with Rosie she became quite teary when describing her breastfeeding experience. Charles grizzled during the entire interview but she let her partner attend to him as she continued to describe what had happened to her. I felt as though she wanted to tell her story and process everything that had happened.

Anakin was Anna's (36 years of age) first baby. She brought him to Lactation Clinic when he was 5 days of age. He weighed 400gm below his birth weight which meant he had lost more than 10% of his birth weight. Anna reported that Anakin was breastfeeding 3-4 hourly, was slipping off the breast constantly and was being given extra milk via a bottle. She also stated that he had been passing urates in the last 24 hours (this indicates a reduced milk intake). Anna had firm breasts and both nipples were cracked. A moderate tongue tie was identified and an appointment had been made for review of it by her GP. Anna lived with her partner who was very supportive. Anna spoke freely about her breastfeeding experience and was teary at times about how difficult it had been. She had not intended to breastfeed more than 1-2 days but now passionately wanted to continue breastfeeding despite the problems that she had experienced. She was very enthusiastic and easy to interview as she described her breastfeeding experience.

Kyra (29) brought Adam to Lactation Clinic when he was two weeks of age. Kyra was married and Adam was her second baby. Kyra had been breastfeeding Adam since birth but continued to have painful and cracked nipples. The lactation Consultant in the clinic suspected tongue tie and sent her to the GP for review. Kyra's first child Sean had a tongue tie. Despite Anna's first child having tongue tie she did not seem to expect that this might happen again. Her breastfeeding experience must have felt different the second time. When I phoned her to arrange the second interview she told me that the doctor had said that Adam did not have a tongue tie. It made me think about the need for an assessment tool. The nurse in the Lactation Clinic had thought that Adam had a tongue tie but the doctor didn't. I didn't examine his mouth so am unsure myself if he did have a tongue tie or not. Kyra didn't seem concerned about the different opinions in regards to the tongue tie. She just wanted to know why her breastfeeding was still painful. She stated that she thought it must be her fault and that she must be doing something wrong. Despite this she was determined to continue breastfeeding.

### 4.2 Tell the story

The themes that emerge from the analysis tell a common story. That is the story of the expectations, challenges, disappointment, frustrations and relief that the women felt during the initial period when they started to breastfeed their infants. Consistent with hermeneutic phenomenology, the interpretation of the findings which is presented within several themes is a fusion of the participant mother's perspectives with those of my own. The journey is marked

in six distinct phases. These are 1) Expectations; 2) Something is wrong; 3) Questioning, seeking advice, no real answers; 4) Symptoms and perseverance; 5) Approaching the wall it's all too much and 6) Relief. These themes are discussed and interpretations made as to their effect on the women's' breastfeeding experience.

### 4.2.1 Expectations

The theme *Expectations* describes the participants' view of the world regarding their breastfeeding intentions. All of the women in this study had planned to breastfeed and none of them had anticipated that they would encounter problems that might prevent this. As a consequence, when they later experienced problems feeding their child they found it very difficult to manage. They were well informed having read or heard about the benefits of breastfeeding from friends and family and believed it to be very important for their child's early development and growth and, on this informed basis, had determined that this was what they were going to do. For some of the women bottle feeding breast milk substitutes was not even a consideration. Although several of the women had not anticipated any problems at all, the women were not naive, and most of them were aware that there could be difficulties with breastfeeding but most of these could be overcome with perseverance. On the whole, they expected it would be easy to latch and breastfeed their baby; because breastfeeding is so natural. Most of the women acknowledged that breastfeeding was easier to do once established and felt that it was better for the baby. Some of the women held a pragmatic view, feeling that they would attempt to breastfeed, but if it did not work out they could always bottle feed. However, although they had considered the possibility that breastfeeding might not work for them, they could not be said to be anticipating it.

The following quotes are typical of the women's views and demonstrate their intentions to breastfeed:

> "*I always wanted to breastfeed. There was no, there was nothing else ever entered our mind. We didn't even want to buy bottles because we were just so prepared to breastfeed". (Kim)*
>
> *"I was pretty ah set on breastfeeding um I wasn't um, in fact yeah I didn't even factor in bottle feeding". (Hilary)*

The women expected to breastfeed, assumed it would be easy to do as it is the natural way to feed a baby. They did not consider that there might be any difficulties with breastfeeding. For example, one first time mother described how natural she expected it would be. Her simply stated quote demonstrates her conviction that it would be easy:

> *"I didn't even think I would have trouble I thought I would be able to just plonk her on or and we'd be happy but no... I just thought that all babies would be able to breastfeed or I didn't even think anything would go wrong, wouldn't be able to breastfeed". (Merri)*

During her interview Merri expressed her views emphatically. This is demonstrated by my journal entry after our first interview where I wrote, "*Merri expressed clearly her strong desire to breastfeed".* Merri had not really considered the possibility that she might not be able to breastfeed, or even that she might experience any breastfeeding difficulties. This is similar to another first time mother, Kim who also thought that breastfeeding would be easy. As perceived by Merri, the root of her belief was that breastfeeding is 'natural'. "*I honestly thought it would be so much easier cause they say breastfeeding is so natural ".*

Anna, one of the first-time mothers, did not plan to breastfeed for any longer than a few days. However, once her son Allan was born and breastfeeding started she decided that she loved the whole breastfeeding experience and wanted to continue. Breastfeeding felt like the right thing to do because it was so natural. She found the experience very emotional.

> *"Yeah, no, I was actually adamant that I going to do the colostrum and then actually go to formula feeding and when he came out and I did the breastfeeding, you know the skin to skin to start off with when they popped him straight on there and my first feed it was, just like, I don't think I'll be doing formula feeding 'cause it just felt so natural". (Anna)*

Based on what they said during their interviews, many women were aware of the benefits of breastfeeding and breast milk for infants. They described many of these advantages for the baby's health and growth and gave these as reasons for wanting to breastfeed. Another of the first-time mothers, Hilary described some of the advantages of breastfeeding and breast milk for both the mother and the infant. She seemed aware that breastfeeding may not be easy initially, but after any problems were resolved breastfeeding would improve and become easier.

> "*I talked to lots of other ladies of all different ages their experiences of what they had gone through as well as a bit of reading and just*

*understanding that it wasn't going to be easy initially , um and just to persist with it um and also um I guess it was um yeah just understanding that it wasn't easy and um but at the same time, all the benefits of having the antibodies from the breast milk and everything else you get for the extra nutrition for the lesser quantity, the ease once you do get it going ".(Hilary)*

Other mothers also discussed the health advantages of breastfeeding for their infants and why they wanted to breastfeed. The idea that breastfeeding was natural was common, but the women's overriding concern was for the welfare of their child, and they shared the conviction that breastfeeding was much better for the baby. This seemed to be very important to them, and they appeared to link the two concepts together, in the view that 'natural was best'. As stated by Rosie: "*You just think well it's natural it's better for the baby, so yeah".*

Although all women indicated that they had planned to breastfeed, for some of them, their attitude seemed to be that if it did not work out they could always move onto bottle feeding. For some women they seemed to have some doubt in their minds that they would be successful at breastfeeding and had considered the possibility that they might encounter problems. However, these possibilities were very generalised! For these women, their approach was somewhat fatalistic and they presented the view that if it did not work, it did not really matter too much-at least they had tried. It was not too critical because they always had the fall back position of bottle feeding. The following quotes demonstrate the way some of the women thought about breastfeeding:

*"It was like yeah I was going to breastfeed if I didn't have any problems... I would have a go and if it didn't work if it didn't work out. Whatever, so". (Debbie)*

*"I had thought breastfeeding the whole way along, if I could but, yeah, it sort of remained to be seen whether or not I could". (Julie)*

And the following quote from Bonny characterises the fall back position of bottle feeding: *"It was kinda breastfeeding if possible, um if it wasn't possible then it was going to be formula. So it was always going to be breastfeeding".* Other women had anticipated that they may have breastfeeding difficulties in the beginning. They thought that breastfeeding may be hard initially but eventually they would be successful once they resolved any breastfeeding difficulties that they may be having. They anticipated eventual breastfeeding success. These women had not really considered the possibility of failure. This view is illustrated by Hilary

who said "*My initial expectations before I gave birth that yes it was hard but it would come good"* and Rosie who stated:

> *"Everyone else was like yes, it's not easy but stick with it you'll get there But um yeah you just sort of think it's a natural process you see other mothers out and about feeding, friends feeding and you just think well it's natural it's better for the baby, so yeah". (Rosie)*

This theme of *Expectations* explores the women's breastfeeding expectations and beliefs. They all described the importance of breastfeeding in order to achieve optimal health for their infants. Most anticipated that they would successfully breastfeed, even if they did experience some initial breastfeeding problems. For some of the mothers who planned to breastfeed, they also planned to stop breastfeeding if they encountered too many difficulties. To some extent, they had considered the possibility that they might not be able to breastfeed and in this context had considered alternatives. Although not all of the women described initial confidence in their ability to breastfeed successfully, they appeared to believe that they would likely be successful. These expectations and beliefs confirmed what I already knew from my work as a child health nurse and lactation consultant. That is that most women want to breastfeed. Their expectations and beliefs develop from their own life experiences and knowledge, and can affect the way they approach breastfeeding and any problems that they may encounter.

### 4.2.2 Something is wrong

The theme *Something is wrong* describes the women's view of their world when their breastfeeding experience started to unravel with problems developing that they did not anticipate. The women were not always aware of what was happening to them but as problems developed, such as difficulties latching their babies to the breast and cracked nipples, further problems with breastfeeding then resulted. Tongue tie was identified in some situations by hospital midwives as a possible cause of some of the breastfeeding difficulties, but for other women no cause was identified. If tongue tie was identified as a possible cause of breastfeeding difficulties the women were often given no explanation of how this might affect their breastfeeding. Often no other explanation was given to them by hospital midwives or medical personnel for their difficulties. All the women kept trying to breastfeed because this was what they wanted to do, but kept encountering difficulties. These breastfeeding

difficulties affected how they felt about breastfeeding with the women often dreading breastfeeding due to the pain they had been experiencing previously.

The following quotes demonstrate what was happening to some of the women as problems started to occur. A few of the women developed sore and cracked nipples while in hospital but these were not often identified as a problem by midwives. These women did not seem to have received appropriate support and advice in regards to correct management of the identified breastfeeding problem.

> *"And I knew by Monday that I was having problems and that because when like my, you could see that there was problems there and feeding was hurting and they'd bleed or actually in hospital I said to them that it had bled a little bit and they said that was OK as long as it was not pouring... Like I didn't even, I obviously had cracked nipples or that. But I didn't really pick up on it until I got home ". (Debbie)*
>
> *"It got cracked, split and pressured all over on my left hand side". (Bonny)*
>
> *"I ended up with cracked nipples both sides both very sore ". (Kyra)*
>
> *"In hospital we had, it was uncomfortable and not sort of easing then ended up with cracked and sore blisters on my nipples and sore nipples". (Rosie)*

These women all developed cracked nipples. They recognised that this was not normal and that this was not how breastfeeding should be for them yet they were given little support or guidance with their breastfeeding while in hospital. This demonstrates a lack of understanding by health care professionals about what is normal when breastfeeding a newborn infant. This was a difficult time for the women as they tried to understand what was happening to them.

Other women were aware that their infants were not latching correctly because breastfeeding was painful for them. Mary was not sure if her infant Libby was even latched properly but was aware that her nipples became sore very quickly and this was not normal. She was unable to latch Libby to the breast and this was done by the hospital staff, leaving her very unsure about the whole breastfeeding process. As she explained, *"I think they put her on the breast nearly straight away, ah yeah. I don't know if she latched properly or not but it didn't take long for my nipples to be really sore".* Other mothers also had difficulties latching their infants and as a result of this their nipples became very sore. It became very frustrating for

them as they kept trying to breastfeed their infants but kept having breastfeeding difficulties. They seemed to understand that breastfeeding was not progressing as they expected it would but did not understand what they were doing wrong:

> *"I got sore nipples 'cause obviously he wasn't attaching properly". (Anna)*

> *"Sometimes it can take me up to half an hour to get the courage to get him on 'cause it hurts". (Kyra)*

For some of the women, tongue tie was identified in their infants. However, they were not given any information by staff to help them manage any breastfeeding difficulties that may have been caused by the tongue tie. They were not aware that tongue tie may cause problems with breastfeeding. The expectation from the health care professional looking after them was that they were to just keep trying to breastfeed despite the pain and difficulties they were experiencing. Tongue tie was not identified as a possible cause of their breastfeeding difficulties. They were very motivated to continue breastfeeding and really wanted to be successful so just kept trying. The scenario described above is summarised in the following mothers' quotes:

> *"When he was born we were told that he had a tongue tie... since he came home and since his tongue tie has been sort of more predominant, he has spent a lot more time on the bottle um because of his tongue tie". (Julie)*

> *"I knew there was extra bit of skin and they couldn't stick their tongue out or, but I didn't know it could affect feeding or anything like that ". (Debbie)*

> *"It did appear to be somewhat difficult for um a number of reasons that could have been factored into it, tongue tie was one of them". (Hilary)*

I commented in my journal entry at the lack of appropriate breastfeeding support when tongue tie was identified in hospital and the impact this had on the mothers: "*Frustration by mothers of their poor management by hospitals and medical staff. No clear management strategy for infants with tongue tie".*

Kim, a first time mother became aware that there was something wrong with her son's mouth shortly after his birth that this was affecting his breastfeeding: *"There is something wrong*

*with his mouth. Like I didn't know what it was".* She went on to describe in detail how her breastfeeding was affected:

> *"He seemed to attach well and everything, but he just kept um slipping back all the time, and he had trouble poking his, he couldn't get his tongue past his teeth, like past his gums, so he couldn't open his mouth, like he could open his mouth, but he couldn't sort of lick or poke his tongue out very far". (Kim)*

Other women continued to struggle with breastfeeding as their infants were not attaching and breastfeeding well. They knew something was wrong, as breastfeeding was not progressing like they had anticipated it would. They kept trying hard to make it work, even though they continued to have problems. These quotes are examples that demonstrate the strength of their feelings:

> "*So during the day I would try my damdest to get him latched on. And you know for a couple of days there he did really well, and then, no way". (Julie)*
>
> *"I was having trouble actually putting her on latching on to my my boob and like we were I felt like I was feeding for hours ... I thought she was sucking it but she wasn't sucking she wasn't even on it properly she wasn't latching on". (Merri)*
>
> *"My expectation was that he would start feeding or he'd get at least get some sort of contact um with the nipple within about an hour and then um, um but he didn't he was um he was interested but he wasn't really, there yeah he it wasn't as effective as I thought it was gonna be for what reason I'm not entirely sure". (Hilary)*
>
> *"I thought I had a handle on breastfeeding, and obviously didn't 'cause the next two, two nights he wasn't attaching he was only getting little bits and pieces". (Anna)*

All of the women made a concerted effort in order to make breastfeeding work for them. They were very committed to breastfeeding and wanted to be successful. Many of the women started to become frustrated and emotional as breastfeeding did not improve and they continued to experience problems. Despite trying everything they could to get their infants to attach and breastfeed they still experienced problems. Eventually they became frustrated and tearful as the breastfeeding relationship with their infant that they had imagined and

anticipated did not eventuate. The following quotes are typical of the women's experiences. They demonstrate how, despite their discomfort, they continued to struggle to breastfeed:

> *"I was trying to stay calm but it was incredibly frustrating to see him he'd get so upset that he couldn't get on um ".(Hilary)*
>
> *"..struggled to feed him cause it was getting more painful more blisters more bleeding ".(Rosie)*
>
> *"It was kinda where I was breastfeeding it was so painful that I was sitting there crying and then she wouldn't feed properly because I am sitting there all crying and that".(Bonny)*

In summary, the theme *Something is wrong* described the difficulties that the women encountered with breastfeeding. As they tried to breastfeed their infants they experienced different problems including difficulties latching their infants to the breast with some women developing cracked and sore nipples. Tongue tie was identified in some cases as a possible cause of these breastfeeding difficulties but often the women were not given appropriate advice and support by health care professionals in regards to managing this issue. Despite the problems that they experienced they continued to keep trying to breastfeed, believing that the problems would resolve. Some of the woman became teary and emotional as these problems continued.

### 4.2.3 Questioning, seeking advice, no real answers

The theme of *Questioning, seeking advice; no real answers* describes the women's world as they started to ask questions and seek advice about all the breastfeeding difficulties they were experiencing. They wanted help with the breastfeeding problems they were having and tried to be proactive by seeking advice from health professionals. They wanted to know why they were having problems breastfeeding and what they could do to fix their problems. When tongue tie was identified in some of the infants, the mothers continued to ask questions about it in order to better understand what it was and whether it would affect breastfeeding. They wanted to have the breastfeeding relationship with their infants that they had imagined they would have. As they started to have breastfeeding problems, they asked for help from both health professionals in the hospital and other people such as friends. They were not always given answers that solved their problems or which answered their questions.

Debbie, a second time mother, developed cracked nipples soon after her son Ben was born. When she told her private Obstetrician about her cracked nipples while she was still in hospital, she was assured that this was alright as though this was a normal occurrence with all breastfeeding women. Tongue tie was not identified as a possible cause of the cracked nipples: *"I've got cracked nipples and he said that's fine put paw paw ointment on it".* Despite her cracked nipples she continued to breastfeed with more problems developing. She kept asking the nursing staff for help but did not get any answers as to why she continued to have cracked nipples and painful breastfeeding:

> *"You could see that there was problems there and feeding was hurting and they'd bleed or actually in hospital I said to them that it had bled a little bit and they said that was OK as long as it was not pouring". (Debbie)*

In addition to developing cracked and bleeding nipples her breast milk supply reduced. She continued to ask for help including contacting a friend for help. Debbie was desperate for help and kept seeking out advice and support. This was an emotional time for her and she was tearful during the interview when recalling the details of what had happened:

> *"Um I ended up ringing a friends sister who lives at [town named] and I said I need help can you watch I just want someone to watch me, and she has got four kids and she said I can watch you from my experience and whatever and then her neighbour is the rep the lady from that Australian Breastfeeding Association, [town named] Jodi [pseudonym]. And um so I went there and she bought, gave me a DVD to watch on attaching and everything and that was like good to refresh but it kinda didn't help me like I already had the damage and I needed someone to say is it Ok to do it the same or whatever".(Debbie )*

The following quote from my diary demonstrates how emotional Debbie became during the interview.

> *"Debbie talked steadily for 20-30 minutes becoming emotional at times. She was offered further counselling but declined. She was very upset at all the different advice she had been given in regards to breastfeeding management".*

Debbie thought that Ben may have had a tongue tie because she had seen something in his mouth and she knew her husband had also had a tongue tie. She did not know what a tongue

tie was or if this could affect breastfeeding. This may be indicative of the lack of information in the general community about tongue tie. She had read some information in a booklet that tongue tie could reduce milk supply. Debbie continued to seek help for her breastfeeding problems by returning to the hospital where she had birthed Ben. She told the nurse who she saw that she thought that Ben may have a tongue tie, *"I told Gabe [pseudonym] at the hospital and she said that the fact that he was attaching was that it wasn't severe enough to have anything done to it".* The nurse said it wasn't too bad and that stress that was causing her breastfeeding problems: *"I was concerned about my milk supply and she said that it would be because I was stressing out and that was why I wasn't getting enough expressing".* Again she was not given appropriate advice and support which helped her with her breastfeeding difficulties.

When breastfeeding started to unravel and obviously was not working as the women expected, some of the women tried different ways to make breastfeeding work. The women really wanted to breastfeed and kept trying to do anything to be successful with their breastfeeding. This often included not actually breastfeeding their infants but expressing and giving their infants milk in other ways as demonstrated by this quote from Mary a first time mother.

> *"Um, well, different times they couldn't really get her to latch. On two occasions and they um hand expressed some milk and used a syringe to feed it to her". (Mary)*

Eventually Mary was able to breastfeed but had to use a nipple shield to help her when breastfeeding Libby. She was unable to latch Libby directly onto the breast:

> *"At the beginning um it was very painful um and then I was introduced to a nipple shield which um my nipples have now pretty much healed. Um and I am finding the nipple shield is a lot better to use". (Mary)*

Similarly, Hilary another mother tried many different ways to make her breastfeeding work successfully but continued to have problems: *"I was doing lots of different things and nothing was really resolving it".* All of the mothers kept asking for help. They realised that breastfeeding was not progressing as they thought it would and they kept asking questions of the nursing staff caring for them. They wanted appropriate help and advice however; they did not always get the answers that they anticipated would help them with their breastfeeding difficulties. They also received different advice from different staff which was confusing for them. As Bonny stated, *"In the hospital was weird cause every midwife had their own sort of*

*way of dealing with it, so by the time you left the hospital I kinda just went by the last midwife".* This suggests a lack of consistency of knowledge in regards to breastfeeding amongst nursing and midwifery staff. This caused some confusion for the mothers and left them wondering what the right information was and who they should believe. This is exemplified in Bonny's statement: "(I) *cried cause it just hurt so much and you just don't know what to do especially like the first time, everyone is full of advice but you don't know what to take and things you try don't always work and so you kinda just sit there and say well that's it...".*The mothers were looking for reassurance that they were 'doing the right thing'. Their priority was the health of their infants. The following quotes demonstrate the sort of conflicting information the women received:

> *"it was a process of quite a quite a number of midwives coming in and trying different things with him to try and get him to feed to feed effectively... at the same time it got very confusing and probably had me get quite angsty as well really but there was no one there saying 'it's OK you are doing the right thing no you need to be doing this, you need to be doing that'". (Hilary)*
>
> *"With the amount of different advice and instructions that we received it was all really confusing of what to do". (Mary)*

Some of the mothers developed specific breastfeeding problems and wanted help and advice to resolve their problems. When they sought help, they were either given no appropriate help which they could use to resolve these issues or were reassured that the problems they were experiencing were normal. As Mary said, *"I asked the midwife in hospital, like my breasts are really full is there anything I should do first and she said, 'No just do it as usual'".* The view that health professions regarded the mothers' problems as normal is reinforced in the following quotes from Rosie and Anna:

> *"A split left nipple um it didn't really seem to ease but no-one seemed concerned at the hospital ... nobody mentioned anything about a tongue tie and said we were doing great. Even though we had bleeding nipples". (Rosie)*
>
> *"They'd wack him on and then they'd walk off and he'd be right for two seconds and then he's pull himself off because he's not getting that proper suck his tongue wasn't, now that I think about it his tongue wasn't actually coming out. 'Cause it was only coming to his gums...*

*everybody had a different point of view on how to get it, do the football hold or do the cradle hold and that... one of the midwives had actually said to go and get a breast pump and express if that's the case and feed him that way 'cause he was losing weight". (Anna )*

Following my interview with Rosie I wrote the following in my diary, which described how she was feeling: "*Rosie was very emotional during this interview. She had lots to say and obviously she was upset with all the difficulties that she had experienced".*

For some of the women, tongue tie was identified as being present in the mouth of their infants by the nursing staff looking after them. However, this was often not identified as being something that may cause any breastfeeding problems. The women were not told what tongue tie was, and if it would affect breastfeeding in any way. This was not something they had heard of or read about as being potentially part of their breastfeeding experience so they were unsure what to do with the information they had been given. As Bonny said, *"No. It was kinda just oh yeah she is mildly tongue tied that's it...you never really quite know what to do and especially with tongue tie".* Hilary was told,"*... it wouldn't it probably wouldn't affect his feeding as such in fact it would probably more affect my nipples um which it hasn't as far as I can tell ".* Merri, blamed herself for the problems she was having: *"They said that she was tongue tied but I wasn't really understanding what that meant. I just thought 'cause she couldn't latch on. I thought it was me".* Mary, another mother was told that her baby had a tongue tie but was advised not to seek any treatment for the tongue tie even if it was suggested by nursing staff. She did not know what tongue tie was or how it might affect her breastfeeding. This was confusing for her as she had been given conflicting advice and was unsure about what to do. At the time of her interview she was having breastfeeding difficulties and was using nipple shields due to painful breastfeeding. Mary's breastfeeding difficulties included being unable to latch her infant on to the breast in order to breastfeed. As she explained:

*"I didn't actually understand what it was to start off with um a few people mentioned it but no one really said really too much about it. Yeah my paediatrician said that we would get advice that you should get it cut but he wouldn't worry about it". (Mary)*

For other mothers tongue tie was identified but the advice and information given to them in regards to its management was confusing for them. There was no clear management strategy for tongue tie in the hospitals where they birthed their infants. This caused stress and anxiety for them as they tried to work out what to do with the breastfeeding issues that they were

having with their infants. Bonny, one of the mothers was given the following information on how to breastfeed an infant with tongue tie:

> *"She told me that to let them suck it in if they're tongue tied so you just put the nipple just on their mouth and let them suck it in so if they're tongue tied they can try and manoeuvre it around them".(Bonny)*

Julie another mother was also given conflicting information about tongue tie management and its possible treatment by the hospital staff. This was a very emotional and frustrating time for her as she tried to work out what was happening and what was going to be done to manage her son John's tongue tie.

> *"Um we were told that yes he could get done at the hospital and then no he couldn't and then yes he can and then no we couldn't. It was really, the whole week in hospital was like a sort almost a rollercoaster as far as the tongue tie was concerned... Either they can or they can't. You know it's fair enough I was told at one point that yes they can but is not common knowledge... for a new mum having a tongue tied baby, newborn and being put through the wringer basically, because that's how I felt".(Julie)*

The theme of *Questioning, seeking advice; no real answers* describes the women's world as they started to ask questions and seek help and advice in regards to all the breastfeeding difficulties they had been having. They were aware that breastfeeding was not progressing as they had imagined it would and tried to find answers to the questions they had in regards to their breastfeeding difficulties. The women were often given inappropriate advice about how to manage their breastfeeding problems and some women were also given conflicting information by health professionals in regards to normal breastfeeding. This left them feeling confused and unsure about what to do. For some women, tongue tie was identified as a something their infants may have had, however they were not given any appropriate information in regards to its treatment or management. This left them feeling even more confused.

### 4.2.4 Symptoms and perseverance

The theme of *Symptoms and perseverance* describes the women's breastfeeding world as they continued to strive to achieve their goal of breastfeeding their infants despite the symptoms

that were manifesting which indicated that they were having difficulties. They believed in the value of breastfeeding and that it was a natural process, so therefore things would improve and they would breastfeed their infants as they had imagined. They continued to struggle as they experienced ongoing breastfeeding difficulties. As Bonny said, "(I) *kinda just stuffed it all up and damaged a little bit of the nipples but they sort healed up pretty well".* The women tried different ways to make breastfeeding work and believed that they would be successful but often this did not happen. Debbie described her frustrations:

> *"It is just not worth all the hassles and all the energy and because it seemed to me that they would be getting better and I would put him on and they would start bleeding or something... Mim [pseudonym] sat down and watched me feed and she commented on the flipping of like his lip was not out enough and whatever and I fed one side with no nipple shield and then I tried to feed this side without the nipple shield and it was too painful to put it on... I have just like found it harder yeah and more like more of a struggle and like if I didn't want to breastfeed I like wouldn't have like wouldn't have because no one was there to help me".(Debbie)*

Some of the mothers experienced cracked and bleeding nipples and pain due to difficulties with breastfeeding. This was due to their infants not latching correctly, their tongue possibly restricted by the tongue tie in the infant's mouth. Despite the pain they kept trying to breastfeed. Sometimes they were unsure if they would be able to continue due to the intense pain they were feeling. The following extract from Kim's interview demonstrates the women's stoicism:

> *"I got very grazed nipples. Still because even though he is attaching well now. It's just not going away... a really bad feed like as I said like sometimes his bottom lip still curls up and you know I grin and bear it so which I shouldn't but um so the next time I'll probably express and feed it to him in a bottle ". (Kim)*

Despite the often intense pain they were experiencing, the woman persevered with breastfeeding. This demonstrates a determination and commitment by the women to breastfeeding. The following interview extract describe the discomfort that the women experienced and their determination to succeed:

"*Um at the beginning when my nipples were really sore I was thinking, I don't know how I'm going to get through this". (Mary)*

*"Before it was like someone sticking, was every time he sucked it was like someone was sticking a pin into my nipple... I think the nipples were so bad I kept trying to feed him but it um, they weren't improving so after days of still struggling, still having pain um and all my family well my mother and Rod [pseudonym] just said, it's not working stop get a rest". (Rosie)*

These mothers believed in the value of breastfeeding and the importance of breast milk and continued trying to be successful despite the problems they were having. As the normal breastfeeding process started to come undone for some of the women, they started to feel anxious when thinking about attempting to breastfeed. Eventually some become quite frustrated by the whole breastfeeding process.

*"The breastfeeding has caused the most angst and frustration, um and then joy at the end of it all too*". (Hilary)

"*The amount of tears I've shed the crying that we've both had sitting there anxious, wound up like I say, it can take up to half an hour to latch get up the courage to put him on and then you almost feel as like- you are shooting through the ceiling". (Kyra)*

These quotes demonstrate how committed the women were to breastfeeding as they continued to persevere, despite the pain and difficulties they were having. Some mothers found that their infants were also becoming frustrated as they tried to latch and breastfeed:

*"He would eventually get quite frustrated because I was struggling to get him on as well... it might take me four times to calm him down and bring him back, and he'd get frustrated, calm him down bring him back". (Hilary)*

*"When she does latch on she feeds, but when she doesn't she gets really frustrated and then I start getting frustrated". (Merri)*

For some mothers, their breastfeeding difficulties were affecting relationships with their partners. For example, Anna described:

*"I mean there's some times I really resented him in going you know you've got to put your breast this way and that cause it's quite easy for*

*him to say 'cause you're not the actual one doing it . You know you've got hot needles going through your nipple and like he just laughs and says, yeah I know I'm really sorry". (Anna)*

Kyra one of the other mothers, had to mentally prepare herself to breastfeed due to the pain she experienced when she latched Adam on to breastfeed: *"Get up the courage to put him on and then you almost feel as like you are shooting through the ceiling"!* Kyra not only had painful breastfeeding due to Adam not latching correctly to the breast, she also developed lumps in her breast and then mastitis, which required medical treatment. She described her perseverance vividly:

*"So, it hasn't been fun but I know that we will get there and I know it is best. It's good for me and good for baby. So. I have the end in sight, I just keep that there, I know it won't hurt. Mentally. We just have to get over this initial start up hump... I'm still having trouble latching properly I think on the right hand side ... went on a course of antibiotics for mastitis. So I did end up with a couple of large lumps so. Um expressed fully for two days". (Kyra)*

Kyra's persistence and commitment to breastfeeding was common. Other mothers also persevered with breastfeeding even when issues were identified. Merri and Anna described how their infants were not latching correctly onto the breast and feeding successfully. This was stressful for both mothers.

*"I'll try and give her a breastfeed but she does get on but it takes us a while, and when she gets on she'll just suckle on it and then it just looks like she's not getting anything or she just, she doesn't seem to settle". (Merri )*

*"His tongue doesn't like you don't see it come out um it's always behind his gum line and also I felt that his tongue hasn't on some of the latches it hasn't been pushed down it's actually been rubbing underneath the nipple and that grates and is painful too". (Anna)*

Rosie described how painful breastfeeding was for her and how the natural process that she had read about was not happening. Tongue tie was eventually identified at the lactation clinic as the cause of her breastfeeding pain.

*"...just sort of felt that yeah this natural process had gone astray it wasn't comfortable, I was in pain, he was hungry it just wasn't as you*

*read in the book... went to the clinic on Tuesday in a mess my sore nipples and probably hungry baby to find out that he had a tongue tie that may have been affecting his feeding... his tongue mustn't have been coming out far enough so it was obviously causing lots of trauma". (Rosie)*

Julie had great difficulties breastfeeding and was unable to latch and breastfeed her son John. She kept trying to latch him to the breast but without success which was very frustrating for her. As she described, *"That he, is frustrated because he can't latch on or wont, I don't know which...I am still trying, but it is just too frustrating. And I can see it in his face, it is really sad".* Julie persevered with trying to breastfeed John but was unsuccessful. John's tongue tie was later identified and treated but by this time, he refused to breastfeed at all. This was very disappointing for Julie:

*"Finally on Monday we got it done, um and he wouldn't even latch on. You know, the doctor said that the best medicine for him to help him heal the cut is to breastfeed and he wouldn't even take...So he has basically had a solid week just about of bottle and he is finding it too hard now to latch on to the breast".(Julie)*

In summary, despite experiencing many difficulties breastfeeding including painful breastfeeding, cracked nipples and breast infections, all the women continue to persevere with breastfeeding believing that it would improve and they would eventually have the breastfeeding relationship with their infants that they imagined that they would have. They were committed to breastfeeding and believed that it was a natural process so therefore with perseverance it would improve.

### 4.2.5 Approaching the wall-it's all too much

The theme of *Approaching the wall-it's all too much* describes the women's world as they arrived at a point where they felt they could not deal with any more breastfeeding difficulties. They could not cope with what had happened in their breastfeeding relationship. They had tried very hard to make breastfeeding work for them. They had persevered despite difficulties with pain when breastfeeding, difficulties latching their infants to the breast, and difficulties getting appropriate advice and support from health professionals. Breastfeeding

had not turned out to be the natural process they had imagined it would be and this became very distressing for them. The following quotes demonstrate how they were feeling.

> *"On Wednesday night – that's when- I just started crying because I just- couldn't take it anymore - was really, really painful before, like it was really painful before but I had just had enough and -like I can't do this anymore and - I will never forget that". (Debbie)*

> *"On the third and fourth day it just got really um overwhelming and yeah and I started to get upset ". (Mary)*

> "*I just couldn't manage; I almost gave up just fully started". (Bonny)*

The women started to feel overwhelmed with all the difficulties they were having and found that they could not manage breastfeeding anymore. As illustrated by Debbie in the following quote, some contemplated giving it up altogether and resorting to formula feeding:

> *"By the Wednesday I was kinda like I can't do this anymore. And then Ross [pseudonym] said OK we'll get some formula the next day...I was starting to feel like a bit over whelmed ". (Debbie)*

Other mothers started to question themselves and asked if this was what they really wanted to do; breastfeeding has been a much more difficult journey than they anticipated it would be. Julie reflected on her self-questioning in her interview: *"very frustrated and I am still very indecisive as is whether or not this is actually what I want to do",* while Kim began to question her ability to cope: "*I started getting a little bit teary at one stage 'cause I was thinking I just don't know whether, I can't keep up with him".*

For all of the women their overriding concern was for the health of their infants. They believed in the value of breastfeeding, however when things started to go wrong and they got to the point where they could take any more, their main concern was still for their infant. This was demonstrated by the following quotes from Merri. This mother had experienced great difficulties breastfeeding and eventually had to resort to bottle feeding.

> *"I was really stressing out. I was just really, really worried that she wasn't feeding... We got her tongue tie snipped and I did breastfeed for a couple of days but she was still like uneasy and I felt like I wasn't giving her much milk so I just gave her the bottle". (Merri)*

All the issues Merri had experienced caused her to feel inadequate as a mother because she was unable to breastfeed as she originally thought she would. She felt that her difficulties with breastfeeding had also interfered with the bonding process between herself and her daughter Casssie. She had been unable to have the breastfeeding relationship with Cassie that she had planned and wanted to have. These feelings, and her sense of failure, are summarised by Merri in the following extracts from her interviews:

> "*My partner was saying that she [Cassie] could feel the stress from me and so I was trying not to stress out... I really wanted to breastfeed her and I thought that might bring us closer... I thought I would be breastfeeding her right until she was six or something... it feels like I've lost that bond with her". (Merri)*

I made a note in my journal after this interview about how disappointed Merri was that she was not able to continue breastfeeding. Despite having some ongoing relationship issues with her partner which would have been causing her some distress, she still expressed her feelings in regards to her breastfeeding failure.

Other women also identified how frustrated they had become with the failure in their breastfeeding relationship. They had reached a point where they felt physically and emotionally drained. They also began to feel inadequate as mothers as they were not able to breastfeed their infants like they had imagined that they would. Breastfeeding was not the natural experience that they had imagined it would be:

> *"At the moment it's the emotional drain. Um it's emotional and mental cause it's taking a lot for me to think about getting him on". (Kyra)*
>
> "*Made me very stressed. Felt inadequate and not being able to feed my baby, stressing". (Rosie)*
>
> *"I just thought breastfeeding should just come naturally for bub and me um but yeah it was just very frustrating, absolutely frustrating 'cause you know he'd get on and then he'd push himself off … it was as a brand new mum and a first time mum and it was just you know it was just feeling like a failure really, like I can't feed my own baby really so um yeah and I still feel like that". (Anna)*

In summary, this theme describes the women's as they reached the point where they were about to 'hit the wall': when they felt that they cannot manage any more breastfeeding difficulties. At this time some questioned whether breastfeeding was really what they wanted

to do and others considered bottle feeding. However, their overriding concern continued to be the health of their infants. Despite their determination to succeed, they had reached a point where they could not face any more breastfeeding difficulties. They and emotionally stressed and had started to feel as though they were failing as mothers.

### 4.2.6 Relief

This theme describes the feeling of relief for some of the women when tongue tie was identified as a probable cause of their breastfeeding difficulties. The realisation that the breastfeeding difficulties they had been experiencing were not due to something they had done wrong was encouraging for many of them. They felt that now that their problem could be fixed, their breastfeeding experience would improve and they would start to enjoy being a mother again. Debbie was very emotional as she described how she felt when tongue tie was identified as the probable cause of all the breastfeeding problems she had been having. Her son Ben had seen a doctor and his tongue tie had been separated. Breastfeeding was already an improved experience for her. She said,

> *"[It was] a relief once I yeah spoke to you yesterday like it's not my fault, like I didn't do anything wrong [tearful]... I think it's like the end of all the drama and you know it's going to get like better and then I will be able to feed and it's not going to hurt... I'm relieved because it is something we can fix... I will be able to feed properly and I am not going to have the pain... we went and got his tongue cut on the Thursday and then pretty much from then everything has been fine... It doesn't hurt, like the way it did before. It doesn't hurt at all now. And it just feels normal... it doesn't yeah feel like he is chomping as much, yeah like. Yeah and it is easier to attach like I find and he actually seems to be a lot more happier.... my nipples have started to heal, they are still a little bit cracked but they are a thousand times better than what they were... Like before it just felt like a really big drama, but now it's just normal... I think we are getting a better bond now because I am not scared of him". (Debbie)*

Relief was a common theme for many of the women. This is summarised in Bonny's simple statement: "*Once you start healing, once you've healed up. I am a new person again*."They were relieved when a cause for their breastfeeding difficulties had been identified. They were also relieved when they discovered that tongue tie could be treated and their breastfeeding difficulties would resolve. They were happy to discover that it was not something they had done wrong and it wasn't their fault. These quotes demonstrate how they were feeling:

> *"You find out what way works for you and how to stop the pain and know what is going on, especially with the tongue tie and that. You sort of in limbo once someone says that to you. Once you work it all out. Yeah, it's blissfully happy yeah". (Bonny)*

> *"When he said yep he was going to do it I was like yes! Something good happened [Laughs]. That's how it felt. You know just sheer relief that I had fought and battled for him to get this done so that he would have a better quality of life and now this one person is going to; it's up to that one person". (Julie)*

> "*Like you know this little dark cloud was over me and now its yeah we're both doing it it's 100% and you know we're both more confident in doing it and its getting more easier and I think too because your nipples aren't as painful as what they were before and so you know your thinking well he wasn't just latching on the wrong spot um so everything is getting a lot better, and it's a lot easier now and it's a better experience too". (Anna)*

> "*It was sort of a relief 'cause then it wasn't there was something else that was causing the problems it wasn't just that we weren't doing it right. Um cause I know I have the milk, I knew that wasn't a problem this time around so it was something didn't feel right". (Kyra)*

Some women identified their frustration that tongue tie had not been identified and treated earlier. They believed that this may have prevented many of the problems that had occurred with their breastfeeding, such as sore cracked nipples and difficulties attaching their infants to the breast. This frustration was described by Debbie:

> *"Like yeah, if someone had picked it up earlier I think and because then it wouldn't have been so painful and horrible and oh yeah, and I wouldn't have had, like I was going to quit, like I was going to stop*

*breastfeeding and like then I felt bad about feeling like I was just giving up and like just not just giving it a proper go and I wouldn't have had to go through all those emotions and feelings". (Debbie)*

Julie and Anna felt similarly:

*"We are both firm believers that if his tongue tie had been done at the time of birth we would not be doing bottle feeding, and I would not be going through a tin of formula in a week ". (Julie)*

*"I think if somebody had actually spotted it a lot earlier it would have saved a lot of anxiety and a lot of frustration ". (Anna)*

Most of the women described the relief they felt when breastfeeding became less painful for them after their infant's tongue tie had been separated, as illustrated by the following quotes:

"*as soon as we had it done they, they did it, brought him in and said give him a quick feed. It was almost instant relief because he could attach so well afterwards". (Kim)*

*"I can feed without pins and needles and the anxiety within myself". (Rosie)*

"*The lactation nurse actually spotted his tongue tie and oh gosh so we basically she got us an appointment straight away and we went down and got it done and he has been a different kid and that and just latching on which has been fantastic". (Anna)*

Rosie described in detail how improved her breastfeeding experience was after her son Charles has had his tongue tie cut:

*"I think he has been more comfortable feeding on that since the tongue tie has been snipped... It's taken a while to get my nipples corrected now it is comfortable feeding two weeks after he was born... There's no, there's no, no splitting or bleeding or cracks or anything and I don't dread having to feed him anymore... improved probably 200% compared to what it was when we came home". (Rosie)*

These comments are similar to another mother, Anna who described how she was really enjoying breastfeeding since the tongue tie had been cut. Breastfeeding was a rewarding experience for her now. Anna had not planned to breastfeed for more than a few days but had

completely changed her mind since Allan had been born and was now passionate about breastfeeding:

> *"It's honestly like having a different kid. I just can't believe it... so no it it's a fantastic, better experience that's for sure... So you know it's quite rewarding. And especially going from being adamant that I wasn't going to breastfeed to I"ll do anything I can to right this... I've been more relaxed about it too not as stressing out when it was hurting. Stressing out that he was going to have a feed... you know like there is a big difference and like I think too um now um when you feel him breastfeeding he's got a lot stronger suck and you can actually feel the nipple going in his mouth not just playing around with it... It's just our bonding session and it's good that way and I know that I'm yeah producing something for him too". (Anna)*

The following quote from my diary illustrates how Anna was feeling, *"Anna was very much enjoying her breastfeeding experience with Allan".*

The theme of relief describes the world of the women when tongue tie is identified, treated and breastfeeding starts to improve. They are relieved that a reason for their breastfeeding problems has been identified and in most cases this problem is able to be fixed. They are also relieved when breastfeeding starts to be the enjoyable experience that they had hoped it would be. For some women however, there is disappointment that tongue tie was not identified earlier so that treatment can be undertaken. This is especially significant for those mothers who have had to stop breastfeeding due to the problems they were having breastfeeding and start bottle feeding their infants. They do not end up having the breastfeeding experience they had imagined they would have when they were pregnant.

### 4.2.7 Summary of findings

This chapter describes a journey. It starts during the pregnancy when the women think about what it will be like when their babies are born. They plan to breastfeed and imagine what it will be like to do this. They base these thoughts on what they have learnt from friends who have babies and from what they have read or heard about in the media. When their babies are born and they start to have breastfeeding problems, they remain determined to succeed,

expecting to be successful, showing persistence in spite of ongoing non resolving breastfeeding difficulties.

As their breastfeeding problems continue, all of the women start to ask questions, seeking help from health professionals, because they believe in breastfeeding and want to be successful at it. They realise that something is wrong but persist, often with breastfeeding becoming more difficult. For some of the women it becomes too hard to continue and they give up breastfeeding. This leaves them feeling full of guilt and self blame. The remaining women persist with breastfeeding despite ongoing problems with many on the verge of giving up.

There is great relief when tongue tie is identified and treated. This leads to an improvement in breastfeeding for many of the women and they start to enjoy being a mother again.

At the commencement of the research I did not anticipate the information gathered would develop into themes which were in the form of a journey. However, as has been demonstrated, this is the rationale for presenting them in this way. Chapter Five will present a discussion of the findings from the research linked with implications for future practice by health professionals in this field.

# CHAPTER FIVE

## DISCUSSION

## 5.0 Introduction

This chapter discusses the findings from the research and presents implications for future practice by health professionals. This study has revealed what it is like to breastfeed an infant with tongue tie. It reveals a journey as discussed in the previous *Findings* chapter that includes the phases of Expectations; Something is wrong; Questioning seeking advice, no real answers; Symptoms and perseverance; Approaching the Wall-It's All too much and Relief. From this 'journey' some key points for discussion have been identified.

## 5.1 Missing of diagnosis

One of the key findings in this study was that tongue tie was not always being identified in hospital by medical and nursing personnel. If it was identified, then it was not linked to any breastfeeding difficulties. Four of the ten women in this research study stated that tongue tie was not identified whilst they were in hospital despite them having breastfeeding problems. Another four women were told that their infants may have a tongue tie but were not told what this was and what affect it may have on breastfeeding. One of the women, who had sore and cracked nipples and difficulties latching her infant to the breast, was told by her paediatrician not to have the tongue tie separated even if she was advised to. The other two women who were under the care of their own midwives (midwifery group practice), stated that their midwife thought that their infant may have a tongue tie, so sent the mothers to Lactation Clinic for further assessment of this by a Lactation Consultant. In summary this research study has provided evidence to suggest that tongue tie was not usually identified as something that may cause breastfeeding difficulties. One way that diagnosis of tongue tie may be improved is if a more vigorous assessment of the infant was attended at birth including assessment and identification of tongue tie if present. Further education of health professionals may be required in order to inform them of the potential difficulties that a mother may experience breastfeeding an infant with tongue tie.

If tongue tie was assessed at birth then mothers could be given immediate advice and support, and many breastfeeding problems could be prevented. Although newborn assessments are attended routinely in all hospitals in Australia after birth, assessment for tongue tie is not done routinely. In Queensland the newborn assessment or examination of the newborn after birth

includes a detailed examination of the infant from head to toe including eliciting of reflexes (Queensland Health, 2009). The tongue is listed as something to assess as part of the examination of the mouth, but there is no mention of tongue tie as something to be noted as a potential problem (Queensland Health, 2009). The International Affiliation of Tongue-tie Professionals recommends screening of all infants for tongue tie shortly after birth, with a more thorough assessment of those infants who have been identified as having tongue tie as soon as is reasonable in order to help prevent the development of breastfeeding problems (International Affiliation of Tongue-tie Professionals, 2011). In a recent UK prospective study which examined tongue tie and breastfeeding difficulties, researchers suggested at the conclusion of their study that assessment for tongue tie be integrated routinely into all neonatal checks, with immediate referral for tongue tie separation if initial management of breastfeeding difficulties has been unsuccessful (Miranda & Milroy, 2010). The researchers contacted the families who participated in the research two weeks after tongue tie separation was undertaken and found that sixty three percent of mothers reported an improvement in breastfeeding, with 100% reporting an improvement in nipple symptoms such as pain, bleeding and damage, and all infants had gained weight which is significant (Miranda & Milroy, 2010).

Based on the breastfeeding problems the women in my research study experienced due to tongue tie, it is clear that some of these could be avoided if a more thorough assessment was undertaken at birth. With the incidence of tongue tie between 2.8% to 10.7% of all infants (Ballard et al., 2002; Hogan et al., 2005; Messner et al., 2000; Ricke et al., 2005; Ridgers et al., 2009), it would be beneficial if examination for tongue tie was included routinely in all neonatal new born examinations so that any mothers having breastfeeding difficulties, could be referred immediately for further support with a Lactation Consultant. Management of the tongue tie including separation could be undertaken if required. The International Affiliation of Tongue-tie Professionals recommends that any infants identified with a tongue tie, be assessed and treated promptly no matter what method of feeding (International Affiliation of Tongue-tie Professionals, 2011).

This research study identified that there are differences of opinion in regards to the management of tongue tie, and this may be why some hospitals do not have guidelines for its management. This is not an unusual finding. Research undertaken previously has also identified and examined these differences. One large survey undertaken by Messner and Lalakea (2000), which examined the beliefs, management and treatment of tongue tie amongst health professionals, found that there were differences of opinion in regards to its

management and treatment. This is supported by Finigan (2009), who commented about the resistance she experienced to the development of a new tongue tie management service in her health service area in the UK.

The Royal Women's Hospital in Melbourne provides a service for the separation of tongue tie in infants (The Royal Women's Hospital Melbourne, 2006). Any infants experiencing breastfeeding difficulties can be referred to the service for assessment with the separation undertaken by a Lactation Consultant who has been trained and credentialed in the procedure (The Royal Women's Hospital Melbourne, 2006). This service would be ideal in all major teaching hospitals so that any women who have infants with tongue tie could be assessed and treated before any breastfeeding problems develop further and mothers stop breastfeeding. This would help increase the duration of breastfeeding for these women. Researchers undertook a review of this service in 2002 to 2003 (Amir et al., 2005). Results from a structured telephone interview conducted 3 months after the infant was assessed in the clinic, found that the parents were very satisfied with the frenotomy procedure and no complications were identified afterwards (Amir et al., 2005).

As identified in the literature review, Section 2.6, separation of tongue tie has been shown to be a safe procedure. The study by Amir et al. (2005) provides evidence to support the introduction of a tongue tie separation service into all major teaching hospitals where a lactation service is offered, so that tongue tie separation could be offered if needed prior to discharge. This would help reduce the likelihood of the mother developing breastfeeding problems associated with their infant having a tongue tie.

In order for breastfeeding to be successful any problems the mother may be experiencing need to be identified early. The women in this study stated that they were having problems including poor infant latch to the breast and pain when breastfeeding but were not given appropriate advice and support to help them with these problems. Under normal circumstances if an infant is correctly attached to the breast there should be no pain when breastfeeding. If there is pain, this should be investigated. Tongue tie was not identified as a possible cause of the problems. This is significant when considering prior research in this area. A prospective cohort research study undertaken in Brazil examining factors associated with an early cessation of exclusive breastfeeding in the first 6 months, found that the quality of the infant's latch to the breast impacted on the duration of breastfeeding (Cordova do Espirito Santo, Dias de Oliveira, & Regina Justo Guigliani, 2007). A poor latch was associated with an increased risk of a reduced length of exclusive breastfeeding. An Australian study which examined the breastfeeding practices of a group of women living in

Victoria, found that inappropriate advice in regards to the management of breastfeeding and conflicting advice impacted on women's ability to establish breastfeeding (James, 2004). Further Australian research undertaken in 2006 in the form of a cohort study, which examined the factors associated with full duration of breastfeeding at 6 months and any breastfeeding duration at 12 months, found that women who experienced breastfeeding difficulties in the first four weeks were more likely to stop fully breastfeeding before 6 months (Scott et al., 2006). Therefore, mothers' who are breastfeeding and are having difficulties need appropriate support and advice or they are likely to stop breastfeeding. This is confirmed by this research study. Two of the mothers stopped breastfeeding because they did not receive appropriate advice and prompt management of their infant's tongue tie, and due to the difficulties they experienced. One of the mothers stated that she was certain that she would be still breastfeeding if the tongue tie had been separated shortly after birth.

From this research study it is evident that tongue tie is not recognised by some health care professionals as a potential problem for women who are breastfeeding. It is recommended therefore, that any woman who is experiencing breastfeeding problems be referred to a Lactation Consultant for further support. Assessment of tongue tie can then be undertaken and appropriate support and advice given to the mother if required. If assessment for tongue tie is performed routinely, it may be beneficial to use a standardised assessment tool. There are tools available to assess whether an infant may need a frenotomy in order to improve breastfeeding.

Several tools have been reported in the literature, of these the Hazelbaker Assessment Tool for Lingual Frenulum Function (HATLFF) (Appendix V) is the most common. This tool was developed by Alison Hazelbaker to use on all babies not just those who are suspected of having tongue tie (Hazelbaker, 1993). This tool enables the user to give a quantitative assessment of the tongue tie and assist them when they are deciding whether to recommend frenotomy for the infant (Amir, James, & Donath, 2006). The tool assesses function items such as tongue lateralization, lift, spread, cupping, peristalsis and snap-back, which assesses elasticity of the frenulum (Hazelbaker, 1993). The tool also examines appearance items such as tongue appearance, elasticity of the frenulum, length of the frenulum when the tongue is lifted and attachment of the frenulum to the tongue and inferior alveolar ridge (lower gum line)(Hazelbaker, 1993). A score is given for each part of the tool and this guides the user when deciding if frenotomy is required for the infant (Hazelbaker, 1993).

A few researchers have examined this tool and its effectiveness. Researchers in Melbourne undertook a study in order to assess the inter-rater reliability of the HATLFF (Amir et al.,

2006). Fifty eight infants with tongue tie were recruited as well as 25 control infants. The study found a 96% agreement between assessors using the tool on recommendation for frenotomy and a high degree of agreement in the appearance section of the tool. However, the two assessors demonstrated a lack of agreement when assessing infant sucking. This study demonstrates that this tool is not totally reliable when assessing the impact of tongue tie on breastfeeding, because assessment of function cannot be accurately assessed (Amir et al., 2006). Further assessment of the inter-rater reliability of the HATLFF in other research studies needs to be attended before the tool can be implemented into practice.

A case-control design study was undertaken by researchers in Minnesota to determine three things about tongue tie (Ricke et al., 2005). Firstly, whether breastfed infants with tongue tie had reduced breastfeeding rates at 1 week and 1 month of age; secondly, to determine the incidence of tongue tie; and thirdly, to assess how useful the HATFLFF was determining the severity of tongue tie. The researchers found that infants who had tongue tie were three times more likely to be bottle fed at 1 week of age then control infants but they were just as likely to be breastfeeding at 3 months as control infants. They also found that the function of the infant's tongue not the appearance most affected breastfeeding, and that the scoring system of the HATLFF excluded 63% of the infants in the study. Therefore, the researchers did not find the HATLFF tool useful when assessing tongue tie or when determining which infants would have feeding difficulties (Ricke et al., 2005).

The same researchers used the HATLFF tool to assess for tongue tie by oral examination in a Prospective Case Series of infants admitted to a normal newborn nursery in Minnesota in the USA (Madlon-Kay et al., 2006). Of the 143 infants fully assessed using the HATLFF, 40 received perfect scores (function score of 14, regardless of appearance score), 5 received "acceptable" scores (function score of 11, if appearance score is 10), while 19 received "function impaired" scores (function score less than 11). A major limitation of the HATLFF tool determined by this study is that it did not classify the scores of the remaining 55% (n=79) of the infants, as they did not fit within the three categories of scores. This is similar to their findings in their previous study (Ricke et al., 2005). This study demonstrates that this tool cannot be considered a reliable way to assess whether tongue function is affected by tongue tie and whether intervention is required for feeding difficulties caused by tongue tie. It confirms the previous research conclusion that more assessment of this tool is required in further research studies.

In summary, these studies did not find the HATLFF useful when assessing tongue tie or its possible effect on breastfeeding. However, use of such a tool would at least provide a

structured assessment and remind nurse and midwives to assess for tongue tie at birth and when there are any signs of breastfeeding difficulties. The Frenotomy Decision Rule for Breastfeeding Infants (Appendix VI) is a new tool which has not been utilised and confirmed as an appropriate assessment tool in other studies. It was developed in order to provide users with an easy way to identify whether infants may need frenotomy for breastfeeding problems due to tongue tie (Srinivasan, Dobrich, Mitnick, & Feldman, 2006).

This tool was examined in a small Canadian study where the researchers aimed to measure the effectiveness of frenotomy in infants with tongue tie (Srinivasan et al., 2006).The researchers also wanted to measure the change in latch and maternal pain using standardised tools and assess whether frenotomy prevented premature weaning. Infants selected for the study were assessed using the Frenotomy Decision Rule for Breastfeeding Infants (Appendix VI). The infant's latch was assessed using the LATCH Tool (Appendix VII) which is a numerical assessment tool designed to score components of breastfeeding including latch, audible swallowing, type of nipple, comfort and positioning (Riordan, Bibb, Miller, & Rawlins, 2001). The mother's pain while breastfeeding was assessed using a Short-Form McGill Pain Questionnaire (Appendix VIII). All women were contacted 3 months after the frenotomy and had decreased nipple pain. Out of the 27 women in the study, 25 answered the 3 month telephone questionnaire. The researchers found that 21 out of 27 were still breastfeeding, 23 out of 25 were pain free and 22 out of 25 stated that they felt the frenotomy had helped (Srinivasan et al., 2006). This small study utilised the Frenotomy Decision Rule for breastfeeding Infants and found that frenotomy was effective in reducing and eliminating pain experienced by mothers during breastfeeding, whose infants have tongue tie. Further evaluation of this tool is required in order to examine whether it is useful in when predicting which infants need frenotomy for tongue tie.

Therefore, it would be beneficial if all hospitals introduced an assessment and treatment process for the management of infants who have tongue tie, including use of an assessment tool if required. Breastfeeding difficulties should not be seen as a normal process for women whose infants have tongue tie.

## 5.2 Breastfeeding knowledge

One of the findings from this research study was that women were given conflicting information by health professionals in regards to management of their infant's tongue tie. This is part of a larger problem where women are given conflicting advice in regards to breastfeeding. This made them feel confused and unsure about how they should be breastfeeding their infants. There has been previous research undertaken which has identified conflicting information given by health professionals as an issue for breastfeeding mothers. An Australian quasi-experimental study examining first time mothers views about breastfeeding, found that women became very frustrated with all the conflicting advice they received about breastfeeding and this undermined their confidence (Hall & Hauck, 2007). This study confirms the findings of a previous qualitative research study whose purpose was to look at inconsistent breastfeeding advice (Simmons, 2002). This study found that conflicting advice made women feel disempowered and impacted on their ability to breastfeed (Simmons, 2002). Other studies have identified that conflicting advice between nurses and medical officers was very unsupportive and a common problem, often influencing how they felt about their breast milk (Dykes & Williams, 1999; Hong, Callister, & Schwartz, 2003; Tennant, Wallace, & Law, 2006).

Conflicting advice may be linked to health professional's knowledge of breastfeeding. Qualitative research undertaken previously which has examined first time mothers' view of breastfeeding support from nurses, found that mothers did recognise that some nurses had limited knowledge about breastfeeding practices (Hong et al.,2003).Therefore, these nurse were unable to help them with any issues or problems which caused the mothers to become anxious and frustrated (Hong et al., 2003). This is supported by the findings in this research. The women stated that when they were having breastfeeding problems they were given incorrect, inappropriate advice or no advice at all. Health professionals did not always examine their infants for tongue tie and identify it as a cause of their breastfeeding problems. This is important because it highlights health professionals' lack of knowledge in regards to breastfeeding and tongue tie and what impact this can have on mothers who are attempting to establish breastfeeding.

Another concerning factor identified in this study was that women were assured that it was normal to have breastfeeding problems such as sore and cracked nipples, as well as difficulties latching their infant to the breast. The women's stories paint a picture of health

professionals' lack of knowledge about breastfeeding and tongue tie. It has been known for some time that health professionals have varying levels of knowledge about breastfeeding. Breastfeeding may be unsuccessful if women are given inaccurate information by health professionals and this has been confirmed by previous research. Australian research undertaken in the form of a postnatal questionnaire has investigated midwives knowledge of breastfeeding (Cantrill, Creedy, & Cooke, 2003). The researchers concluded from their findings that the variation of knowledge amongst midwives may contribute to breastfeeding mothers receiving conflicting advice and it was essential for them to have more than a basic knowledge of breastfeeding in order to support women who want to breastfeed (Cantrill et al., 2003).

## 5.3 Support of breastfeeding

The women in this research attended a community Lactation Clinic where they were seen by a Lactation Consultant for support with their breastfeeding problems and management of their infant's tongue tie. Certification for an International Board Certified Lactation Consultant (IBCLC) occurs after the IBCLC obtains extensive clinical experience helping mothers with breastfeeding, as well as educational certification which is ongoing and the passing of an international exam (International Board of Lactation Consultant Examiners, 2011). If the mothers in this research had received this support while they were in hospital, many of the breastfeeding problems they had may have been prevented, and they would have received more immediate and appropriate advice for management of their infant's tongue tie. Researchers in the US undertook a cross-sectional design study to compare breastfeeding rates among women who had given birth at hospitals that employ and do not employ lactation consultants (Castrucci, Hoover, Lim, & Maus, 2006). They found a positive relationship between breastfeeding at discharge and having an IBCLC employed with women being twice as likely to be breastfeeding at discharge (Castrucci et al., 2006). More recent research has examined the qualifications of an IBCLC and also to determine if there was evidence to have them utilised in an outpatient setting (Thurman & Allen, 2008). The researchers undertook a literature review of only five studies as these met their inclusion criteria, and found a positive association between IBCLC use and increased breastfeeding duration (Thurman & Allen, 2008). Employment of IBCLCs in primary care settings has therefore been shown to

increase breastfeeding duration as skilled practitioners are available to help mothers with breastfeeding issues.

If maternity hospitals do not employ IBCLCs, it is important that the staff who support women in the antenatal period through to the postpartum period maintain their clinical competencies and knowledge with breastfeeding so that they can provide appropriate support for women who want to breastfeed (Cantrill et al., 2003). Previous research has shown that a three day training program for maternity ward professionals can increase duration of breastfeeding (Vittoz, Labarere, Castell, Durand, & Pons, 2004). Researchers in France undertook a before-and-after study, utilising two retrospective random samples to determine if a three day training program for maternity ward professionals increased breastfeeding duration (Vittoz et al., 2004). They found that the intensive three day training program improved breastfeeding supportive practices and there was a moderate improvement in the average duration of any breastfeeding (Vittoz et al., 2004). The study highlights the importance of breastfeeding education for staff caring for women who have given birth.

A prospective cohort research study conducted in the US has also examined health professional support and psychosocial risk factors associated with continuation of breastfeeding at 12 weeks postpartum (Taveras et al., 2003). The researchers found that mothers who stated that they received support and encouragement to continue breastfeeding were more likely to be still breastfeeding at 12 weeks (Taveras et al., 2003). This was confirmed by a systematic review whose purpose was to describe how breastfeeding was supported during pregnancy, post birth and after discharge (Hannula, Kaunonen, & Tarkka, 2008). The researchers concluded that interventions to promote breastfeeding over an extended period from the antenatal period through to the post partum period were effective in supporting breastfeeding, and support by health professionals has a great effect on breastfeeding success (Hannula et al., 2008). These researchers stated that hospital practices and policies also have an effect on women's breastfeeding success (Hannula et al., 2008). This is confirming what researchers have found previously. Researchers in Canada used Pregnancy Risk Assessment Monitoring System data to determine breastfeeding rates for 9 hospitals over a 12 month period (Murray, Ricketts, & Dellaport, 2007). The researchers found that if hospitals had supportive breastfeeding practices, mothers were less likely to stop breastfeeding (Murray et al., 2007). They concluded that all hospitals should implement strategies to maintain a culture which implements strategies to support breastfeeding (Murray et al., 2007). Women need to be given evidence based information which informs them about the normal processes of breastfeeding and lactation and prepares them for managing at home.

This research study has identified that many health professionals have not received adequate training and education in lactation and breastfeeding including management of tongue tie. It is therefore suggested that all health professionals be given regular training and education in order for them to provide appropriate, evidence based support for women with breastfeeding in the immediate postpartum period. This would include the management of normal breastfeeding as well as how to manage breastfeeding issues such as tongue tie.

## 5.4 Perseverance

The women in this study all believed in the importance of breastfeeding and the value of breast milk. All persevered and tried to make breastfeeding successful asking for support and advice from health professionals. They continued persevering despite experiencing problems such as difficulties latching their infants to the breast, painful, cracked and bleeding nipples and reduced breast milk supply. Out of the group of ten women in the study, two ceased breastfeeding due to the difficulties they had been having with breastfeeding their infants with tongue tie.

Previous research has examined why women persevere with breastfeeding. Australian researchers examined data from three arms of a randomised controlled trial which were merged and evaluated to determine the factors associated with breastfeeding at 6 months postpartum (Forster, McLachlan, & Lumley, 2006). The researchers found that a very strong intent to breastfeed was one of the factors associated with breastfeeding (Forster et al.,2006).

This was supported by another Australian prospective survey-based design study which was used as part of the final phase of a triangulated, mixed method research program, which identified women's psychological characteristics which were linked to breastfeeding duration (O'Brien, Buikstra, & Hegney, 2008). They found that women who believed in the value of breast milk and planned to breastfeed for a period of time were factors linked to breastfeeding duration as well as breastfeeding self efficacy (O'Brien et al., 2008). Another group of researchers undertook a retrospective case-controlled study which investigated why some women who had experienced extraordinary breastfeeding problems continued to breastfeed (Hegney et al., 2008). The researchers identified that these women who persevered with breastfeeding possessed qualities and coping strategies which helped them overcome their difficulties (Hegney et al., 2008). These women also identified that support from health professionals as being a key factor in their continuation of breastfeeding (Hegney et al.,

2008). All the women in the study identified that they experienced some psychological distress due to their breastfeeding difficulties (Hegney et al., 2008).

The women in this research study all wanted to breastfeed. They believed in the value of breastfeeding and breast milk and despite having breastfeeding problems, persevered with breastfeeding as they wanted to be successful. It is important therefore, for health professionals caring for women in the postpartum period to be trained and regularly updated in breastfeeding knowledge and practices, including education about tongue tie and its potential impact on breastfeeding. Any woman seeking help and advice from a health professional because of persistent ongoing breastfeeding problems, should expect that the health professional who is providing the support to undertake a thorough history and assessment which would include checking their infant's mouth for tongue tie.

Despite ongoing breastfeeding problems, only a few of the women in this study noted that health professionals checked in their infants' mouths for tongue tie. For those women who had tongue tie identified, no information or advice in relation to potential breastfeeding difficulties was given to them. The two women who were under the care of their own midwives were discharged within 24 hours from hospital and sent to Lactation Clinic for further support because of their breastfeeding issues which was good management. The women in this study did not identify that there were any clear guidelines for the management and treatment of tongue tie in the hospitals where they birthed their infants. Neither the American College of Paediatricians nor The Royal Australasian College of Physicians: Paediatrics and Child Health has a published position statement on tongue tie and its management. There are guidelines available for the management of tongue tie. The National Institute for Health and Clinical Excellence published guidelines for division of tongue tie in 2005 (National Institute for Clinical Excellence, 2005). This guideline for undertaking the procedure, acknowledges that the small amount of evidence available does suggest it is a safe procedure and can improve breastfeeding outcomes (National Institute for Clinical Excellence, 2005).

## 5.5 Conclusion

This research study has highlighted some significant issues. Tongue tie is not being identified by health professionals as a possible cause of breastfeeding difficulties. Many health professionals lack knowledge about normal breastfeeding and common breastfeeding issues including those caused by tongue tie. This means that they are unable to provide appropriate

support for women who are breastfeeding and are unable to provide appropriate support when these women have breastfeeding problems. This lack of knowledge can lead to women receiving conflicting information about management of breastfeeding and any difficulties that they may experience. Many women are very informed about the benefits of breastfeeding and breast milk and have a strong desire to breastfeed. However, they may not be successful if they do not receive appropriate advice and support. Chapter Six will summarise the most significant findings that this study has generated including implications for clinical practice and recommendations for further research.

# CHAPTER SIX

## CONCLUSIONS

## 6.0 Introduction

In conclusion, this research study has revealed new information about what it is like to breastfeed an infant with tongue tie. The women in this research study identified that many people including health professionals possess a lack of knowledge about tongue tie and its implications in regards to breastfeeding. This lack of knowledge also includes limited knowledge in regards to normal breastfeeding practices. This chapter will summarise the most significant findings that this study has generated including implications for clinical practice and recommendations for further research.

## 6.1 Knowledge generated from this study

Prior to this study there had been no qualitative research undertaken which has examined the impact of tongue tie on the breastfeeding experiences of women in the immediate post-partum period. Previous research has primarily concentrated on examining interventions related to tongue tie and breastfeeding. This study has explored what it is like to breastfeed an infant with tongue tie. Despite the women in this research study being committed to breastfeeding because of its health benefits, they found that breastfeeding an infant with tongue tie was a harrowing journey with many frustrations along the way. Breastfeeding did not always transpire to be the natural experience that they had anticipated.

The women in this study identified that there were many challenges breastfeeding an infant with tongue tie. It became evident that many people including health professionals had limited knowledge surrounding tongue tie and its potential effect on breastfeeding. This lack of knowledge had a significant impact on the women in this study who were breastfeeding as they did not receive appropriate advice in regards to the breastfeeding difficulties that they were experiencing. This is part of a wider problem where the women found that many health professionals had limited knowledge about normal breastfeeding and this often led to the women receiving conflicting advice about breastfeeding and how to manage the difficulties that they were experiencing.

The absence of a universal diagnostic and assessment tool for infants with tongue tie was also identified as a significant issue in the research. Implementation of an appropriate diagnostic and assessment tool for tongue tie into all hospitals would help reduce the incidence of

breastfeeding difficulties that the women in this research study described. The women found that tongue tie was not identified when their infants were born. If it was identified then it was not identified as something that may be a potential problem when breastfeeding. Early identification and prompt management of tongue tie would contribute to increasing breastfeeding rates which currently are below government targets (Queensland Health, 2003; Queensland Government, 2009). Introduction of a tongue tie assessment and management service into all hospitals which provide lactation services would mean that separation of tongue tie could be undertaken prior to the mother and baby being discharged home. This would help prevent occurrence of the breastfeeding difficulties that are associated with tongue tie and breastfeeding.

Despite the women in this study experiencing many difficulties breastfeeding an infant with tongue tie, they persevered because they believed in the value and importance of breastfeeding. Their strong desire to breastfeed their infants inspired them to persevere despite the difficulties which they experienced and demonstrated how important they believed breastfeeding and breast milk to be for their infants.

## 6.2 Significance of the findings for nursing

As a result of this research study, there have been subsequent clinical practice implications that have been identified. These key implications would have an effect on local hospital practices with this flowing on to community child health centres.

### 6.2.1 Implications for practice

Firstly, this study identified that there was no universal diagnostic and assessment tool for infants with tongue tie currently being incorporated into clinical practice where the women in this research study birthed their infants. If tongue tie was identified, there was no management or treatment process available for women to access immediately after their infants were born. Identification of an appropriate diagnostic tool and implementation of this into all hospitals would help prevent some of the breastfeeding difficulties that the women in this research study experienced. Introduction of a service where tongue tie could be separated

while the infant was in hospital would also help reduce breastfeeding problems as prompt management of tongue tie could be undertaken.

This study suggested that many health professionals had limited knowledge of tongue tie and its potential impact on breastfeeding. The women identified that they received conflicting and incorrect advice in relation to their breastfeeding. This is part of a larger problem where it was identified that some health professionals have limited knowledge about normal post partum breastfeeding practices. This can lead to mothers receiving conflicting advice. Ongoing education of health professionals about normal breastfeeding processes would help reduce the amount of conflicting information that women receive. This should be mandatory and ongoing for health professionals who provide support for women in the immediate postpartum period. Baseline breastfeeding knowledge in the core education curriculum of all undergraduate health professional programs would provide a good basis for health professionals. This could then lead to health professionals choosing to undertake further study in order to gain advanced knowledge and practice that may lead to certification as a lactation consultant. This could lead to increased employment for lactation consultants. Until ordinary problems are recognised by health professionals there is very little scope for referral with specialised problems to a lactation consultant.

The women in this research attended the community child health lactation clinic and received confirmation of their infant's tongue tie with ongoing support of their breastfeeding difficulties. Employment of lactation consultants who have specialised breastfeeding knowledge within a maternity unit would provide women with skilled health professionals who would be able or provide more specialised support for the more complex breastfeeding issues including those which can occur as a result of breastfeeding an infant with tongue tie.

### 6.2.2 Implications for further research

The findings from this study also have implications for further research. Evaluation and assessment of an appropriate assessment tool for identification of tongue tie needs to be undertaken in order to provide strong evidence of an effective way to assess tongue tie and provide guidance for health professionals. Additional research into the impact of tongue tie on breastfeeding would contribute to the body of knowledge in this area.

Further research which evaluates the effect of health professionals' knowledge of breastfeeding and its impact on breastfeeding rates would provide evidence to support

mandatory minimum education standards for health professionals working with women in the postnatal ward and community child health services.

Additional research which evaluates the impact of employing a lactation consultant within a maternity unit and within community services would provide further evidence to support increased employment of lactation consultants in these areas.

## 6.3 Study limitations

This research study makes an important contribution to the understanding of what it is like for a woman to breastfeed an infant with tongue tie. The purpose of the study was to describe the breastfeeding experiences of women who have an infant with tongue tie and this was achieved. As this study utilised a qualitative research methodology the findings are difficult to generalise and replicate. Data collection was based on maternal recall of events. Further qualitative research into the effects of tongue tie and breastfeeding would lend more support to the findings in this study. The nature of hermeneutic phenomenology research means that the research findings are based on interpretation. Other hermeneutic phenomenological studies may identify other findings, as every interpretation is different and multiple realities can be found within this methodology. The results from this health service district may also not be replicated if the same research was undertaken elsewhere. Nonetheless, it is anticipated that some similarity of findings would occur across setting, since the impact of tongue tie on breastfeeding is recognised by research evidence.

My status as a novice researcher is another study limitation. A more experienced researcher may have drawn different conclusions from the research study. My experience and knowledge as a lactation consultant will have helped shape my interpretations of the findings, though I endeavoured to remain impartial during the interviews. My primary aim was to elicit enough information in order to describe what it was like to breastfeed an infant with tongue tie and I believe that I achieved this.

## 6.4 Conclusion

This study has explored what it is like to breastfeed an infant with tongue tie. Despite women in this research study being committed to breast feeding, they found that having an infant with

tongue tie did not always transpire to be the natural experience that they had anticipated. This study found that many people including health professionals have limited knowledge surrounding tongue tie and its potential effect on breastfeeding. This lack of knowledge had a significant impact on the women in this study as they did not receive appropriate advice in regards to the breastfeeding difficulties that they were experiencing. Early identification and prompt and appropriate management of tongue tie would contribute to increasing breastfeeding rates, which currently are below government targets.

**APPENDIX i: Ethics approval Queensland Health**

**MEMORANDUM**

# West Moreton South Burnett

# Health Service District

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**To:**

Mrs Janet Edmunds

Child Health

23 Barklya Crescent

Sinnamon Park, QLD 4073


**From:** Jacqueline Robinson

Ethics Officer WMSBHSD HREC

The Park – Centre for Mental Health

WACOL 4076

**Contact No:** (07) 3271 8656

**Email**: WMHSD_ethics@health.qld.gov.au


**Subject:** **A qualitative analysis of the experiences of mothers who are breastfeeding an infant with tongue tie (46-08) Janet Edmunds, IH**

**Approval number: 46/08**

The WMSBHSD HREC has recommended approval & the District Medical Superintendent has given formal approval for your study to commence.

Please also make sure that the correct contact details of the WMSBHSD HREC office is made available to your participants.

## IMMEDIATE NOTIFICATION

As a condition of approval, the Committee requires investigators to promptly report to the Ethics Officer anything which might affect ethical acceptance of the study, including:

Proposed changes in the protocol.

Unforeseen events that might affect continued ethical acceptability of the study e.g. adverse effects on participants.

Any complaints or expressions of concern made in relation to the study.

You are also required to notify the Committee on completion or cessation of the study.

## DATA COLLECTION

When conducting research within District facilities:

You are required to have this letter in your possession, as it is validation of research approval.

An ID needs to be worn;

The first point of contact on commencing research is the senior clinical staff person in the facility area.

## MONITORING and REVIEW

An NHMRC requirement[1] is that ethics committees monitor approved research:

Every 12 months after initial approval you are required to complete and return an annual report form to maintain your approval status. The form may be found at the following URL address:
http://www.health.qld.gov.au/cpic/documents/ethics/annual_report_form.pdf
http://www.health.qld.gov.au/cpic/documents/ethics/annual_report_form.pdf

A report is required on completion of your research, this may take the form of a brief summary of findings or a paper submitted for publication. The form to accompany your completed report may be found at the following URL address: http://www.health.qld.gov.au/cpic/documents/ethics/final_report_form.pdf

The ethics committee may choose to conduct an interim audit of your research.

If the results of your project are to be published, please ensure that a copy of any publication or thesis is forwarded to the West Moreton Health Library for future reference.

You are required to sign this approval (keep a copy for your files) stating that you will follow all the conditions listed and return the form to the Ethics Officer, Human Research Ethics Committee, The Park – Centre for Mental Health.

[1] Please refer to your NEAF form section 9.3 Signatures and Undertakings

We wish you every success in your work.

*Jacquie Robinson, RN, BAA LLM*

Jacquie Robinson, RN BAA LLM

Ethics Officer WMSBHSD

Human Research Ethics Committee

18th August, 2008

**Acceptance of Conditions of Approval**

I _____acknowledge receipt of approval to undertake the above-mentioned study and agree to meet all of the above conditions.

| _____ | _____ | _____ |
|---|---|---|
| Title | First name | Surname |
| _____ | | _____ |
| Position | | Organisation name |

..... .....

SIGNATURE DATE

**APPENDIX ii: Ethics approval ACU National**

Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne

ACU National

Human Research Ethics Committee

Committee Approval Form

**Principal Investigator/Supervisor:** Professor Paul Fulbrook Brisbane Campus

**Co-Investigators:**

**Student Researcher:** Ms Janet Edmunds Brisbane Campus

**Ethics approval has been granted for the following project:**
A qualitative analysis of the experiences of mothers
who are breastfeeding an infant with tongue tie.

**for the period:** 17 October 2008 to 31 December 2009

**Human Research Ethics Committee (HREC) Register Number:** Q200708 42

**The following standard conditions as stipulated in the *National Statement on Ethical Conduct in Research Involving Humans* (2007) apply:**

(i) that Principal Investigators / Supervisors provide, on the form supplied by the Human Research Ethics Committee, annual reports on matters such as:
- security of records
- compliance with approved consent procedures and documentation
- compliance with special conditions, and

(ii) that researchers report to the HREC immediately any matter that might affect the ethical acceptability of the protocol, such as:
- proposed changes to the protocol
- unforeseen circumstances or events
- adverse effects on participants

The HREC will conduct an audit each year of all projects deemed to be of more than low risk. There will also be random audits of a sample of projects considered to be of negligible risk and low risk on all campuses each year.

Within one month of the conclusion of the project, researchers are required to complete a *Final Report Form* and submit it to the local Research Services Officer.

If the project continues for more than one year, researchers are required to complete an *Annual Progress Report Form* and submit it to the local Research Services Officer within one month of the anniversary date of the ethics approval.

K. Pashley.

Signed: Date: 17 October 2008
(Research Services Officer, McAuley Campus)

**APPENDIX iii: Consent form**

Queensland Government
Queensland Health

ACU National
Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne

*Copy for Researcher / Copy for Participant to Keep*

TITLE OF PROJECT: A qualitative analysis of the experiences of mothers who are breastfeeding an infant with tongue tie.

SUPERVISOR: Professor Paul Fulbrook

STUDENT RESEARCHER: Janet Edmunds

I ..... *(the participant)* have read (*or, where appropriate, have had read to me)* and understood the information provided in the Letter to Participants. Any questions I have asked have been answered to my satisfaction. I agree to participate in two interviews, each of which may last up to one hour in duration.

During a face-to-face interview I will be asked to describe my experience of breastfeeding my baby. The interview will be recorded and the researcher will also take notes. I will be given the opportunity to read the interview when it has been transcribed and have the opportunity to add anything which I may have overlooked initially to ensure that the meaning I intended is clear. I realise that I can withdraw my consent at any time and that if I choose to do so, the researcher will not contact me again related to this research project. I agree that research data collected for the study may be published or may be provided to other researchers in a form that does not identify me in any way.

NAME OF PARTICIPANT: .....

SIGNATURE .....

DATE .....

SIGNATURE OF PRINCIPAL SUPERVISOR:.....

DATE:.....

SIGNATURE OF STUDENT RESEARCHER: .....

DATE:.....

**APPENDIX iv: Information letter**

Queensland Government
Queensland Health

ACU National
Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne

**INFORMATION LETTER TO ADULT PARTICIPANTS**

PROJECT TITLE: A qualitative analysis of the experiences of mothers who are breastfeeding an infant with a tongue tie

SUPERVISOR: Professor Paul Fulbrook

STUDENT RESEARCHER: Janet Edmunds

PROGRAMME IN WHICH ENROLLED: Master of Nursing (Research)

Dear Participant,

You are invited to participate in a research project which aims to discover how having a baby with a tongue tie affects the experience of breastfeeding in the immediate period following birth. I will be asking you to talk with me after your first contact with the Breastfeeding Clinic.

If you agree to participate in this research, you will be invited to take part in two face-to-face interviews. Each interview is expected to last for approximately one hour. The face-to-face interviews will be conducted in a quiet place of your choice.

If you agree to the face-to-face interviews, the only people present will be you and me. The questions I will be asking you will be about your experience breastfeeding your baby. The interview will be recorded and I will take some notes while you are talking.

Approximately two weeks after the first interview, you will be invited for a second interview. The purpose of the second interview is to discuss your breastfeeding experience following your first clinic attendance, during which relevant advice and support will have been provided.

After each interview you will be given the opportunity to read the transcript to make sure I understood what you meant and that you agree with what is written.

The benefits for you include an opportunity to discuss your breastfeeding experience including any difficulties that you may have had. It is anticipated that the information that you and the other participants provide will result in valuable insights that may be used to improve practices around identification and management of infants with tongue tie and the advice given to their mothers. The findings of this research will be made available to you if you wish to read it.

You will be free to withdraw your consent at any time. If you have agreed to an initial interview but decide you do not wish to continue with a second interview, this will be respected. This will not disadvantage you in any way. Your wishes will be respected, and you will not be contacted.

Should you agree to participate in this research, you will be required to sign a consent form. After you give your consent, the student researcher will contact you to arrange an interview.

Your personal details will be kept confidential and your privacy respected at all times. When your interview notes are transcribed from an interview, your own name will not be used and a pseudonym will be used instead. You will be identified as informant one or informant two, for example.

It is possible that some interviews may be quite emotional. If, at any time, you wish to temporarily stop or postpone the interview your wishes will be respected. If, as a result of the interview, you would like to talk to someone about your feelings, a qualified counsellor has agreed to provide

support to you. She will talk to you in confidence. Her details are given below, and she can be contacted from DATE to DATE.

Ms. Ruth Gregory

(Early Intervention Specialist, Child Health)

3817 2328

Any questions you may have which have not been made clear regarding this project should be directed to my Supervisor and/or me. Our contact details are below.

Janet Edmunds (Student Researcher) Work: 3817 2381

Professor Paul Fulbrook (Supervisor) Work: 3623 7420

Australian Catholic University, Brisbane.

On completion of the research, you will have the opportunity to read the report. A copy of the full research report (thesis) will be available from the Australian Catholic University library, McAuley Campus, Brisbane following completion of my studies.

This study has been approved by the Human Research Ethics Committee at Australian Catholic University and The West Moreton South Burnett District Human Research Ethics Committee.

In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Supervisor and Student Researcher have not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee at the address given below.

Qld Chair, HREC

C/o Research Services

Australian Catholic University

Brisbane Campus

PO Box 456

Virginia QLD 4014

Tel: 07 3623 7429

Fax: 07 3623 7328

Any complaint or concern will be treated in confidence and fully investigated and you will be informed of the outcome.

If you agree to participate in this project, you should sign both copies of the Consent Form, keep one copy for your records and return the other copy to the Student Researcher.

..... .....

Principal Supervisor Student Researcher

✂----------

Please complete and return this section to Janet Edmunds, in the envelope provided.

Thank you for your interest.

I..... (please insert your name) am interested in participating in this research.

I can be contacted on .....(phone number).

## APPENDIX v: The Hazelbaker Assessment Tool for Lingual Frenulum Function

# The *Hazelbaker ASSESSMENT TOOL FOR LINGUAL FRENULUM FUNCTION* © Chart

## FUNCTION ITEMS

***LATERALIZATION***

2 Complete

1 Body of tongue but not tongue tip

0 None

***LIFT OF TONGUE***

2 Tip to mid-mouth

1 Only edges to mid-mouth

0 Tip stays at alveolar ridge ***OR***
tip rises only to mid-mouth with jaw closure

***EXTENSION OF TONGUE***

2 Tip over lower lip

1 Tip over lower gum only

0 Neither of the above ***OR*** anterior or mid-tongue humps

***SPREAD OF ANTERIOR TONGUE***

2 Complete

1 Moderate ***OR*** partial

0 Little ***OR*** none

***CUPPING OF TONGUE***

2 Entire edge, firm cup

1 Side edges only, moderate cup

0 Poor ***OR*** no cup

***PERISTALSIS***

2 Complete anterior to posterior
(originates at the tip)
1 Partial: originating posterior to tip

0 None ***OR*** reverse peristalsis

***SNAP-BACK***

2 None

1 Periodic

0 Frequent ***OR*** with each suck

| |
|---|
| Mother's name:<br>Baby's name:<br>Baby's age: |
| Date of assessment:<br>Function Item Score:<br>Appearance Item Score:<br>Combined Score: / |
| 14 = Perfect score (regardless of Appearance Item score).<br>11 = Acceptable if Appearance Item score is 10.<br><11 = Function impaired. Frenotomy should be considered if management fails. Frenotomy necessary if Appearance Item score is < 8. |

# The
# *Hazelbaker ASSESSMENT TOOL FOR LINGUAL FRENULUM FUNCTION ©*
# Chart

## APPEARANCE ITEMS

***APPEARANCE OF TONGUE WHEN LIFTED***

2 Round ***OR*** square

1 Slight cleft in tip apparent

0 Heart-shaped

Appearance Item Score:

***ELASTICITY OF FRENULUM***

2 Very elastic (excellent)

1 Moderately elastic

0 Little ***OR*** no elasticity

***LENGTH OF LINGUAL FRENULUM WHEN TONGUE LIFTED***

2 More than 1 cm or embedded in tongue

1 1 cm

0 Less than 1 cm

***ATTACHMENT OF LINGUAL FRENULUM TO TONGUE***

2 Posterior to tip

1 At tip

0 Notched

***ATTACHMENT OF LINGUAL FRENULUM TO INFERIOR ALVEOLAR RIDGE***

2 Attached to floor of mouth ***OR*** well below ridge

1 Attached just below ridge

0 Attached at ridge

## Brief Instructions for Screening for Tongue-tie with the *Hazelbaker Assessment Tool for Lingual Frenulum Function©(HATLFF)*

**Function Items:**

***Lateralization***: Check for lateralization when doing an oral digital exam. Your fingertip traces the inferior alveolar ridge from midline to the most posterior aspect and then traces it back to midline while staying in contact with the lateral edge of the tongue. Repeat on the opposite side. Give the baby a 2 if the entire tongue follows your finger. Give the baby a 1 if only the body of the tongue follows your finger. Give the baby a 0 if the tongue does not follow your finger at all.

***Lift of Tongue***: Look for lift when the baby is crying or yawning. During a weight check or diaper change is often a good time. Give the baby a 2 if the tongue rises to mid-mouth without any jaw closure. Give the baby a 1 if only the edges are able to rise to mid-mouth. Give the baby a 0 if the tongue tip stays at the inferior alveolar ridge as the tongue rises OR if the tongue is only able to rise to mid-mouth with jaw closure.

***Extension of Tongue***: Either elicit tongue extrusion by gently tapping or tickling the baby's tongue tip or by observing tongue extrusion during latch-on or tongue play. Give the baby a 2 if the tongue tip extends past the lower lip. Give the baby a 1 if the tongue tip extends only over the lower gumline. (Babies under two weeks often do *not* extend their tongues over the lower lip.) Give the baby a 0 if the baby cannot extend its tongue past the lower gum or lip OR if the tongue humps anywhere along its length when the baby attempts tongue extrusion.

***Spread of the Anterior Tongue***: Assess during the oral digital exam. Feel for spread as the baby curls its tongue around your finger to begin tongue peristalsis. The spread comes just before the curl and the tongue should thin out all along its anterior edge. Give the baby a 2 if the anterior tongue-edge spread is complete. Give the baby a 1 if the spread is partial (it doesn't thin out all the way). Give the baby a 0 if the edge barely thins out or does not thin out at all.

***Cupping of the Tongue***: Assess during the oral digital exam. Feel for cupping as the baby begins tongue peristalsis. The tongue should firmly curl around your finger during cupping forming a seal. Give the baby a 2 if the tongue cups your finger firmly and with its entire edge. Give the baby a 1 if only the side edges cup your finger, forming a moderate seal. Give the baby a 0 if the tongue does not cup your finger well or at all, forming a poor or non-existent seal.

***Tongue Peristalsis***: Assess during the oral digital exam. The tongue should move in an anterior to posterior direction in a wavelike fashion. Give the baby a 2 if tongue peristalsis is complete and well executed. Give the baby a 1 if tongue peristalsis originates behind the tip (because the tip is anchored and can't move). Give the baby a 0 if the tongue does no peristalsis or if there is reverse (posterior to anterior thrusting) peristalsis of the tongue.

***Snap-back***: Assess during the oral digital exam. When the tongue loses its seal as a result of the pull of the short or inelastic frenulum, the tongue will lose its cup. You may hear a clicking sound when this happens. This can occur with each suck, or periodically throughout the feed as the baby tires. Give the baby a 2 if there is no snap-back. Give the baby a 1 if snap-back only occurs periodically (a few times each feed or when baby tires). Give the baby a 0 if snap-back occurs frequently or with each suck.

**Appearance Items:** Assess the following items either while infant is crying or otherwise lifting its tongue. To observe all of the items below during a digital exam, use two fingers to lift the tongue from underneath.

***Appearance of Tongue when Lifted***: Give the baby a 2 if the tongue tip appears rounded or square at the anterior edge while the tongue is lifted. Give the baby a 1 if a slight cleft in the middle of the anterior edge is apparent. Give the baby a 0 if the anterior edge of the tongue appears heart-shaped. (Please note: heart shaped tongue usually only appears with the worst tongue-ties, so it **cannot** be used as the sole criteria for determining if a baby is tongue-tied.)

***Elasticity of the Lingual Frenulum***: Each individual lingual frenulum has its own level of inherent elasticity, just as does skin. You are checking for this inherent elasticity as the tongue is lifted. You should attempt to stretch the lingual frenulum to its fullest extent during this part of the assessment. Give the baby a 2 if the lingual frenulum is very elastic. Give the baby a 1 if the lingual frenulum is only moderately elastic. Give the baby a 0 if the lingual frenulum has little or no elasticity. (Please note: there is no evidence that lingual frenula stretch more over time with use. If this were so, there would be no tongue-tied adults.)

***Length of the Lingual Frenulum when the Tongue is Lifted***: It is ideal to have a long lingual frenulum. The longer the frenulum the better the tongue is able to maneuver about the mouth. You may actually have to measure with a small ruler at first but soon you will be able to "eyeball" this measurement. There are some lingual frenula that are "embedded" in the tongue musculature. These frenula are so far back that, even if short, cause no tongue function problems at all. Give the baby a 2 if the lingual frenulum is longer than 1 cm. Give the baby a 1 if the lingual frenulum is 1 cm in length. Give the baby a 0 if the lingual frenulum is shorter than 1 cm.

***Attachment of Lingual Frenulum to the Tongue***: Give the baby a 2 if the lingual frenulum is attached to the tongue anywhere posterior to the tongue-tip. Give the baby a 1 if the lingual frenulum is attached at the tongue-tip. Give the baby a 0 if the lingual frenulum is causing a notch at the midline of the tongue-tip.

***Attachment of the Lingual Frenulum to the Inferior Alveolar Ridge (lower gumline)***: Give the baby a 2 if the lingual frenulum is attached well below the lower gum ridge or on the floor of the mouth. Give the baby a 1 if the lingual frenulum is attached just below the lower gum ridge. Give the baby a 0 if the lingual frenulum is attached on the lower gum ridge.

***See the ATLFF chart for scoring and treatment instructions.***

***Please note:*** It is not as important what the tongue and lingual frenulum look like, rather how well the tongue functions, especially during sucking. A baby will not be able to transfer milk well if its tongue motion is restricted. The tongue drives the sucking mechanism. If the tongue can't do its job than neither can the baby.

**APPENDIX vi: Frenotomy Decision Rule for breastfeeding Infants**

## Frenotomy Decision Rule For Breastfeeding Infants

Mother with nipple pain/trauma while breastfeeding AND/OR inability to maintain latch AND/OR poor weight gain in the infant (<15g/d0, AND A visible membrane anterior to the base of the tongue, which restricts tongue movement, leading to:

An inability to touch the roof of the mouth, OR

An inability to cup an examining finger, OR

An inability to protrude the tongue past the gum line

(Srinivasan, Dobrich, Mitnick, & Feldman, 2006, p. 218)

**APPENDIX vii: The LATCH Scoring Table**

## The LATCH Scoring Table

| | 0 | 1 | 2 |
|---|---|---|---|
| **L**<br>Latch | Too sleepy or reluctant<br>No latch achieved | Repeated attempts<br>Hold Nipple in mouth<br>Stimulate to suck | Grasps breast<br>Tongue down<br>Lips flanged<br>Rhythmic sucking |
| **A**<br>Audible swallowing | None | A few with stimulation | Spontaneous and intermittent<br><24 hours old<br>Spontaneous and frequent<br>>24 hours old |
| **T**<br>Type of nipple | Inverted | Flat | Everted (after stimulation) |
| **C**<br>Comfort (Breast/Nipples) | Engorged<br>Cracked, bleeding, large blisters, or bruises<br>Severe discomfort | Filling<br>Reddened/small blisters or bruises<br>Mild/moderate discomfort | Soft<br>Tender |
| **H**<br>Hold (Positioning) | Full assist (staff holds infant at breast) | Minimal assist (i.e., elevate head of bed; place pillows for support.)<br>Teach one side; mother does other<br>Staff holds and then | No assist from staff<br>Mother able to position/ hold infant |

| | | | |
|---|---|---|---|
| | | mother takes over | |

(Jensen, Wallace, & Kelsay, 1994, p. 29)

**APPENDIX viii: Short-Form McGill Pain Questionnaire**

SHORT-FORM McGILL PAIN QUESTIONNAIRE

RONALD MELZACK

PATIENT'S NAME: _____ DATE: _____

| | NONE | MILD | MODERATE | SEVERE |
|---|---|---|---|---|
| THROBBING | 0) | 1) | 2) | 3) |
| SHOOTING | 0) | 1) | 2) | 3) |
| STABBING | 0) | 1) | 2) | 3) |
| SHARP | 0) | 1) | 2) | 3) |
| CRAMPING | 0) | 1) | 2) | 3) |
| GNAWING | 0) | 1) | 2) | 3) |
| HOT-BURNING | 0) | 1) | 2) | 3) |
| ACHING | 0) | 1) | 2) | 3) |
| HEAVY | 0) | 1) | 2) | 3) |
| TENDER | 0) | 1) | 2) | 3) |
| SPLITTING | 0) | 1) | 2) | 3) |
| TIRING-EXHAUSTING | 0) | 1) | 2) | 3) |
| SICKENING | 0) | 1) | 2) | 3) |
| FEARFUL | 0) | 1) | 2) | 3) |
| PUNISHING-CRUEL | 0) | 1) | 2) | 3) |

NO PAIN ——— WORST POSSIBLE PAIN

PPI

0 NO PAIN _____
1 MILD _____
2 DISCOMFORTING _____
3 DISTRESSING _____
4 HORRIBLE _____
5 EXCRUCIATING _____



Fig. 1. The short-form McGill Pain Questionnaire (SF-MPQ). Descriptors 1–11 represent the sensory dimension of pain experience and 12–15 represent the affective dimension. Each descriptor is ranked on an intensity scale of 0 = none, 1 = mild, 2 = moderate, 3 = severe. The Present Pain Intensity (PPI) of the standard long-form McGill Pain Questionnaire (LF-MPQ) and the visual analogue (VAS) are also included to provide overall intensity scores.

(Melzack, 1987, p. 193)

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