"IT'S BEYOND WATER"

STORIES OF WOMEN'S EXPERIENCE OF USING WATER FOR LABOUR AND BIRTH

By

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Abstract

This study looks at stories of women's experience of using water for labour and birth and has explored them to reveal the meaning women make of the experience.

Randomised controlled trials report that there are no statistically significant differences in the outcomes for women who use water when compared to those who do not. It has also established that there are no adverse effects on the mother and baby. However, most of the research to date largely ignores what women have to say about the use of water for labour and birth. This study employed an interpretive design using audio-taped conversations with women as the method of data collection, and a thematic analysis of the stories, to identify the meaning women make of their experiences. The research is informed by a feminist perspective, which honours the women's voices and knowledge.

The women's stories reveal that the all-encompassing warmth associated with being enveloped in warm water cradles, supports, relaxes, comforts, soothes, shelters and protects the woman, creates a barrier and offers her a sense of privacy. Water can be used in any form, even the act of thinking about, preparing for and anticipating the water opens possibilities for women. Women use water to reduce their fear of pain and of childbirth itself. Women use water to cope with pain, not necessarily to remove or diminish pain and to maintain control over the process of birth. It is not necessary to actually give birth in the water to achieve these benefits.

Recommendations for midwifery practice include the need for midwives to reflect on their role as guardians of normal birth by examining their personal philosophy of birth, critically examining their outcomes and honouring women's knowledge.

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Photo 1: Woman and baby in the birth pool at home immediately after birth
Source: Name withheld by request

We all spend the first eternal dreamtime of our lives in the same internal mother ocean, so even after we have lost our gills and dived into the world, we are forever water babies, responding playfully to the least drenching; singing in the rain or in the bath, thinking or dreaming wild thoughts as we are borne weightless in the swimming pool, the river or the sea.

(Roger Deakin, September 1999)

Chapter 1.

The Focus and Context of the Research Inquiry

Introduction

My research interest lies in the stories that women use to describe their experience of using water immersion for labour and birth, and the meaning they make of the experience. Experiences are described as the "actual observations of or practical acquaintance with facts, events, knowledge or skills resulting from this" (Concise Oxford Dictionary, 1976).

Women, midwives, doctors and researchers have all asked questions such as:

- Does using water immersion during labour and birth make a difference to the woman and her baby, and if so, how?
- Is water immersion safe?

Over the last two decades there has been a significant amount of literature on the subject attempting to answer those questions, both from descriptions based on practical experience, and from research. In the Perinatal Database of the Cochrane Library of randomised controlled trials, one systematic review concluded that there is no statistically significant difference in outcomes between women using water immersion in labour and those using no water immersion in labour (Nikodem, 2000). The types of outcomes that were measured included: maternal experience and satisfaction of labour, pain and the use of analgesia/anaesthesia, augmentation and the duration of labour and birth, high blood pressure, amniotic fluid volume in women with oligohydramnios, mode of delivery, trauma to the birth canal requiring suturing, maternal infection, self-esteem, postpartum depression and

breastfeeding. Fetal and neonatal outcomes included: lung hypoplasia, abnormal fetal heart rate patterns needing intervention, neonatal condition, admission to neonatal intensive care unit, temperature, neonatal infection rates and perinatal deaths. In the systematic review (Nikodem, 2000), there were no statistically significant differences between the two groups for apgar scores, umbilical arterial pH values and neonatal infection rates. These findings would suggest that the use of water for labour and birth may not make any difference to women or their babies and that the use of water immersion does not effect the outcome of the birth.

However, this is not the impression I have gained from many years of supporting women using water immersion during labour and birth. Whilst I am interested in the measurable outcomes, I am just as interested in what women have to say about the process of using water for labour. Therefore it is my intention to use stories that are a descriptive account of the women's understanding of what using water immersion in labour and birth did for them, and to explore what meaning they made of the experience.

The research described in this thesis is set out in seven chapters. In the first chapter I describe why this project is important to me and provide the justification and the impetus. It discusses the influences that brought me to this inquiry and the context in which the research project occurred. I have also provided an autobiographical narrative that locates me within the project as a midwife, woman and researcher. Chapter two, provides an account of water as a metaphor and looks at some of the early influences on the use the water in

childbirth. Chapter three, the literature review, details the search for research and literature on water immersion for labour and birth. It also illuminates the practice developments and increased understanding that has occurred over the past two decades. Chapter four describes the processes used to expose women's stories about their experiences of using water for labour and birth. Using a women-centred approach and story telling to inform the research, I describe the decision trail employed in the research. I explain such things as: participant recruitment and selection, the data gathering process, the process for analysis and interpretation, ethical issues and issues of rigour in qualitative research. Chapter five contains the stories the five women have shared with me about their experience of using water immersion for labour and/or birth. It also includes my reflections on their stories and the themes that have emerged. The two main categories, "Getting ***to*** the water" and "Getting ***into*** the water" are revealed in chapter six. The subcategories that are contained within these two categories are examined in relation to the literature. To a large extent I have continued to use the women's own words to illustrate each theme. Chapter seven discusses the limitations of the study, the implications for further research and recommendations for midwifery practice arising from this study, and the conclusions.

Locating myself - my story

This story provides some of the context of my journey to this research and the ways my knowledge has evolved and developed over time. I include this story so the reader will know who I am, what has shaped me as a midwife and to bring to the fore some of the assumptions I bring to the research.

I have a passion for using water for labour and birth. The passion has grown over the last seven years through the discovery of home birth and what I now understand as 'physiological birth'. I was keen to explore ways of supporting women to birth without the interventions seen in the hospital environment and under the technological model of care. Understanding and using the many other 'natural' ways, including water, during labour and birth became a means to achieve that end.

From 1997 to 2002 I practised full-time as a self-employed independent midwife based in the community. At the beginning of 2002 I joined the teaching team in the Bachelor of Midwifery programme at Massey University at Wellington, New Zealand and have continued to carry a caseload of women.

The group practice that I belong to actively promotes pregnancy, labour, birth, and breastfeeding as normal life events for the majority of women. The group philosophy is based on trust in the natural processes of pregnancy and birth and supports the natural processes by using minimal intervention. The relationship with women involves the free exchange of information on which to base decisions. We believe this approach to be empowering to the women and to enhance women's ability to make choices in pregnancy, labour, birth and postnatally (Domino Midwives, Wellington, 2000).

For me, joining a group practice that actively supported women to believe and trust the normal process of birth, allowed me to challenge and change my way of working with women. I attended home births for the first time in my midwifery career. I was also free to support women birthing in the hospital,

who chose not to have any of the interventions that are now so common in many institutions. I was also free from the interference of other practitioners, who may not be so passionate about the natural processes of childbirth and may even induce fear in women due to their own birthing experiences and training.

In our practice, the women are mainly well informed and have made conscious decisions to minimise interventions, many opting for home birth. It is significant that many women are clear about avoiding pharmacological pain relief, especially epidural anaesthesia and interventions such as induction of labour. During my early days with the group, I was seeing many women, both in the hospital and at home, using water during their labour and birth. This was one of the tools available to support women to birth physiologically and it impressed me to see how well they coped and how much more in control they were of the birthing experience. It was by observing and talking to women that gradually my knowledge and confidence in the use of water for labour and birth grew. It had a profound effect on me and was to turn my midwifery world and beliefs upside down. This also prompted me to make further investigations into the use of water immersion for labour and birth.

It has become my passion to see some credibility given to the knowledge women have about what works for them in labour and birth. What women have to say about the use of water for labour and birth should be read alongside the evidence from research using randomised-controlled trials and other quantitative methods that focus on outcomes.

I have come to my current way of practice and my passion for water late in my career as a midwife. I did not have home births or use water with any of my own three children, though I did insist on a vaginal birth for my first baby, who was a breech presentation, despite strong opposition from the obstetrician. I have no recollection of home birth or anything resembling physiological birth being discussed during my training as a midwife in Australia in 1975. As an enthusiastic student midwife, I was always first to arrive when we were called to 'watch a delivery', as was the custom of the time. When I completed my training I was confident to go out and 'do deliveries' by myself, although this was not the acceptable practice of the time.

During the mid 1970's in central Victoria, Australia, it was the custom that women were supervised by a General Practitioner (GP) or obstetrician during pregnancy and birth. Midwives worked rostered and rotating shifts at the maternity unit, so did not have the chance to meet women before they arrived in labour and did not see them after they were discharged from hospital. We were not able to provide continuity of care to women as we were expected to go off duty at the end of our shift and handover to the next midwife. We were not responsible for any decisions about the care of the woman; we followed the instructions of the doctor. At this unit women in labour had a full pubic shave and 500 ml soap and water enema on admission. Midwives were not allowed to do vaginal examinations but were expected to perform per rectum examinations on all labouring women on admission, to assess cervical dilatation. Attempts to change these practices were met with resistance from the obstetricians and charge midwife, although we did manage to change some

things by deception. It was always useful to inform the aging charge sister of the maternity unit, usually after her days off, that we had discovered that a particular practice i.e. shaving, had now been discontinued at the Royal Women's Hospital (RWH) in Melbourne. She had trained many, many years before at RWH and always held their practice to be the 'gold standard'.

I remember there was one woman who triggered changes both in my own practice and in the way things were done in this particular maternity unit. This woman had read widely about 'natural' birth and wanted to follow the concepts of Frederick Leboyer as discussed in his book and film of the same name, *Birth without Violence (1974)*. She also knew about the Lamaze method, which was popularised in the early 1950s by French obstetrician Dr. Ferdinand Lamaze, who discovered the psychoprophylaxis technique on a trip to Russia. It was proposed that this method helped to reduce pain effectively by encouraging the woman to focus on breathing patterns during labour and to encourage her to actively participate in the birth of her baby.

The woman had come into the unit for an induction of labour and started by insisting that she did not wish to be shaved or to have an enema. This caused some controversy, but after several phone calls and discussions with her obstetrician she was 'allowed' to continue unshaved. During the course of her induction, which in those days consisted of regular doses of buccal pitocin, this woman remained sitting upright and crossed legged against a bean bag (which she had supplied herself) on the bed, naked, and concentrating on her breathing patterns as her contractions increased in intensity. There were regular

intrusions from the charge sister who kept insisting that she cover herself up, at least with a sheet if not a nightgown. However she did not allow this to distract her and we talked a lot about what she believed about birth and how she could achieve a 'natural' birth. I was able to advocate for her in that I supported her to labour and birth in the ways she wanted to, against all the very strong objections from the 'authorities' at the time.

This was in fact the first time that I realized that there was another way of doing things. This woman, and others, were questioning the routines that were being imposed on them during their pregnancies and births and were demanding changes. This also hit a nerve for me as a midwife. I too believed women should be able 'to get on with it' and that I, as a midwife, was in the best position to be able to support the 'getting on with it'. However, for me it was not until I came to New Zealand to live and work, that I was able to appreciate autonomous midwifery practice and working ‘with women’.

I came to New Zealand in 1984, just prior to the changes in the legislation that enabled midwifery independence and autonomy by removing any requirements to be supervised by medical practitioners (Nurses Amendment Act, 1990). The 1990’s were an exciting time for women and midwives. Midwives and women were now able to reclaim ‘natural/normal’ childbirth and to forge ahead to develop a partnership model of practice that returns power and control to women.

It was during this time that I was able to reflect on and make sense of the dissonance that had dogged my career for nearly two decades. Gradually it became obvious that there was a lot about the work that I was doing as a midwife that did not seem to fit with what we had been taught to do, or how I thought I should be able to function as a midwife. We were more focused on being an assistant to the doctor than to the woman, and I began to challenge the medicalised model of caring for women during pregnancy and childbirth. This gave me the impetus to move into practice using a women-centred partnership model.

There are currently twelve midwives in our midwifery group practice providing total midwifery care as the lead maternity carer (LMC) to women from positive pregnancy test, to four to six weeks postpartum. Approximately a quarter of the group's births occur at home. The majority of women will use water for labour and birth. The practice has four birth pools available for women to use. Most of the women who birth at the hospital use water for labour and birth also. It was from this experience that my interest in physiological birth and non-pharmacological pain relieving methods evolved, and I started to investigate the use of water immersion in labour and birth.

I watched and learnt from the midwives who supported women by using homoeopathy, acupuncture and acupressure, water, massage, and by being a quiet, reassuring, supportive presence to the woman and her family. I have observed a significant difference in the way this group of midwives practice, when compared to other groups of midwives in this region. It is noticeable that

the midwives in this group have different values and beliefs about what constitutes 'normal' and in the way they perceive their role as the supporter of the woman to achieve non- interventionist birth.

During this period of time I learned a lot from the women themselves. My learning also involved considerable 'unlearning' of my previous ways of working and knowledge about birth. By unlearning I mean that I reflected on what it was I thought I knew about birth and explored the evidence for this knowledge. In this way, many of the so-called 'routines' were challenged. Shared responsibility and control and informed decision-making with women was incorporated into my practice. This has led to a different way of working, or 'being with, women throughout their childbearing year.

Being with a woman at this most intimate time in her life is a great privilege. As women, each of us brings different influences to the relationship. For the woman, when discussing the role of support people at her birth, she knows that everyone has an important part to play in the birth process. Accordingly, her midwife should be chosen carefully, not only for her attachment to the birthing woman and her family but also for her skill. A midwife must realise and overcome the negative experience of her own birth, or births she has attended, that have had less than optimal outcomes. "Many midwives with extensive practical experience also possess broad knowledge of pathology, so the midwife must be able to fully dissociate herself from her professional experience and avoid projecting pathological thinking onto the labour in progress. Only a person with a great deal of understanding and self-discipline

can do this" (Sargunas, 1990, p.86). I have found, and continue to find, this to be true. The close and intimate relationship that develops between the woman and her midwife, and the power of this relationship during this time, is illuminated in the phrase, "Midwives and women are intertwined, whatever affects women affects midwives and vice versa – we are interrelated and interwoven" (Flint, 1986, p. 14). I wholeheartedly agree with these sentiments.

One of the most powerful lessons I have learnt as a midwife supporting women in physiological birth is patience; patience to watch and wait and to challenge the timeframes, boundaries and other parameters that have been imposed on the individual process of each woman's birth. I take care with what I say to women in labour, using words of encouragement and praise. I take care not to project negative thoughts or actions or suggest the need for intervention. I take care with issues of power and control, empowering women and their families. I take care with the birthing environment, both in the woman's home and in the hospital. This process is ongoing. At every birth, new knowledge is learnt and old knowledge is relegated**.**

Let me once again return to the beginning of my journey of discovery. In 1997 I attended my first water birth as the Lead Maternity Carer (LMC) assuming responsibility for the woman's care throughout the entire pregnancy, labour and birth and postnatal period. It was the woman's second baby, after a gap of ten years, with a new partner, and a planned home birth. In December 2002 I have had the privilege of attending this same woman at her third water birth at home. It was also during 1997 that I was the LMC for another woman who was

planning to use water immersion during labour and birth for her second baby. She had read about water immersion during labour and the idea appealed to her. She had wanted to avoid interventions in the 'normal' birth process, as she had experienced with her first birth, and saw water as one way of supporting her so that she did not need pharmacological pain relief. We had talked about using water all through her pregnancy and she had watched waterbirth videos with her partner. Even when she broke her ankle at 37 weeks she insisted that a fibreglass cast be put on, as it was her intention to be in the water during her labour.

This woman was the sister of an obstetrician and so she was also exposed to the medical view of pregnancy, labour and birth. Her membranes spontaneously ruptured at term, without any accompanying contractions. Initially she was happy to await the onset of contractions, while monitoring her temperature and the activity of the baby, but after discussion with her obstetrician brother, she opted for labour augmentation. So into hospital we all went and augmentation was commenced. During the early hours of her labour, while we waited for the onset of contractions, we had a long discussion with her brother about the benefits of using water for labour and birth. Like many obstetricians, he was unable to come to grips with non-interventionist birth, believing, as do many, that if the technology exists, then why wouldn't a woman and her caregivers opt to use it. He believed that the technology and surveillance methods available to women did improve the outcomes even though many of these interventions and routines are linked to higher levels of operative delivery, epidural use and increased morbidity.

In discussing the various merits of water immersion, this obstetrician said that there was not enough evidence that it made any difference. He was familiar with the findings of a systematic review in the perinatal database of the Cochrane Library of randomised controlled trials that said there were no statistically significant differences between immersion and no immersion (Nikodem, 2000). He agreed with the advice of the systematic review that further randomised-controlled trials (RCTs) were needed to prove the efficacy and safety of this method. He proposed that any future RCT's should have the water immersion group of women using internal fetal heart monitoring and maternal rectal temperature probes to keep a constant eye on maternal core temperature. He was particularly concerned about the dangers of increasing the fetal temperature. It is understood that the fetal temperature is 0.5 - 1^{o} C above that of the mother and that the baby can only tolerate a slight change in core temperature before oxygen needs are significantly increased.

We raised points in favour of using water, like added buoyancy for the woman which provides her with improved ability to move freely and to adopt any upright position she wants. The warmth of the water provides a soothing and calming effect that helps the woman relax completely between contractions. The water supports the body, and especially the perineum meaning that with non-directed pushing there is reduced perineal damage.

One of the benefits we suggested is to the baby. Proponents of water immersion and water birth believe that the transition for the baby, when it is

born into a watery environment and brought slowly to the surface is gentler than being born in air. This gentle birth is supported by a physiological third stage, where the cord is not clamped or cut until it has ceased pulsating naturally and the placenta is born by maternal effort. The baby, whose body remains in the warm water, while it’s head is in air, is held close to the mother's breast and often latches onto the nipple and will breastfeed soon after birth. Bonding is initiated early in this quiet, warm environment with subdued lighting.

However, after an hour or so of discussion when each side tried very hard to convince the other of their point of view, the obstetrician concluded that in his opinion, "there is no *medical benefit* [Italics added] to the mother or the fetus from using water for labour or birth." At this point I realized how divergent our worldviews were and that there was little chance of this person being able to understand what it was like for women in labour. I concluded the discussion by pointing out that in my experience, women and midwives actually do not use water for medical benefit.

After this, the challenge for me was to explore the literature on water immersion and water birth, so that I could not only provide the women in my care with the best evidence available but also find a way of convincing the doubters as well. This process started my foray into postgraduate studies. Over the last five years I have been engaged in study for a Master of Arts (Applied) degree in Midwifery and have followed a theme of the use of water for labour and birth throughout this journey. During this time I have amassed a large quantity of literature and research. Much of the research employs quantitative

methodologies and I have found that the voice of women is largely absent in these studies.

In 1998, as part of my studies, I prepared a submission supporting water immersion facilities being made available for women who choose to birth in the hospital. In my experience, women planning to birth in the hospital are also keen to reduce interventions in the 'normal' process, often considered routine in an institution, and are keen to find ways of doing this. On completion of the academic work, I sent the submission to the clinical leader of a tertiary /secondary birthing facility where I attend women in my care. With the support of the unit team leader and the staff, the unit purchased a birth pool. I advised and assisted in the establishment of protocols and procedures for the use of this pool and led some education sessions for midwives.

In 1999, a hospital-employed midwife colleague and I conducted a small audit of the use of the birth pool over a period of three months. This also formed a part of my academic studies. The audit produced a rich source of comments by women (see Figures 1 & 2, below) about the use of water and it was this that prompted me to explore the stories of women in more depth.

Comments made by the women about using water
"Brilliant - helped relaxation - able to be in upright position."
"I knew it would feel better than on a bed for starters."
"Delicious - relief to get into, hated getting out."
"Good size for husband as well."
"Provided great comfort and pain relief - size was great and water supported you." [sic]
"Relaxing."
"High recommend it."
"Wonderful - just what I felt like."

Figure 1. Birth Pool Audit, Wellington Women's Hospital 1999.

What were the advantages of using warm water immersion ?
"Comfort, relaxation, reduced stress, helped take weight off body."
"Relaxation."
"Natural."
"Pain relief."
"Calming."
"Took weight off knees."
"Didn't need to rely on partner for physical support."
"Took lower back pain away."
"Pain relief without drugs."
"Calming emotionally and spiritually."

Figure 2. Birth Pool Audit, Wellington Women's Hospital. 1999

A report was prepared for the management of the hospital and the women's outcomes, (albeit a small number) compared favourably with findings from other studies done on the effects of using water in labour. The summary of the findings of the audit is as follows: twenty-six women used the pool in the audit period. Sixteen (16/26, 61.5%) women returned the audit questionnaire Twenty (77%) sets of notes were audited to determine the outcomes for women using the pool. All were 38 weeks or more. Even though eight women wanted to birth in water, eight did not and as Table 1 reveals, four actually did.

Table 1: Birth Pool Audit, Women's Survey, Wellington Women's Hospital. 1999

Total number of women	Used the pool		Median Dilatation On entering the pool	Average length of time in the pool	Water Birth
	Primip	Multip			
16	5 (31.3%)	11(68.8%)	4-5cm	2 hrs 45 mins	4 (25%)

Table 2: Birth Pool Audit, Women's Notes, Wellington Women's Hospital, 1999. (Maude and McIver, 2001*)*

		Number of Women N=26	Percentage	Notes
Type of Birth	Normal Birth	13	81.25	
	Assisted Birth	1	6.25	
	Caesarean Section	2	12.5	Both were repeat C/S
Pain relief	Gas, TENS, acupressure, homoeopathy	7	43.75	
	Epidural	4	25	2 for C/S and 1 for Forceps
	None	6		
3rd Stage Management	Active	10	62.5	
	Physiological	6	37.5	
PPH		2	12.5	1 from a perineal tear. 1 four hrs postpartum
There were no maternal or infant infections reported				

Later, I became involved in a multi-disciplinary team that planned and designed the building of three new birth rooms at the regional hospital's delivery suite. The midwives were keen to include water immersion facilities as a part of these rooms and this is where I was able to have some input, from the perspective of a practitioner who regularly supports women in physiological childbirth.

The birthing rooms were targeted specifically for women planning low intervention births. This was in recognition of the overly high levels of interventions, operative delivery and caesarean section at this hospital and an attempt to find some way to make a change. The labouring rooms in this unit were very small and had previously been likened to prison cells. Women were usually transferred to a larger delivery 'theatre' just prior to second stage, for the birth. The design team used concepts developed by Bianca Lepori, an Italian architect who has a special interest in designing birthing spaces for women (Lepori, 1994). Lepori designs rooms within the institution, where the space will encourage free movement and provide a range of options for supporting the women in labour and birth. Within the room are elements that do not impose on the natural process of birth but rather support women to birth physiologically. These include a deep bath or pool, bars placed at different heights around the walls and fabric anchored to the ceiling that provide the women with the ability to hang supported with their feet firmly on the ground while at the same time relaxing the pelvic floor. Lepori feels that the central space should be free and not taken up with a bed. She supports the use of a low bed against which the woman can lean, kneel, sit or rest (Lepori, 1994).

The notion of the birth environment having an influence on labour and birth for women was the focus of a Cochrane Library systematic review. A comparison was made between the birth outcomes for women who used a home-like setting within the delivery unit, versus the conventional hospital delivery unit setting. The reviewer concluded:

> Women who were allocated to care in home-like settings were less likely to use pharmacological pain relief measures during labour, less likely to have labour augmented with oxytocin, less likely to be immobile during labour, less likely to have fetal heart abnormalities, and were happier with their care, than women who received standard care (Hodnett, 2000, p. 3).

The birthing rooms are now in use and although a wider range of women and practitioners are using them, the occupancy rates continue to be low as many practitioners continue to function as ‘gatekeepers’ and control who can use the rooms. Women are discouraged from using the rooms if their caregiver is not comfortable with physiological birth. Many women are advised of their need to have an epidural anaesthesia prior to even going into labour. Complaints have come from practitioners about the low height of the beds, citing sore backs for the person attending the woman who is on the bed. Paediatricians have complained about the height of the infant resuscitation table. And on it goes. We have recently seen a period of time when the purpose built birthing rooms were used to accommodate the ‘on call’ obstetricians overnight because of the privacy and ensuite facilities (Dominion Post, August 21st, 2003). All these things preclude woman from using the birth rooms. It is interesting to note that

Hodnett (2000) reports that, while making changes to the birth environment can make a difference to outcomes for women, by far the greatest change that needs to occur is in the caregiver's behaviour, in terms of the support they provide to labouring women. I would see this as an area that needs further research and education in the future.

The next phase of my studies was to completea paper called 'Clinical Inquiry - Evidence for Practice'. In this paper a research question was formulated and I then set about finding the research evidence to answer the question. My question was, ″ Does the use of warm water immersion for labouring women reduce the need for pharmacological pain relief and operative delivery?"

During my literature search I came across the systematic review of the use of water immersion for labour and birth in the Cochrane Library conducted by Nikodem, (2000). There were three RCT's included in this review. One study in particular stood out for me, in that they included patient satisfaction surveys posted to the women who used the bath. The researchers commented that water immersion gives great satisfaction to users and found a high rate of consumer satisfaction with the use of water in labour. However, the researchers then dismissed this finding in the conclusions by stating, "unfortunately, satisfaction is not a reliable index of effectiveness" (Cammu, 1994, p.471). This is indeed an interesting assertion, given that in other industries, satisfaction is the motivating force behind service provision.

Both the comments made by the obstetrician brother of a client who said "there is no medical benefit to the mother or the fetus from using water for labour or birth", and by Cammu et al., (1994) has provided me with the motivation to carry out this research. I wanted to explore a way of combining the findings of the evidence from research with the stories of women's experiences. It is my hope that when anyone reviews the literature on water for labour and birth, they will look at both the evidence from RCT's plus other forms of quantitative research and the stories that women tell about their experience of using water for labour and birth, in order to give validity to both forms of knowledge.

During the time of doing this research I cared for a woman having her first baby as backup to my midwife partner. On the day she went into labour my partner was on leave, so I assumed the role of her caregiver. I was lucky enough to have met both the woman and her partner on a couple of occasions and then when she was in early labour, I met her mother also. The woman had a wonderful waterbirth in the hospital. I talked at length to her mother about the difference in how her daughter birthed compared to when she had her own children. She had been overwhelmed by the beauty and simplicity of the experience and has written a story about the birth (The birth of my grandchild) that she wanted me to have for this project. I have included the story because it highlights the fact that women never forget their births and the circumstances around them. This mother recognised the difference that the strong woman/midwife relationship has on the ability of the woman to claim her own birth experience.

THE BIRTH OF MY GRANDCHILD

My story comes from a perspective of personal experiences giving birth to my own children in the sixties, to watching my daughter give birth to our granddaughter in the year 2001.

My own birth stories in the sixties, living in a small provisional town are very negative, and have left me with memories of being mismanaged, uninformed, and isolated from the medical profession I expected care and assistance from during this time.

I had absolutely no experience of a midwife system, or how present day births are managed and cared for before, during, and after baby is born. The concept of a water birth was something I had never even thought of and indeed seemed rather radical and scary to me. My daughter, who was having her first child, wanted me to be with her and her husband during this time. This was to bring a whole new and wonderful experience for me.

My daughter had talked to me about a birthing pool and that the warm water might be a nice option to have during labour but actually giving birth in the water was not something I had anticipated.

The first thing I was impressed at when arriving in the city to await the arrival of this grandchild was the care of the midwife as the due date approached. The home visits and care during this time were so supportive and informative it left me feeling very confident that this was going to be a very different experience for my daughter in 2001 than had been for me 30 years ago.

My daughter's labour began with a slow lead up for about half a day when an established labour began. We were in full contact with

the midwife who knew exactly what was going on and gave advice as to when we should proceed to the hospital.

On arriving at the hospital my daughter was asked if she would like to get into the pool to see if it would help ease her contractions and told that her husband could get in with her and support her in the pool. This proved to be very beneficial and comforting and as the midwife dimmed the lights the room seemed to become a peaceful place as labour proceeded through the first stage and eventually transitioned and she was ready to begin pushing the baby out. There was no need for intervention during the second stage of labour and I remember the midwife saying my daughter could simply stay where she was if she felt comfortable and as she agreed I realised we were going to have a water birth!

It all seemed so beautiful and natural and I remember saying to the midwife as I looked at my daughter supported by her husband in the pool that this was one of the most beautiful things I had seen in my life, and this is how child birth should be.

I do admit much of my positive emotion was in the fact I had trust and confidence in the midwife and her care during this time and knew that had any intervention had been necessary the right decisions would have been made.

To me, warm water does represent comfort and the sound, feel, and even the look of the water in the pool seemed the natural medium to immerse in during labour and the pain that goes with giving birth.

A mirror was put in to the pool so the parents could see the baby's head emerging and this was exciting and gave encouragement to my daughter that her labour was moving well forward and the huge task would soon be over. The baby's head was pushed out and the

> shoulders and body followed quickly and was lifted out on to the mother’s stomach. It was over. We had had a waterbirth!
>
> I have been left with such a strong impression of the comfort and tranquillity that surrounded the hard painful work of this birth and I know that being in the water was the right choice. If this option had been given to me during my own births thirty years ago I hope I would have chosen it (Personal communication, name withheld by request, 2001).

As I have mentioned previously, some women have never had the opportunity to share their birth story and when they do there is often much sadness. I'll never forget the look on the mother's face when she realised that her daughter was not going to get out of the water to birth the baby. It was only a fleeting look, of fear and unspoken question. At the time I recall how important it was to respond with a look of my own. I do not know what that look was but I was aware that it needed to be calm and reassuring as the birth was imminent and all the attention was to be on the birthing woman. She accepted the look of confirmation that all was well and acknowledged the relationship of trust and shared responsibility between her daughter and myself, and once again the focus was the woman about to birth. The story returns me once more to the notion that woman and a midwife are intertwined and acknowledges the impact we as midwives can have on the birthing woman and her family. "When midwives are strong, women labour safely and without interference" (Flint, 1986, p. 14).

Keeping birth normal - the impetus for the research project

Midwifery in New Zealand is based on a woman-centred partnership model of care (Guilland & Pairman, 1994). This model places the woman and the midwife side-by-side, as they journey through the childbearing year. The partnership model of care means that the midwife and woman are able to plan care that is individually negotiated for that woman. Unlike medicine, midwives do not position themselves as the only 'expert authority'. There is recognition that both the woman and the midwife have unique skills and knowledge to contribute and these are shared in the decision making process, with ultimate responsibility remaining with the woman.

As midwives, we are increasingly searching for the best available evidence to challenge and change many of the practices in obstetrics that are ‘routines’ and /or based on the quirk of the maternity care providers and institutions. We recognise that practice wisdom comes from many sources. Midwives use evidence from scientific inquiry and from the shared stories that have informed our practice over time. We need to validate the advice we give to women by exploring and sharing the research findings, and practice wisdom in order to facilitate the woman and her family to make informed decisions about their care, based on this information. Women are entitled to receive thorough, unbiased information about choices for care, place of birth and caregiver, so that they can make informed decisions about their care.

During my practice as a midwife it has become more evident that women are looking for ways to reduce interventions, in the natural process of birth.

Women know that they should avoid all drugs and harmful substances during their pregnancies, yet the protocols for active management of labour subject them to a range of drugs and practices that often start a cascade of intervention, resulting in operative delivery. Wagner (cited in Hall & Holloway, 1998, p.31) suggests that, “Many midwives and the women in their care are becoming advocates of more natural forms of childbirth and demand care that is sensitive to the psychological needs of the individual and her family”.

In my experience women often ask about alternatives to pharmacological pain relief. The option to use water is one way of supporting women in labour without drugs, along with continuity of caregiver and the availability of private and peaceful surroundings in which to labour and birth. The demand for water immersion and waterbirth has grown rapidly throughout the world over the last two decades. Hall & Holloway (1998) suggest this may be one reaction against medical control of childbirth. This is supported by Kitzinger who says that the use of warm water also seeks to change the dynamics of the care of labouring and birthing women, to give control back to them. She says warm water immersion and waterbirth “… is not just another technique. It represents an approach to childbirth that enables the birthing woman to have autonomy. It changes the environment and the quality of interactions among all involved ” (Kitzinger, 1995, p.34).

However, it is my view that some practitioners continue to ‘gatekeep’ for the woman. By gatekeeping I mean that the women are only given the information that the practitioner thinks is ‘right’ or ‘wrong’, based on what he/she thinks,

rather than providing women with the entire range of possibilities and then discussing to negotiate an informed decision.

Many midwives in this region practice in a shared-care model of maternity care. It is my view that they have abdicated their midwifery autonomy by practising in this way. In the shared care model, the care of a woman throughout the pregnancy, labour and birth and postnatal is provided by both a general practitioner/obstetrician and a midwife, usually with the doctor appointed as the Lead Maternity Carer, and is thereby fragmented. This is a medically dominated model of care guided by protocols, guidelines and ‘routines’, based more on reducing the risk and liability for the clinicians, than on what each woman’s needs might be. The catch phrase, ‘women’s choice’, offers these practitioners the opportunity to hide behind a façade of inadequate information sharing and personal preference, none of which actually has anything to do with the choice of the woman.

It is my understanding that if women are fully informed of the range of possibilities for their care, their expectations are explored and they are involved in the decision making processes, they would challenge the care (and interventions) being offered to them. Almost without exception, when asked at the initial contact i.e. the booking visit, women will say that they want a 'normal' birth and little intervention in their birth process. However, the outcome of their birth rarely ever resembles this plan.

The main birthing facility in this region is a tertiary level unit, (the unit is the main referral centre for women with pregnancy complications). In our region, as well as nationally and internationally, the rates of intervention and operative birth continue to rise at alarming rates. Nationally, from 1988 to 1998, the caesarean section (C/S) rates rose from 11.7% of births to 18.2% of births (Maternity services: a reference document, HFA, Nov., 2000). By 1999, 20.4% of NZ babies are born by C/S, 11% by operative vaginal birth, 27% of babies were born following induced birth and the rate of epidural use was 22.8% of all births excluding elective C/S (Report on Maternity, MOH, 1999).

It is vital that midwives reflect on the part they play in the journey with women through pregnancy, birth and after the birth in order to reclaim guardianship of normal birth. I agree with the sentiments expressed by Lesley Page,

> Midwives are the only professionals who specialise in the overall care of childbearing women and their babies when there are no complications, in what is called 'normal' pregnancy and birth. It is generally accepted that midwives are required to refer to a doctor if complications arise, yet *less attention is paid to the need for midwives to confirm the normal and to be able to support, protect and encourage healthy birth and the avoidance of unnecessary interventions There has never been a greater need for midwives to protect and support normal processes* [Italics added](Page, 2000, p. 105).

If midwives and the midwifery profession are to have any impact on reducing interventions in the birth process, then the focus must go back onto exploring

ways of protecting 'normal' or physiological birth, and of changing/challenging the behaviours that run the risk of becoming simply 'pseudo-medicine'.

This chapter has provided the reader with a description of the focus and context of the study. The application comes from asking the question "does the use of water for labour and birth make a difference for women"? We know what is reported in the literature about the childbirth outcomes for women using water, but what is it that women have to say? I have provided some of the contextual background, circumstances and framework that introduces the motivation for the study, along with a personal perspective contained in my own story. My story locates me within the research and tracks my journey as a midwife and researcher. It also makes transparent my assumptions and passions for physiological birth and water immersion. The next chapter looks briefly at the symbolism of water and it's place in the world. I will also appraise the early authors on water during childbirth.

Chapter 2.

The Narrative of Water

In this chapter I will provide a brief description of water as a metaphor for birth and an inspiration for poetry and art. This is followed by an appraisal of some of the early and influential authors in the area of water for labour and birth

Water as a metaphor for birth

It is mainly in the realms of dreams, fantasy and metaphor that birth and water are commonly associated.

> "Water has always been a symbol of the mother everywhere and at all times. Life began in the ocean: in amniotic fluid we recapture the history of life. The attraction of water during labour and dreams of aquatic births are not new. In ancient Greece, Aphrodite, the goddess of love, was born from the foam of the waves. In Cyprus the goddess of love was born on the beach at Paphos. Aquatic metaphors can be adapted to the different phases of labour: first stage does not conjure up the same images of water as the ejection of the foetus, the phase of violent, aggressive and even frightening waves. In fact, all episodes of sexual life have been expressed in water metaphors – from the romantic lake to the rhythmic waves of orgasm" (Odent, 1990, p.20).

Water also inspires poetry. Warmth and water come from the first environment we experience - "we all spend the first eternal dreamtime of our lives in the same internal mother ocean" (Deakin, 1999). Water is found in mythology. The classic late 15th century painting by Botticelli, the *Birth of Venus*, seen below,

depicts the story of the birth of Venus (Aphrodite). Aphrodite, whose name is derived from *aphros* or foam, emerged fully-grown from the sea. As the title suggests, the *Birth of Venus* represents the moment when the goddess was born.

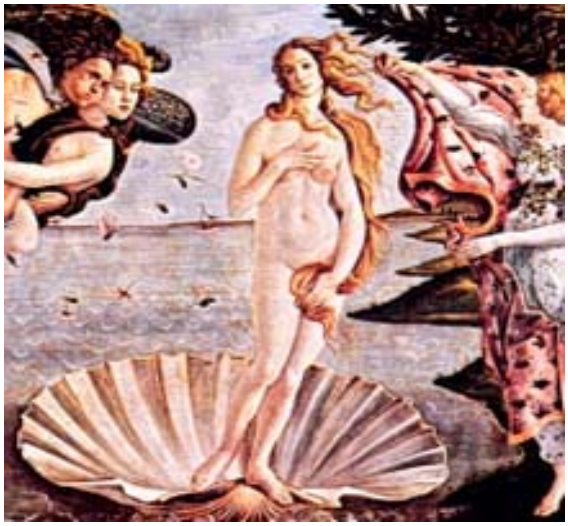

Figure 3: The birth of Venus painted by Botticelli in the late 15th century.
Source: http://jcccnet.jonhco.cc.ks.us/~jjackson.aphr.html. 25.11.02

Water has symbolic, life-giving, nurturing, soothing (and sometimes tumultuous) associations. Therefore it may be an important foundational memory to which we return when giving birth. Water is fundamental to life itself and may be an important media to which women are drawn during childbirth.

The history and development of the practice of using water in childbirth

Frederick Leboyer (1974), Michel Odent (1983) and Igor Tjarkovsky (in Sidenbladh, E, 1983), are three authors whose work has significantly influenced the contemporary movement to promote the use of water in childbirth. Their work has influenced not only my practice personally, but the knowledge and understanding of gentle birth and physiological birth being

increasingly embraced by women and midwives. The words of these three sit well alongside the stories and photographs of the women included in this study.

Leboyer's *Birth without Violence* (1974) was ground breaking in the 1970's. In this book he offered an insight into the feelings of newborn babies and prompted caring practitioners to review their methods of how the child is welcomed and handled, at and soon after birth. He proposed that the birth should be less traumatic for the baby and that many of the so-called 'routine' practices were causing distress. I choose to quote Leboyer directly as his words hold a poetic beauty that should not, in my opinion, be paraphrased.

> For the newborn, to enter our world is to enter a realm of opposites, where everything is good or bad, pleasant or unpleasant, dry or wet. We must accord the greatest of respect to their fragile moment of birth. The baby is between two worlds, hesitating on a threshold. It must not be hurried or jostled: it must be allowed to enter at its own pace (Leboyer, 1974, p. 48).

Leboyer recommends that the birth environment be quiet, darkened and unhurried. The baby is placed directly onto the mother's abdomen on its front where gentle hands caress and massage the baby's back and limbs. The umbilical cord is not cut until it ceases pulsating naturally. He says, "to sever the umbilicus when the child has scarcely left the mother's womb is an act of cruelty, whose ill effects are immeasurable. To conserve it intact while it pulses is to transform the act of birth" (Leboyer, 1974, p. 40). He also goes on to

advocate that the baby be put into warm water as soon as possible after the birth. This makes it possible for the baby to gradually unfold and straighten its spine. Leboyer's theories on placing the baby in water soon after birth, and the effects of this, are pertinent to women labouring and birthing in water. The following poem by Leboyer expresses his thoughts on the importance of water to the baby:

> We should place it – in fact, replace it – in water!
> For the baby has emerged from water, the maternal waters that have carried it, and cradled it for so long. Made it light as a bird…
> There should be a basin of water at hand, roughly body temperature…
> We place the child in it.
> Once again, extremely slowly.
> As the child sinks down, it becomes weightless, and is freed from this new heavy body with all its burden of harsh new sensation.
> The baby floats, disembodied, light. As free as in the early, distant days of pregnancy when it could play and move about without restrictions in a limitless sea.
> It's surprised and it's pleasure know no bounds.
> In its element once more, the baby forgets what it has just left behind; forgets its mother. Once again it is inside her.
> This first separation, far from being an agony, becomes a joy.
> The hands supporting the child in the bath soon feel the little body relax completely. Whatever fear, stiffness, tension might have remained now melt like snow in the sun. Everything in the baby's body that was still anxious, frozen, rigid, begins to live, to dance.
> ***And – most wonderful of all – the child opens its eyes wide. This first look is unforgettable. Immense, deep, grave, intense, these eyes enquire: 'Where am I? What has happened to me?'*** (Italics added) (Leboyer, 1974, p.68)

Photo 2: Soon after birth, still in the water Source: Name withheld by request

The photograph of one of the participants above shows the baby immediately after birth in water. He has his eyes wide open and his gaze is fixed firmly on his mother. Often the baby will find the nipple and start to suckle. Many of us who are regularly engaged in water birth are familiar with this astonishing sight. It seems that babies born in water are quiet, relaxed and focused.

Director of the hospital in Pithiviers in France, Michel Odent reported on the hospital's 100th underwater birth in *The Lancet*, 1983. At this hospital they had read Leboyer and embraced his ideas, prompted largely by the women in their care. The hospital installed a pool especially for those women who were experiencing long slow labours with much lower backache and who commonly have a strong desire for pharmacological pain relief. While the pool was not

initially intended for women in the second stage of labour, Odent points out that, “the process of delivery can sometimes be so extraordinarily fast under water, that some parturients do not leave the pool at the second stage. Birth under water is therefore not exceptional in our unit" (Odent, 1983, p. 1476). Odent (cited in Hall & Holloway, 1998, p. 30), considers that “parturient women were more relaxed when immersed in warm water and this reduced the need for drugs and medical interventions”.

In his book *Water and Sexuality* (1990), Odent has said that history abounds with evidence that the use of water for labour and birth has occurred in many centuries and many different cultures.

> According to a Japanese tradition, women living in some small villages by the sea gave birth in the sea. Engravings suggest that in some African tribes the traditional place to give birth was near a river. Some aborigines on the western coast of Australia first paddle in the sea and then give birth on the beach. Birth under water was probably known in cultures as diverse as the Indians of Panama and, perhaps, some Maoris of New Zealand (Odent, 1990, p.20).

Eric Sidenbladh, in his book *Water Babies,* described the work of Igor Tjarkovsky, a Soviet researcher and pioneer of baby swimming. Tjarkovsky's theory is that we must learn to live in our element of origin – water – in order to develop our full potential and that this opens up new prospects for human life on earth (Sidenbladh, 1983). Tjarkovsky described himself as an athletics coach with qualifications in biology and psychology and is a qualified male midwife. He proposed that water training should begin early in pregnancy and

that delivery in water protects the baby's brain from the strain and possible damage inflicted upon it by a sudden transition to the world of gravity (ibid). For the baby to be born in water the effect is less dramatic than when born in air because it doesn't come out into a cold world where the force of gravity strikes like the blow from a club. For the baby born in water, the first breath does not occur in that stressful moment when all is happening at once: light, gravity, handling and cutting the cord. Instinctively the mother catches the baby and brings it up to her breast. Some babies will immediately latch onto the nipple and start to suckle. The baby feels the air against its face while its body is still in the water and is stimulated to take its first breath. The transition to breathing air, to a life on dry land, takes place slowly and softly (Tjarkovsky, cited in Sidenbladh, 1983).

In the introduction to the book, *Water Birth Unplugged* (Lawrence Beech, 1996), Sheila Kitzinger discusses data obtained from 19,000 water births that have taken place in different countries. The data was presented at the First International Conference of Water Birth in Spring 1995 and demonstrates that there were less interventions in childbirth and fewer operative births associated with the use of water. She goes on to say,

> "There is mounting evidence that immersion in water relieves pain. A woman relaxes better, moves more easily, and is subjected to fewer interventions, such as frequent vaginal examinations, intrusive monitoring, perineal counterpressure, commanded pushing and prolonged breath-holding and episiotomy" (Kitzinger, cited in Lawrence Beech, 1996, p.*v*).

All of the authors cited above have influenced my thinking and practice around water and physiological birth. I believe that as midwives, who use and encourage the use of water during childbirth, we have a responsibility to provide evidence for managers and medical colleagues that will enhance confidence in the use of water for labour and birth. This can be achieved through the demonstration of careful and safe practice, and by research (Garland, 1997).

In this chapter I have shown how water is an integral part of life and therefore birth. Artists, poets and the texts of earlier authors around use of water during childbirth have provided important narratives of water in the context of the world. The next chapter explores the literature from research into water immersion for labour and birth.

Chapter 3.

Literature Review

This chapter discusses the literature I have reviewed over time, and for this research. I have included evidence gained from traditional quantitative methodologies, such as from randomised controlled trials, through to research using qualitative methodologies. The writings described in chapter two influenced my knowledge and understanding of the history, development, and practice of using water for labour and birth. The research described in this chapter provides another perspective. I was especially interested in obtaining evidence from research that sought to explore women's experiences of using water for labour and birth. I wanted to understand the meaning women make of the experience, however, there was very little to be found.

Conducting the literature search

When undertaking a literature search in your chosen area it is necessary to understand which ‘type’ of study is more likely to carry weight in terms of the evidence. The traditional hierarchy of evidence provides an understanding of why one methodology carries more weight over another. This ranking system demonstrated in Table 3 below, is a standard notation for the relative weight carried by different types of study when decisions are made about the effectiveness of clinical interventions. The RCT is the ‘gold standard’ and represents the only true means of evaluating the effectiveness of an intervention (in this case, water immersion) in terms of improving outcomes such as operative delivery or exogenous pain relief. Qualitative studies using techniques such as a grounded theory approach or narrative inquiry may not be

given the credence they deserve, as they are not placed high in the hierarchy of evidence. Studies employing a qualitative methodology, such as those that seek to explore human experiences and meaning may not even be considered as important research by some, based entirely on their lowly status in a scientific hierarchy of evidence. However it should be understood that this is because quantitative designs attempt to answer questions as to ‘what works’ whereas qualitative designs attempt to explore ‘how does it work’ or ‘how do individuals feel about it’.

Table 3: Traditional Hierarchy of Evidence (Greenhalgh, 1997, p. 48)

1	Systematic reviews and meta-analyses.
2	Randomised controlled trials with definitive results (that is, a result with confidence intervals that do not overlap the threshold clinically significant effect).
3	Randomised controlled trials with non-definitive results (that is, a point estimate that suggests a clinically significant effect but with confidence intervals overlapping the threshold for this effect).
4	Cohort studies.
5	Case-control studies.
6	Cross sectional surveys.
7	Case reports.

Therefore many important and valid studies in the field of qualitative research do not feature in this particular hierarchy of evidence at all. This appears true of studies that explore women's knowledge. It is exactly the description of the experience and the meaning that women make of the experience of using water for labour and birth that is the focus of this research. I start this research from a

position of wanting to elevate the evidence from qualitative research to a place where it is afforded equal credibility with that derived from quantitative research.

Literature Search

I conducted searches of various sources, including The Cochrane Database of Systematic Reviews, PubMed (which includes Cinhal and Medline) and other library catalogues such as Ace Graphics and the Midwives Information and Resource Service (MIDIRS) using the following search prompts: water immersion + labour +birth. While I have amassed a considerable amount of literature on the subject, the review to follow in this chapter will mainly focus on RCT's, systematic reviews of RCT's and other forms of systematic review, research that explores women's experiences along with literature containing comments by the 'experts' in the area of waterbirth in the form of clinical practice exchanges.

Some of the research conducted around water immersion and birth, which provides a picture of the variety of methodologies/methods employed to explore this phenomenon, includes systematic reviews, (McCandlish & Renfrew, 1993, Nikodem, 2000), randomised-controlled trials, (Schorn, McAllister & Blanco, 1993; Cammu, Clasen, Van Wettere, & Derde, 1994, Rush, Burlock, Lambert, Loosely-Millman, Hutchison, & Enkin, 1996, Eckert, Turnball, & MacLennan, 2001, Ohlsson, Buchhave, Leandersson, Nordstrom, Rydhstrom & Sjolin, 2001), a randomised prospective pilot study, (Eriksson, Mattsson & Ladfors, 1997), non-randomised prospective trials, (Lenstrup,

Schantz, Berget, Feder, Roseno, & Hertel, 1987, Eriksson, Ladfors, Mattsson & Fall, 1996), audit (Burns & Greenish, 1993), retrospective or historical cohort studies (Waldenstrom & Nilsson, 1992, Burke & Kilfoyle, 1995, Aird, Luckas, Buckett & Bousfield, 1997, Robertson, Huang, Croughan-Minihane & Kilpatrick, 1998, Burns, 2001), survey (Alderdice, Renfrew, Marchant, Ashurst, Hughes, Berridge & Garcia, 1995, Gilbert & Tookey, 1999), literature review, (Garland & Jones, 1997, Beake, 1999), an observational record, (Church, 1989) and a one qualitative study informed by the grounded theory approach (Hall & Holloway, 1998).

The review of literature revealed research that documented the history and development of the use of water for labour and birth and also a progression of thinking and sophistication, which was based on the outcomes of the research. The research-outcomes have provided evidence for practice, especially those related to safety. In this next section I will briefly review literature relevant to the safety, effectiveness and experience of using water for labour and birth.

The Safety of Water Immersion

The UK House of Commons Health Committee's report on Maternity Services, 1992, recommended the availability of birthing pools for women in response to an increased demand by women seeking to use water immersion during labour over the previous decade. From the time of the report there was an increased number of hospitals providing this facility. Information about how water was to be used by women lay mainly in exchanges from clinical practice and observational studies during this period of time. The issue of safety of water

immersion and birth gained public exposure in the UK in the early nineties after the report of the deaths of two babies, apparently associated with the use of water for labour. The following discussion outlines some of the studies undertaken over time to determine the safety of water immersion.

Alderdice et al. (1995) reported on a large-scale survey of waterbirth in England and Wales conducted from 1992-1993 to determine the options available for women to use water, the number of women who used water and to assess the extent of any problems associated with birth in water. The researchers found that accurate identification of the number of women labouring and giving birth in water was not possible, as many units did not keep accurate records, despite all units indicating that they provided waterbirth facilities. It was also not possible to identify problems associated with use of the water because of different methods of identification and reporting amongst units. Improved data collection methods, standardised reporting systems for intrapartum related baby deaths and further research were recommended (Alderdice, 1995).

A later surveillance study and postal survey was conducted to compare perinatal morbidity and mortality for babies delivered in water with rates for babies not delivered in water from April 1994 to March 1996. A national survey of maternity units and paediatricians was conducted to determine the risks of death or admission to special care baby units for babies delivered in water and to identify clinical findings that might relate to the use of water. The key message from this study was that perinatal mortality and risk of admission

to special care baby units is similar for babies delivered in water and for low risk deliveries that do not take place in water (Gilbert & Tookey, 1999). This finding reinforced the results of the systematic review of randomised controlled trials (most recent substantive amendment made on 2 June 1997) which found that there were no significant adverse effects detected for (maternal), fetal or neonatal outcomes (Nikodem, 2000).

Issues related to maternal and infant infections have been researched along with the question of optimum water temperature and whether or not the baby will attempt to breathe under water. The following review represents a small component of the literature exploring aspects of safety in water for labour and birth.

The risk of infection to either the woman or the baby has often been cited as a reason for reluctance to use water for labour and birth, especially for women with ruptured membranes. Retrospective data from a continuing trial at a birth centre in Stockholm compared women who took a bath after ruptured membranes with women who had ruptured membranes but did not use the bath. This research found that there was no statistical difference between the two groups in relation to infection, asphyxia or infant respiratory problems or signs of amnionitis in the woman (Waldenstrom & Nilsson, 1992). A later study by Eriksson, Ladfors, Mattsson and Fall (1996) evaluated the influence of a bath on infectious morbidity in mothers and neonates with pre-labour rupture of the membranes. Their study of 1385 women with pre-labour rupture of the membranes after 34 weeks of gestation, found that a tub bath did not increase

the risk of maternal or neonatal infection after premature rupture of the membranes, however it appears to prolong latency in some instances. Robertson, Huang, Croughan-Minihane, & Kilpatrick (1998) also explored the association between water baths during labour and the development of chorioamnionitis or endometritis. The researchers conducted a medical record review and patient interviews and found that there was no statistically significant association between baths during labour and the occurrence of chorioamnionitis or endometritis.

What happens if the baby breathes while underwater is the question in the minds of many who do not understand water birth. A Consultant Clinical Physiologist reviewed the perceived problem of the baby breathing under water and this was explained in depth in an article published in the *British Journal of Obstetrics and Gynaecology*. He describes the physiology of the phenomenon called the diving reflex. He explains that when a non-asphyxiated infant with it's umbilical cord intact is born into warm liquid at a normal fetal environmental temperature, this mechanism acts to ensure continued inhibition of breathing (Johnson, 1996). This clinical exchange has been pivotal to support the practice of water immersion and birth.

With regard to the optimum water temperature of the birth pool or bath, there has been limited evidence available since Rosevear et al. (1993) first raised the issue. Johnson (1996), in explaining the physiology of fetal hyperthermia, revealed that overheating can occur when a woman is immersed in water higher than her body temperature. He recommended that the temperature of the

water in the bath be continuously displayed and that the area of the woman's body covered by water should be recorded. Charles (1998) reviewed the research into fetal hyperthermia and provided explanations for the concerns regarding the effects of overheating on the baby. She added a recommendation to include the monitoring of maternal temperature hourly during warm water immersion

Effectiveness of water immersion

The effectiveness of water for labour and birth has been explored by using a number of different methodologies, which include clinical practice exchanges, audit, non-randomised cohort studies, randomised-controlled trials and systematic reviews. A few of these will be reviewed in this section.

Commentary from clinical observations by Odent (1983) informed readers that anticipation and the timing of entry to the birth pool were both important issues to consider for women using water for labour and birth. Odent claimed that women tended to dilate faster as they waited for the pool to fill. He reported that women's labours could progress rapidly just by watching the pool fill. “We have found that the mere sight of the water and the sound of it filling the pool are sometimes sufficient stimuli to release inhibitions so that a birth may occur before the pool is full” (Odent, 1983, p.1476). I have also found this to be true in my practice, especially with women who are having a second or subsequent baby, who are often in more advanced labour when they arrive at the delivery suite or call the midwife to their home. Many invariably give birth alongside the pool as it is being filled. A later commentary by Balaskas (1995) supports

the notion that anticipation of using water has an effect for women. She suggested that the expectations of what is going to happen in the birth room which contained a pool or bath were radically different from what women were used to in a hospital. The presence of a pool indicated that there had been a deliberate attempt to induce feelings of confidence and relaxation in the woman. This made the hospital environment far more attractive to women who were aiming to give birth without interventions and drugs, but who also wanted the security of obstetric support close at hand.

A prospective, (but non-randomised) controlled trial conducted by Lenstrup et al. (1987) found that a warm bath during the first stage of labour improved cervical dilatation and may have provided some pain relief (Lenstrup, Schantz, Berget, Feder, Roseno & Hertel, 1987). This study formed the foundation for other research into when women should enter the bath or pool and how long they should remain in the water. A later randomised prospective pilot study of 200 women was undertaken by Eriksson, Mattfors and Ladfors (1997) to determine whether an early bath affected the progress of labour and the use of analgesia, when compared with a late bath during the first stage of labour. They found that women in the early bath group had longer labours and needed more augmentation and epidural analgesia. They went on to recommend that bathing should be used after five centimetres dilatation.

An audit of the usage of a newly installed birthpool in one centre was conducted over the course of one year. Burns and Greenish (1993) specifically looked at perineal trauma and possible analgesic effects of the water. The

researchers found that twice as many primigravidas using the pool received no pharmacological pain relief and that almost three-quarters of all women using the pool used no other forms of pain relief. The recommendation was that the use of water during labour may be of benefit as a relaxant and may reduce the need for pharmacological pain relief (Burns & Greenish, 1993). On a similar line Odent (1997) cautions that a possible decrease in efficiency might be anticipated when a woman has been in the bath for more than two hours. Odent (1997) provided further insights into the safety and efficacy of water immersion in a clinical practice exchange in the *Journal of Nurse-Midwifery* when discussing the possibility that water immersion might slow or stop labour. He recommended that the importance of anticipating the bath should not be underestimated and that judicious use of this phase by experienced midwives might help women enter the pool at just the right time.

A retrospective randomly selected case study of 50 women who had birthed in water compared with 50 women who had not used water, measured length of labour, perineal trauma, analgesia and neonatal outcomes (Burke & Kilfoyle, 1995). The researchers added a postal satisfaction and opinion survey to a further 50 randomly selected women who had waterbirths and 50 who did not. They found that women birthing in water did not have shorter labours (but the control group did have more artificial rupture of the membranes, which may have skewed the results). The overall incidence of perineal trauma was higher in the control group. Mean apgar scores were the same for both groups of babies. The survey revealed that motivation by the women to use the water played an important part in the outcomes. However, women were not hearing

about the choice of water from their midwives. Waterbirth women highlighted the pain relieving and relaxing effects the water had afforded them (Burke & Kilfoyle, 1995). The data from the survey of women in this study contained greater qualitative evidence of women's experience of water birth than any other surveys or from earlier research into water.

The findings regarding women having their first baby were later repeated in an historical cohort study by Aird et al. (1997). The results demonstrated that nulliparous women who used water had significantly reduced rates of operative delivery, analgesic requirements and perineal trauma. There were also significant reductions in analgesic requirements in multigravidas (Aird, 1997). A matched case-control study by Burns (2001) compared prospective data from 1300 women who had a waterbirth with those who had not used the pool, collected over a period of eight years. The findings compare favourably with previous studies and suggest that water immersion can be a safe and satisfying option for low risk women. Burns has co-authored evidence based guidelines for the use of water and recommends that midwives generate their own evidence by collecting consistent data and collaborating nationally and internationally (Burns, 2001).

The above discussion has demonstrated the outcomes of research performed using a mixture of methodologies lower down in the hierarchy of evidence. It is prudent at this point to note that trials without controls and particularly without randomised controls are highly likely to either underestimate or overestimate

treatment effects. Therefore all of these results need to be considered in the light of the few randomised-controlled trials reported in the literature

The following discussion reveals the findings of randomised-controlled trials, a systematic review of randomised-controlled trials and other forms of systematic review.

In 1993, Rona McCandlish and Mary Renfrew conducted a systematic review of the available evidence on water immersion during labour and birth, and provided a description of the development of water birth, current practices and a review of the evidence. In keeping with the recommendations of the above survey, they recommended that there should be ongoing survey of the current practice of water for labour and birth. They also suggested a large-scale RCT, and a confidential register of serious adverse events to monitor the safety of water use in labour and birth, particularly in relation to maternal and infant infections and fetal wellbeing (McCandlish & Renfrew, 1993).

The Cochrane Database of Systematic Reviews contains a review of three RCT's conducted by the Cochrane Pregnancy and Childbirth Group. The objective of the systematic review was to determine the possible benefits and risks of the use of immersion in water during pregnancy, labour or birth on maternal, fetal, neonatal and caregiver outcomes. The main results of the review of three trials involving 988 women were that,

> No statistically significant differences between immersion and no immersion were detected for use of pain relief, augmentation and

> duration of first stage of labour, meconium stained liquor and perineal trauma. Neonatal outcomes such as Apgar scores, umbilical arterial pH values and neonatal infection rates also showed no differences (Nikodem, 2000).

The three studies included in the systematic review were looking at different aspects of water immersion from its pain relieving aspects to whether water immersion means more efficient labours and whether it affects the use of pharmacological analgesic use. Two of the included trials, one with 110 participants (Cammu et al., 1994), and another (Schorn et al. 1993) with 93 participants, found that there were no significant differences in outcomes. The study conducted by Rush et al. (1996), had the greatest number of participants (n=785) and demonstrated that there was less use of pharmacological analgesia, fewer operative deliveries and less perineal damage in the water immersion group, especially in primigravidas. Two studies (Rush, 1996 and Schorn, 1993) concluded that the rates of maternal and infant infections were not significant in the bathing group and two studies (Cammu, 1994, Rush, 1996) reported high levels of user satisfaction with the use of water immersion in labour. All studies suggested that this method should continue to be offered to women as a tool for relaxation, if desired. The reviewers' concluded with a recommendation that the routine use of water during labour should be used with care, and that labour in water should be limited to controlled trials or situations with ongoing audit of possible complications. The reviewers claimed that there is still not enough evidence to evaluate the use of water immersion during labour. They further stated that there is an urgent need to conduct a collaborative randomised controlled trial (Nikodem, 2003). It is particularly

hard to imagine that this would be possible now, with water immersion facilities becoming more readily available to women (Odent, 1990).

While the systematic review looked at the findings of three properly conducted randomised controlled trials (Schorn et al., 1993; Cammu et al., 1994 and Rush et al., 1996) their main findings were that no **statistically significant differences** between immersion and non immersion were detected (Nikodem, 2000). One needs to understand the place of statistical significance. This relates to the P value - the probability that any particular outcome would have arisen by chance. Standard scientific practice usually deems a P value of less than 1 in 20 (expressed as $P < 0.05$) as statistically significant and a P value of less than 1 in 100 ($P < 0.01$) as statistically highly significant. A result in the statistically significant range suggests that the authors should reject the null hypothesis (that is that there is no real difference between the two groups) (Greenhalgh, 1997). The hypothesis of the systematic review of randomised controlled trials of immersion in water in pregnancy, labour and birth, in the Cochrane Database of Systematic Reviews was stated as, *"we postulate that the use of water immersion during pregnancy, labour and birth will not influence any of the outcomes cited under types of outcome measures"* (Nikodem, 2000). Therefore the null hypothesis was accepted because either there was no difference between the groups or there were too few subjects to demonstrate a difference if it existed.

A more recent RCT of bathing during the first stage of labour versus no bathing, had as the primary objective, referrals of new-borns to the neonatal

intensive care unit (NICU). It found that there were no significant differences regarding the rate of referral to the NICU. Nor were there any differences in the rate of perineal trauma, operative delivery or postnatal stay in hospital. They concluded that there were no negative effects of bathing and further stated that women may bath during labour without jeopardising their own or their infant's wellbeing after birth (Ohlsson, Buchhave, Leandersson, Rydhstrom and Sjolin, 2001).

Another RCT, comparing the outcomes of 274 women, (Ekert, Turnball & MacLennan, (2001), had as their primary objective to measure pain relief and psychological outcomes for women who use water during labour. This study found that the use of pharmacological pain relief was similar for both the experimental and the control groups of women. There were no statistically significant differences for the outcome measures of induction or augmentation of labour, perineal trauma, length of labour or mode of delivery or frequency of fetal heart rate abnormalities. However, they did find that babies in the bath group required significantly more resuscitation. This is a surprising finding, especially given that there were no water births in this study nor was there any explanation offered by the researchers for this finding. This effect has not been demonstrated in past research. The conclusion of the researchers was that bathing in labour gives no clear benefit for women and may in fact be detrimental to the baby. These findings are divergent from the findings of the systematic review by Nikodem, (2000). These findings are yet to be incorporated into the Cochrane systematic review.

Of note in this RCT, Eckert, et al., (2001) used self-report questionnaires to determine the psychological outcomes for women who use water during labour. These questionnaires were sent on two occasions and women were asked to rate their perceptions of pain, expectations of the labour and birth and satisfaction with care and treatment allocation. The first survey was done at 24-48 hours post-partum while the second survey was posted out to women at 8-9 months post-birth and included an extra question related to postnatal depression. In the questionnaires, pain was measured using a vertical visual analogue scale where women were asked to rate pain on a scale of 1 - 10, 1 being no pain and 10 being excruciating pain. Satisfaction was measured using a Likert scale where opinions are ranked on a continuum using a numerical score from 1 - 5 or 7 with one end being ‘strongly agree’ and the other end being ‘strongly disagree’. In this study only ‘strongly agree’ answers were analysed. The researchers made the assumption that women responding to other categories experienced some problem with the care that they had received. I have reservations about the validity of these findings given the above mentioned assumptions. There are people who never circle the highest ranking on principle. By not analysing all the responses the assumptions made are likely to be invalid. They found that women in the routine care group rated their overall experience of childbirth more positively than women allocated to the bath group. This finding is not in keeping with findings from other research that has surveyed women's satisfaction.

The construction of patient satisfaction surveys is such that it forces respondents to express themselves in ways in which they may be unfamiliar

and therefore does not require independent thought. Measuring satisfaction, by means of quantitative methods such as survey or questionnaire will never be able to illicit an in-depth understanding of the knowledge, insight, feeling and belief of women about using water for labour and birth. Indeed Williams (1994), states that "many of the assumptions on which the utility of satisfaction surveys is based are currently unsubstantiated" (Williams, 1994, p. 515).

The results of the satisfaction surveys done in the aforementioned randomised controlled trials have added little to the body of knowledge of women's satisfaction with water immersion during labour and birth. It has also been suggested that women may ignore ‘hard’ data derived from quantitative methodologies in favour of their own life experiences, which may include stories told by others (Davidson & Tolich, 1999). For this reason researchers need to continue to explore water by employing other methodologies to find the 'truth'. There is a need to push for evidence from qualitative research to be given more weight in the traditional hierarchy of evidence. To gain a greater depth of understanding of women's attitudes and feelings, qualitative methods must be employed in the form of interviews, observation, story telling and focus groups.

Qualitative evidence

There is a scarcity of qualitative evidence on the use of water for labour and birth. I have found only one qualitative study that looked at women’s experiences of water in labour and it used a grounded theory approach. The researchers were following up on a major category, 'staying in control', taken

from a larger study. The study was set in the UK in a midwife-led maternity unit in a semi-rural general hospital, averaging 850 births per year and catering for low risk women. The findings of this study were that using water was seen as beneficial and perceived to have given the participants more control over the process of labour and birth. The women also valued the support of the midwife in decision-making (Hall and Holloway, 1998).

This chapter has provided the reader with an overview of the available literature on the use of water for labour and birth. The next chapter explores the processes used in this study to expose women's stories of their experience of using water for labour and birth.

Chapter 4.

Framework for this Research

This chapter explores the choice of methodology, the research design and the methods employed to gather and process the data. Choosing a methodology to fit the aims of the research has not been straightforward. I wanted the women's stories, and the meaning they make of the experience of using water for labour and birth, to stand alone, unaffected by attempts to analyse and pigeonhole the content. After reading through the stories I soon realized, however, that the volume of the texts (112 pages, 30,633 words) would require some analysis and interpretation. So I embarked on a journey to discover the most suitable means of doing this, whilst staying true to the desire to give women voice. It is the challenges or dilemmas from real-life that provide us, as researchers, with the questions that need to be answered. Accordingly, we plan our research around these issues (Crotty, 1998). The questions posed in this research are: 'what do women say about using water for labour and birth?' and 'what is the meaning that they make of the experience?' The impetus for this research comes from the knowledge that women's voices are largely ignored in the current literature. Therefore I needed a methodology that would illuminate the women's stories and meanings they make of their experience of using water for labour and birth.

Methodology, Method and Research Design

I chose a qualitative approach with the intention to hear and make a written record of women’s stories. Additionally, my intention was to explore the meaning the women make of their experience through a thematic analysis of

the transcripts of their stories. My main aim is to make a contribution to midwifery knowledge about the use of water for labour and birth, from the perspective of the women. My hope is that women and practitioners will read the stories of women's experiences alongside the literature arising from quantitative methods.

The description of my research process that follows will reveal how my methodology evolved out of the desire for women's voices to be heard. Along the way I also read widely in the area of narrative inquiry, which appeared to fit most closely with what I had in mind.

Narrative inquiry

Human beings tell stories and listen to stories. We use narratives to communicate and understand people and events. We think and dream in narrative. Narrative has been described as a basic mode of thought (Hardy, 1968, in Conle, 2000) and as a way of organising knowledge (Bruner, 1986, in Conle, 2000). All this happens at an individual, as well as, at a social level (Conle, 2000).

This statement had significance for me as I heard the women's stories of using water for labour and birth. It afforded me the opportunity to gain some insight into these women's lives. I was able to form a picture of the rich experiences that form the context within which their lives are lived. I could relate as a woman, midwife and mother to the stories they were telling. I could often think of a situation in my own life that was similar to aspects of the woman's story.

Being prompted by a story to think of something in your own life experience is described as resonance. One reacts to a story through ‘resonance’, that is, with a narrative of one’s own. A typical response may be, “That reminds me of… and the narrative segment of a lived experience follows” (Conle, 2000, p.53).

Story telling and the notion of resonance are a central part of what we do as midwives. Midwifery herstory abounds with oral traditions. For the early midwives (lay midwives or handywomen), knowledge about pregnancy, childbirth, anatomy, physiology and even pharmacology was passed along, and down, by telling stories. Young women learned to be midwives by accompanying their mother/midwife when she attended women in childbirth. They observed the practices, rituals, and traditions along with and listening to the stories. When discussing seventeenth century women, Bogdan says, "they had been learning about birth throughout their lives - in everyday exchanges of gossip and information that went along with the sharing of chores and tasks and duties that made up the day to day rhythm of…women's lives" (Bogdan, 1990, cited in Papps & Olsen, 1997, p. 8).

The stories told by those involved in the birthing process continued to reverberate amongst the female relatives, friends and neighbours, who have always traditionally been involved in the care of women during their labour and birth. These stories live on and are added to over time. This is how our own knowledge grows. In Elizabethan times a woman laboured surrounded by her 'gossips'. The word gossip is derived from 'god sibs' which is literally translated as 'sisters of God'. At the birth, these women had the combined

function of helping and supporting the woman in labour, caring for the house and witnessing the birth and baptism of the child. When a woman went into labour she immediately sent for her supporters and they would come from near and far, often staying for a considerable time. Men were excluded from the birth and the lying-in period afterwards, causing many to experience resentment. In time the male usage of the words 'god sib' gradually changed to become 'gossip' (Kitzinger, 1992).

I have observed midwives storytelling in a number of different surroundings, for instance at handover, in the morning-tea room, at education meetings, at peer review sessions, at conferences and so on. In fact in any place and time where midwives are gathered, the stories will flow. Today, students of midwifery who are studying in tertiary education institutions, still learn about midwifery by listening to the stories of experienced midwives and women, as well as by reading stories from the past and from research.

A Woman-centred Approach

I have started from the position of wanting to afford women the opportunity to talk about their experience of using water for labour and birth. Women, on the whole, are not provided the opportunity to talk openly and freely about their birth experience in order to debrief on what was good and what was not good for them. Potentially there is much value to the woman in being able to process what happened both as a means of understanding and accepting what is for many, an awesome experience.

The women's stories are central to the research. It is important that the narratives and the interpretations are true to what the women have said. For this reason a woman-centred approach to research was used. Research that honours a women-centred approach includes the following characteristics:

- the women's experiences are the major 'object' of investigation,
- the goal of inquiry is to see the world from the vantage point of a particular group of women and
- it is critical and activist in its efforts to improve the lot of women and all people (Campbell & Bunting, 1991, p.6).

According to Davidson & Tolich, 1999, "Feminist researchers stress a need to give women a 'voice' in order to reveal women's lives from their own perspective" (Davidson & Tolich, 1999, p. 67). It has also been suggested that women may ignore 'hard' data derived from quantitative methodologies in favour of their own life experiences, which may include stories told by others. This added weight to my choice of a qualitative approach using women's stories. Story telling is "an effective way of involving people in research, because it is not unusual for people to think that they have little to offer research projects and some people may feel intimidated by the thought of participating" (Roberts & Taylor, 1998, p.182). I can relate to this, as I question whether my opinion as a woman would have any relevance to the world in general. However, ask or prompt me to tell a story and it may be hard to get me to stop.

For this project, women responded to the invitation to tell me the story of their experience of using water for labour and birth. These women participated because they were able to see the benefits from telling their story, not only to me the researcher but also to anyone who may read the final report. From talking to women of all ages about birth, I recognise that for many women, being able to spend time reflecting on and remembering their experiences is both healing and clarifying and it locates positive emotions into their memory. This may be the first time that they have been afforded the opportunity to do so.

Research Design

This is a qualitative research project using story telling to gather data, and a thematic analysis of the stories to derive meaning of the women's experiences of using water for labour and birth. A woman-centred approach, which honours the women's experiences, informs the research.

Audio-taped unstructured interviews were used, which I prefer to call conversations. The following describes the process used to expose women's stories of their experiences of using water for labour and birth.

Participant recruitment and selection

For convenience, I wrote to midwives in the region where I practice who I know support the use of water for labour and birth, both within the hospital and at home (Appendix 1 - Letter to Midwives). In the letter to midwives I outlined the research project and asked them to identify women in their care who had

indicated on their care plans that they would like to use water for labour and/or birth, either at home or in the hospital during May – September 2001.

I aimed to make contact with between six to eight women with the intention that the first four women to birth, (who agreed to be interviewed), would be selected. This number was based entirely on the fact that this research project was limited in its scope as a two-paper thesis.

Inclusion criteria for women was: those women who planned to use water for labour and birth between May – September 2001, and who identified as New Zealand European/Pakeha. The information sheet (Appendix 6) asked the women to contact me directly if they wished to participate in the research project.

Initial contact with participants by telephone

At the first telephone contact, which was initiated by the women, I was able to talk more about the aims of the project and what would be required of them. This initial contact with me was deemed to be "consent to participate", however a formal consent was also signed prior to the conversations (Appendix 7).

The Women

Seven women contacted me expressing interest in taking part in the research. Of the seven women who contacted me, one primiparous woman underwent an induction of labour and did not use water and another, a multiparous woman

who had been planning a home birth was transferred to hospital because of meconium staining in the amniotic fluid and therefore did not use water. I had conversations with five women for the research and their pseudonyms are: Lily, Linda, Jane, Marion and Tanya. I have included a brief description of the women as an introduction to their stories that will follow in chapter 4

First visit with the participants to set the scene

I sought consent from each woman and her midwife for a visit soon after she had initially contacted me and before she had her baby. The purpose of this visit was for us to meet each other and for me to set the scene for the conversations. I was able to talk to the woman about my reasons for doing this study, to explain how I would go about it and what I would do with the stories.

This visit was important for several reasons. The midwifery model of care in which I practice supports continuity of care and caregiver in the development of a partnership. Time is needed to develop a trusting relationship between the midwife and the woman. I appreciate how important it is for women to know the people who are going to be involved with them during their labour, birth and postnatal care and for them to have the opportunity to meet those people before the event. While I was not intending to be a part of their birth or postnatal care, it was my intention to meet them very soon after the birth for our conversation to take place. This would be an intrusion into their early postnatal recovery time, breastfeeding and bonding.

I was aware that as a midwife researcher there might be a blurring of roles. This first visit would give me the opportunity to clarify my role. I needed to make it clear to the women that I would not be commenting on the care that she had received and that this was not a debriefing opportunity for them. As it was highly likely that I would know their midwife quite well, this was an important point to make. It also helped me to make the differentiation between me as the researcher and me as a midwife and to think of strategies for coping with situations that might arise where it became difficult to make the distinction. I had in place the contact number for the New Zealand College of Midwives (NZCOM) resolution committee, should the women have identified concerns about their care to me that would benefit from the resolution process. It was my intention to encourage the women to speak to their midwives about any issues that may be lingering, should this be the case. However, this need never arose in any of the conversations.

As I was to be a visitor in the woman's home shortly after the birth, I wanted to meet her at a time when the anxiety of meeting a new person would have less impact on her. This was good for us both. It gave me the opportunity to find her house and settle into a casual conversation over a cup of coffee without any other pressures. I then left it to the woman to telephone me when she had her baby and to arrange a suitable time for us to have our conversation about her experience.

Jane was the only woman that I did not have the opportunity to meet prior to the conversations. This was because she only heard about the research by

chance from her midwife after she had given birth. She was very keen to be a part of the research and rang me expressing interest in taking part. After discussion with my supervisor it was decided that I should meet with her and include her conversation.

Timing of the conversations in relation to the birth

In the research proposal I had stated that the conversations were to take place on about the second or third day after birth. The rationale for this was:

> Given that Raphael-Leff (1991) suggests that the optimum time for women to want to discuss their experience of giving birth appears to be two or three days after the event, the in-depth, unstructured interviews were conducted forty eight hours postpartum. This avoided possible transient feelings of elation and the labile emotions associated with the postnatal period (Hall and Holloway, 1998, p.32).

This seemed like a good starting point, however on speaking to the women at the initial meeting I decided to leave it to them to contact me when they felt ready. This is because I felt a little uncomfortable imposing on them so soon after the birth. As a midwife in practice, I am aware that during these first two to three days women often feel uncomfortable (from perineal trauma) and awkward (if learning to breastfeed for the first time). I wanted them to be comfortable when telling me their story. One woman, whom I had arranged to see in the morning called me to say she needed to sleep as they had a 'bad' night so we were able to negotiate a time later in the day. This meant that she was able to take control of the process and to focus on her needs and those of the baby, feeling less pressured to conform to any other person's timeframes.

Pilot Interview

As a means of practising my 'interviewing' skills, one of my clients offered to talk to me about her recent waterbirth. She was clear that her story would not be a part of the research project and that all the tapes and written material would be returned to her, which they were. The experience of doing this pilot interview was very valuable to us both. The woman was appreciative of having an audio-tape and written account of her birth story and I was able to practice transcribing from a tape. This was a long and drawn out procedure and I realised then just how difficult it was. It was difficult because I was attempting to transcribe the tape just using my hand held tape recorder and an earplug, instead of using professional transcribing equipment. It was hard to clearly hear what the woman was saying and I had to stop/start the tape frequently. Not helping this was the fact that I am strictly a two-finger typist, which made the whole process very slow. After this experience, I decided to use a professional transcribing service for the audio-taped interviews for this project. The transcriber was asked to sign a confidentiality agreement (Appendix 8).

After reading the pilot transcript I realised that my method of questioning and responding to the conversation was at times leading and that I was taking too great a part in the conversation. Listening to the tape and reading the transcript was very enlightening for me as a researcher and I was able to modify my approach. With the guidance of my supervisor I was able to reframe the way I asked questions and to develop an approach that reflected the words back to the woman that encouraged her to elaborate further. I found that I had been leading

the woman to say what I wanted to hear. At one point I gave what amounted to a lecture to her about some small point to which her response was, “Oh”. In my field notes I have noted, "I was giving her too much information. Lots of it lead from or was prompted by the literature I have read on the subject - I need to sort this out" (Field notes, 6/6/01).

Location of the meetings for the conversations

I arranged for the interviews to be done at the woman's own home, or wherever she chose, at a time that suited her and her baby. Taking into account the fact that the woman had recently given birth, it was important for her to be comfortable and to have her baby present so that bonding and breastfeeding were not interrupted. I encouraged and assisted the women to create a comfortable space for the conversations including an invitation to whanau/family and support people, as required/desired by the women.

All of the meetings were conducted in the women’s homes. All of the women had their babies present during the conversations and one woman (Lily) had her partner present. The partner contributed to the conversation and his comments has also been included in the narrative of Lily’s birth story.

The timing of the conversations

The time that I met with each of the women for our conversation ranged from four days to 1 month after the birth of the baby. As previously mentioned, I decided it was better to leave the decision of the timing of the conversations up to the women, when it was convenient for them and their babies, and I think

this worked well in the circumstances. All of the women had good recall of their births and the events surrounding them.

Length of the meetings

All of the conversations were completed within the ninety-minute time frame originally proposed, with the shortest being forty-five minutes and the longest eighty-five minutes. The audio-tape was stopped when the babies needed attention, when the phone rang, when we topped up our coffee or when we needed a toilet stop. During one woman's conversation, her mother arrived unexpectedly, so we stopped the tape and the woman had a conversation with her mother asking her if she minded coming back at a later time. After she left the tape was recommenced.

Unstructured Interviews

The rationale for unstructured interviews was found in the work of Davidson and Tolich, (1999), who assert that this is a more flexible, less formal approach that enables the respondent to shape the course the interview with some guidance from the interviewer.

Crotty (1996) discusses this approach to data collection and points out the 'phenomenologically oriented [nurse] researchers' are trying to ensure that the subjective character of the data is left intact and untainted. Watson says of this approach:

> The dialogue tends to be circular rather than linear; the descriptive questions employed flow from the course of the dialogue and not

> from a predetermined path. The interview is intended to yield a conversation, not a question/answer session (Watson, 1991, cited in Crotty, 1996, p. 21)

The process of obtaining the women's stories is interactive, like a conversation, with the woman telling me the story of her experience, with me as an active listener responding to seek clarification and by engaging in the dialogue.

The process used on the day of the conversations

On arrival at the woman's house it was usual for us to start by having a cup of coffee and a chat about how the woman was feeling and how the baby was doing. Then I set up my recording equipment in the place that we were to sit and proceeded to test the equipment to make sure that it was actually recording. We came to an agreement to how long the conversation would be and that she could ask me to turn off the tape at any time for any reason. Once everything was in place and the woman and her baby were settled, we started our conversation about her experience of using water for labour and birth.

With all of the women I started the conversation with a prompt question similar to "tell me the story of your labour and birth with (child's name)". Davidson and Tolich (1999) say this is a spoken equivalent to giving the woman a blank piece of paper and asking her to draw a picture, her picture. Initially, this felt a bit awkward and stilted, as we were aware of the tape machine recording us. Immediately prior to this we had just been having a conversation as one woman to another about anything and everything. However, we soon got into the swing of the conversation and this awkwardness left us, as we again just

became two women telling and listening to a story. My feeling was that all of the conversations went well.

As with any conversation, I responded to the story as it unfolded by asking further questions that would elicit a greater depth of understanding of a particular point. I reflected back to the woman what I thought she had said as a way of checking that my interpretation was correct and to enable her to expand further.

The stories were very rich and full of the details that form the context surrounding the period of time around their labour and birth. All of the contextual factors are an inexorable part of the story and need to be told and heard as part of the story.

To draw the conversations to a close, I asked each of the women to tell me what she would tell a friend about using water for labour and birth. This often prompted more thoughts on the subject, but mainly served as a method for summarising all that she had already talked about so far. Finally, before turning off the tape, I asked, “is there anything else you can think of?” With one woman, (Lily), we decided to recommence recording after we had turned the tape recorder off at what was mutually deemed to be the end of the conversation specifically for the research. Our spontaneous dialogue, while I was about to dismantle the equipment, contained some very relevant thoughts on her experience, so I asked whether I could start the tape again and she agreed.

Ethical Issues

There are five principles, which may be used to determine ethical conduct in social science research. They are:

- First, do no harm
- All participation needs to be voluntary
- Preserve the anonymity or confidentiality of participants
- Avoid deceit
- Analyse and report the data faithfully

(Davidson & Tolich, 1999, pp 376-377)

These are the guiding principles I have used in my research, along with the Code of Ethics and the Standards of Practice of the New Zealand College of Midwives (NZCOM) which guide me in my practice as a midwife. As I would not be able to the preserve the anonymity of the women, by the simple fact that I would be having conversations with them, I sought rather to protect the women's identity. To protect the identity of the participants, I asked the midwives to sign a confidentiality form (Appendix 5 - Letter to midwives) to request that they did not disclose their client's participation in the research project. The women were given the opportunity to use a pseudonym instead of their own name. Only I know the connection of the real name to the pseudonym and I have become so familiar with using the pseudonym that I do not think of the stories in the woman's actual name.

As I was approaching midwives in my own region of practice directly to seek participants it was clear that I would in most likelihood know them well. The

women of course were also highly likely to tell me who their midwife was. I undertook to protect the identity of the midwives in the project by not using their names or discussing with anyone else who the midwives of the participants were.

However, two of the participants have gifted me some photographs of their birth to use in the research report and the midwives are visible and identifiable in them. I have gained written consent from both the women and the midwives to use these photographs (Appendices 12 and 13). Both the women and the midwives understand fully that the completed reports will be held in the public domain.

Gaining ethical approval

I am guided by the ethical conduct of the Victoria University of Wellington. A research proposal was prepared and sent to the Wellington Regional Ethics Committee. This was approved on 18th May 2001 (Appendix 2). To support the inclusion of birth photographs in the thesis, I sent an amendment to my original ethics application to the ethics committee, with further consent forms for the women and midwives who are in the photographs. Approval to use the photographs was granted by the Wellington Regional Ethics Committee on 26th October 2001 (Appendix 3).

Recruiting women from own midwifery practice

I was clear about not approaching women from my own practice, as these women may feel restrained from talking openly, especially if they have had

any negative experiences. In the study by Hall and Holloway (1997, p.31), they also chose to exclude women for whom they had direct responsibility for "in an attempt to equalise the relationship".

After my pilot interview, as previously discussed, I had realised that it was not practical to interview women who I had cared for. While there was not any awkwardness, I did find myself always tempted to explain things to her in great detail. I learnt that I needed to separate my roles of researcher and midwife, to avoid this in my interviews with participants.

Recruiting women from cultures other than my own

I made the decision to only to seek women who identify as Pakeha/European as this is the cultural group with whom I identify. The reason for this is that Maori women's stories are unique to themselves and their culture. As a midwife, I work in a women-centred partnership with women and as such the principles are the same as those embodied in New Zealand's Treaty of Waitangi namely: partnership, protection and participation. My personal journey of discovery of the Maori culture has given me some understanding of the culture and the effects of colonisation and some insights into the significance of whanau, hapu, iwi and Te Reo.

My decision not to include Maori women in my research was not to exclude their contribution, but rather an attempt to be sensitive and respectful of the spiritual importance of Maori birthing. I do not think I can analyse Maori women's stories of using water for labour and birth, given that I am Pakeha, therefore I would not attempt to do so. The size of this research project (two-

paper thesis) prohibits me talking to more than four (or as it turned out, five) women. Maori women in general do use water for labour and birth and it would be a great contribution to Maori women's childbirthing to hear their stories. In the future, a joint project that honours Kaupapa Maori Research, that is: by, for and with Maori, could be done. Maori women best do the analysis of Maori women's stories.

Data Collection

The interviews were audio-tape recorded, and transcribed by a professional transcribing company. After receiving the transcriptions back from the service I listened through the audio-tapes while reading the transcripts to make sure that they were correct. There were only very minor changes that I needed to make.

To avoid confusion and for ease of handling I colour coded the audio-tapes, computer floppy disks, paper and the folders in which I stored the raw data for each participant.

The women were given copies of the transcription of their interviews. I encouraged them to alter or delete anything they wished. Two women did not contact me to make any changes, one phoned me and was delighted to have the transcript and did not wish to make changes. She commented that she felt the transcript, which in fact was her birth story was to be a valuable asset for her daughter in later years. Her own mother had died when she herself was quite young, so she had not had the opportunity to hear her own birth story. One

woman made many changes to her transcript, mainly ‘cosmetic’. She preferred her story to read well, rather than as it appeared in print.

Data Analysis

I have kept a notebook from the beginning of the project to record details of discussions, discoveries, important dates and times, contacts, articles, names and addresses. The notes have been useful to keep a track of decision points with my research along the way.

I have ended up with stories of five women’s experience of using water for labour and birth. Two of the women have gifted me some of their birth photographs for inclusion in the story. I have included their photographs because they also tell a story. I have embedded each photograph within passages of text where, at least for me, the picture further enhances the written word. If a picture paints a thousand words then these photographs, I believe, go a long way towards supporting women’s voices in the debate on the need, appropriateness or desire of water for women in labour and for birth.

Process for analysis and interpreting

At the very beginning of this project my, somewhat naïve, notion was to do no analysis at all. My desire was to "ensure that the subjective character of the data is left intact and untainted" (Crotty, 1996, p.20). However, I soon realised that the transcripts of the conversations contained a significant amount of dialogue that, while it adds to the context of the woman's experience of using water for labour and birth, contributed less to the overall understanding of the

meaning the women make of the experience. At this point I made a decision to write my own story of each woman's experience. I did this to condense the story by removing the parts of the conversation not directly related to the purpose of the story. This made the stories more manageable for thematic analysis and more accessible to the reader. My story is interspersed with each woman's own words to build the picture of the journey. I have used italics for the women's words. The retold stories were sent back to the women so they could check the accuracy of my interpretation. Again, only one woman made changes and these were again related to grammar and punctuation.

Thematic analysis of the women's stories

Having collated and analysed these women's stories I then embarked on the journey of making sense of the stories. It is only in retrospect that I have discovered a method of data analysis that best describes the process I have undertaken. The Giorgi-style method of (phenomenological) data analysis described as:

- initially listening to audiotapes and reading of transcripts to get a sense of the whole
- intuiting about, and reflecting on, each transcript
- identifying meaning units in each transcript
- regrouping and redescribing statements relevant to each meaning unit for each transcript
- intuiting about, and reflecting on, each meaning unit across all participants to uncover themes
- writing an 'exemplary narrative' to illustrate each variant theme

- validating (by participants and colleagues)
- synthesising statements.

(Crotty, 1996, p.22)

I created a core story from the women's narratives. I did this by reading through each story several times, using a highlighter pen to pick out the dialogue that I thought held some meaning for further exploration. I then wrote the story by describing the women and following the journey of her labour and birth, by describing what was happening. The stories were inclusive of large tracts of the woman's dialogue that were appropriate to the flow of the story. These narratives are included in this thesis in the following chapter - Five Women's Birth Stories. These narratives were returned to the woman for verification of accuracy. Two women rang me to confirm accuracy and were pleased with the stories. Tanya again chose to make changes to her dialogue in an attempt to improve the grammar. Two others did not respond and this was taken by me to imply approval. Attempts were made to contact these two women several times.

Over the summer I embarked on the process of identifying meaning units, as I now have come to think of them. This process involved reading and re-reading the transcripts. I used highlighter pens of different colours to mark passages or words that I thought were significant. This process involved identifying interesting data representing a theme, flagging entries worthy of inclusion in a thematic file. This was done for each of the five transcripts. Following this I spent time reflecting on the highlighted passages.

I then drew up a chart on which I wrote down all the highlighted areas from all five transcripts. Soon I was able to see patterns emerging from the data. I further grouped the data by looking for similarities and contrasts. The next phase required many hours of 'intuiting' and reflecting until I was able to determine that there were two main categories under which a variety of themes could be grouped. To intuit is to feel, have a feeling, get the impression, perceive, discern or be aware of. Intuiting occurs when the researcher remains open to the meanings attributed to the phenomenon by those who have experienced it (Davidson & Tolich, 1999).

The emergent categories and themes have again been checked by the women participants and agreement was reached that these were representative of the stories.

Issues of Rigour in Qualitative Research

Koch discusses the decision trail as a means of establishing the trustworthiness of qualitative research. Koch, in discussing the process of establishing trustworthiness, cites the work of Guba & Lincoln (1989) who describe the criteria as:

- credibility,
- transferability and
- dependability

(Koch, 1994, p.976)

Guba & Lincoln (1989) claim that a study is credible when it presents faithful descriptions and when co-researchers and readers confronted with the experience can recognise it. Credibility involves the researcher describing and interpreting their experience as researchers. Maintaining a journal "in which the content and the process of interactions are noted, including reactions to various events" (Koch, 1994, p. 977) can do this. A journal becomes the record of these relationships and provides material for reflection. Credibility can also be established by conferring with the participants themselves and asking them to read and discuss the interpretation derived from the analysis.

Transferability suggests that the researcher should provide sufficient contextual information to make similar judgements possible by others. Sandelowski, 1986, (cited in Koch, 1994) uses the notion of 'fittingness' to describe transferability.

Dependability describes the auditability of the research process. Sandelowski, (1996), states that a study and its findings are, auditable when another researcher can clearly follow the decision trail used by the investigator in the study. In addition, another researcher could arrive at the same or comparable but not contradictory conclusions given the researcher's data, perspective and situation.

The decision trail provides the means for the researcher to establish an audit trail. Leaving a decision trail entails discussing explicitly decisions taken about the theoretical, methodological and analytic choice throughout the study. Confirmability requires one to show the way in which interpretations have

been arrived at via the inquiry. Confirmability has been established, according to Guba & Lincoln, (1989) when credibility, transferability and dependability are achieved.

The decision trail described throughout this chapter shows how the credibility, transferability and dependability of the research is attained. The stories and narratives have been returned to the women on several occasions as a way of ensuring their credibility. Along with this, a journal was maintained to track the decisions, context and processes used in the research.

Transferability and dependability occur when another researcher arrives at the same or similar conclusion with the same material. This links with the narrative inquirers aim to create work that resonates with their readers, the aim being that the reader will be prompted to build on the story and seek more stories. I am sure that every person who reads the women's stories will come to a different conclusion about the meaning of the experience for each of the women. That is the beauty of the narrative approach. For what I take as significant in the story will be different to what the woman takes and you the reader takes. However, the story will prompt the reader to dwell on the stories that it revives in your own mind.

The next chapter contains the stories of Lily, Linda, Jane, Marion and Tanya along with my reflections. Direct quotes from the women are used and placed in italics to distinguish their words from my narrative.

Chapter 5.

Five Women's Stories of using water for labour and birth

This chapter contains the stories of the five women participants. They are presented as a core story, created by me from their transcripts and include direct quotes that further emphasise a particular point. I invite the reader to take whatever meaning they choose from the reading of each story. Each story is followed by my reflection on the story. I have explored the stories for the meaning women take from using water for their labour and birth by looking for similarities, contrasting aspects and recurring themes. Two major categories have emerged, along with several related subcategories. I have brought these themes to the attention of the reader in chapter 6.

Lily's Birth Story

"It was just a really beautiful, gentle, gentle way to bring a baby into the world".

Lily is 21 and her partner L is 26 and they've just moved to where they live now. L is an artist and a café worker and his parents are in another suburb in the same city. Lily has done quite a lot of nanny work and she's a lover of the sea. She always wanted to be a fisherman and has done a diving course - she is a dive master and she also is an artist. Lily lived in Australia for a while and most of her friends are over there**.**

This is Lily's first baby and she is due on the tenth of June. She and her partner have attended antenatal classes. She is quite into an alternative lifestyle. She says that her father is very into all the alternatives of lifestyle and particularly interested in the use of water.

When I visited her it was about 2 days after her due date. We discussed her pregnancy and what she wanted for her birth. Lily said that she wanted to have lots of space, as she felt that she would be walking around a lot. Water had played a big part of her life in the past. She did say that she had a great need to be near the water hence where they've gone to live. She recalls using the bath when she had chronic period pain. She wanted to use water while in labour but clearly stated that she didn't fancy the idea of birthing in the water.

It was a wonderful day when I visited Lily after her baby was born. There was a wild southerly gale furiously blowing cold rain outside. We sat in their cosy lounge room while she cuddled her baby and we waited for her partner who was taking time off work to be present at our conversation. They both talked and talked and talked, they had a lot to say, and were pleased for the opportunity to tell the story of the birth of their baby. During the conversation Lily's partner L contributed much to the story and I will include some of his comments in the narrative. Like many close couples Lily and L both tend to finish each other's sentences.

Lily's labour started late at night soon after her membranes spontaneously ruptured and by midnight she was having contractions about five minutes apart. She coped well with the pain that was mostly felt as backache by pacing around the house. *"…actually, I didn't want to sit down - I couldn't, didn't want to, wanted to keep walking, walked around a lot…"*

As the contractions became stronger Lily would go down onto her hands and knees or stand up against the wall while her partner was rubbing her back. He was unable to identify the acupressure points on her back, so they abandoned this for rubbing.

At 0130 Lily decided to make contact with her midwife to tell her that her labour had started. At this stage the contractions were,*"…just getting more and more and more intense, but all over the place still…"*

The midwife said to call her when the contractions were more regular. Lily felt that they were quite quickly becoming more intense and that she wanted to hop into the shower,

> *"…I wanted heat, I needed heat…so I hopped in the shower and had it on quite warmish and then every time a contraction would come I would turn it on really hot and turn around and brace myself against the wall and just have it my lower back really, really hot."*

L says that Lily was in the shower this way for about thirty minutes, but the bathroom became too steamy and Lily felt like she was not getting enough air, so she came out of the shower. At this time they decided to call the midwife again. The contractions were coming every two minutes now, lasting a good length of time and Lily felt *"…really ready, really ready to go"* to the hospital.

As Lily's partner cannot drive, they had organized a friend to drive their car to the hospital. Lily says that her car has some mechanical problems and recalls the trip as being more comical than stressful.

> *"My car is a bit funny, so I was giving him directions while I was doing this - we had a contraction before we got to the car, we must* (have) *had at least two or three while we were in the car and we had one just outside the hospital but before I walked in, so they were quite intense."*

When the midwife arrived at the hospital she immediately filled the bath and Lily jumped straight in. The baths at this unit are large deep corner spa baths without the jets. Lily's response to getting into the water was, *"It was really good, it felt nice to be totally surrounded by warmth…it* (was) *just bliss actually…it felt really, really, really wonderful, it relaxed me a lot, as soon as I got into the bath I was totally relaxed…"*

Lily felt that the contractions slowed down for a little while after she got into the bath, which she considers, was because she was completely relaxed. I asked Lily what she thought might be happening at this stage and she replied:

> *"Well I was a little worried that - it's alright because it's shorter* (the length of the contraction)*, you think, God! - you know that was really good, it was shorter, but you think in the long run that's not such a good thing because it means that my labour could go on for longer - I was a bit worried just because I have heard stories and you think- well if I go into that mindset then I can actually do it myself, so I just listened to my body and they came back pretty fast…"*

So she was able to go with the contractions and concentrate on progressing. Her partner L got into the bath with her and continued to put pressure on her back and support her in between contractions. During the contractions Lily would go onto her hands and knees and in between contractions she would turn over and just float, relaxing completely, at times almost falling asleep. However, because of the persistent backache plus the need to be upright Lily

felt that the water was not always deep enough and she would have preferred to stand up.

> *"It wasn't deep enough - I would have much preferred to almost be standing up in the water, like, I know that's a lot of water, but almost to the upper chest - like just below my… just so it covers at least half way up my back. I would have liked to have been surrounded by warmth in the water… "*

Lily talked a lot about how the water could have been better for her, including the temperature. She wanted it very hot and localised on her back during the contractions but cooler in between when she was relaxing. After about half an hour in the bath, and five hours since her labour started, Lily got out of the bath for a vaginal examination to check on her progress. Her midwife thought she was 'getting close' and Lily wanted to know how far away she was from being fully dilated. The vaginal examination (VE) revealed that her cervix was dilated to three centimetres. This news was devastating for Lily, who felt she had been doing so well, *"…that was mental blow…I just couldn't imagine going on for hours"*.

Like many women who find out the dilatation after a VE, Lily felt shattered. She could not imagine going on for more hours; she did not know where she would get the strength to go on. At this time she lost some of her equilibrium and control. Her midwife asked her to make a decision about pain relief, specifically an epidural. Lily had said that she did not want to use pharmacological pain relief, however she says,*" …I really didn't want to, I was*

just so tired, I wanted to go to sleep, I wanted a break and I just couldn't imagine going through that every two minutes for another twelve hours…"

The anaesthetist was called. During the time they waited for the doctor to arrive Lily recalls being very restless and unable to find comfort anywhere. She went back into the bath but it was not hot enough, preferring to stand up, she went into the shower. *"I was roaring like a lion, I had to let it out…I would turn and brace against the wall and crank up the heat and just roar it out with all this water running down me…"*

Lily's reaction to the insertion of the epidural is very strong and very illuminating.

> *"…and they said, you have to come and sit on this bed and I did not want to do that - I almost just didn't want to go through the epidural because I had to sit on the bed through a contraction, I just said, 'no way, there's just no way'…I just clenched my fists and roared and roared and roared…"*

While the doctor was inserting the intravenous drip Lily felt like she wanted to go to the toilet. She was feeling bowel pressure and started grunting at the peak of her contractions. The anaesthetist suggested to the midwife that she perform another VE as it sounded like Lily was pushing. This examination showed the cervix to be now nine centimetres dilated. So within an hour she had gone from three to nine centimetres. *"I was so happy actually, I remember just going 'oh thank God, thank God', and you know then I didn't have to go through with this epidural because I know that in my mind I didn't want to…"*

Lily went to sit on the toilet and started pushing. She had about three contractions during which she pushed. She recalls being more onto it. After the third push, she put her hand down and was able to feel the baby's head. Her midwife suggested that she get off the toilet and back into the bath. In the bath Lily was on her knees with her legs quite wide apart and says that it felt great. *"I can remember just thinking, this is great, my baby's coming, I can feel the head…"* The baby was born in the water after three more contractions and before she picked her baby up Lily recalls:

> *"I could see her under the water…so I picked her up and it was so quiet and it was so gentle…and she opened her eyes straight away and just looked at us, just looked at me and just, I couldn't believe it…no crying or nothing. It was perfect".*

Lily and L sat in the bath holding their daughter and looking at her. The baby was born at seven a.m. A seven-hour labour, three and a half hours after coming to the hospital and two hours after the first VE revealed that she was three centimetres dilated. The placenta was born about 20 minutes later, physiologically. Lily got out of the bath and went to her bed where L was holding the baby. They gave the baby to Lily and they had a big cuddle. Lily put the baby onto the breast and she sucked straight away, then fell asleep.

I asked Lily what she thought the effects on the baby were from being born in water. Both Lily and L's responses are described:

> *"I think - I just think it's an experience for the baby to come into the world underwater in that way that she was and I couldn't imagine anything more right really, it just felt so right and it felt really - just so gentle, it's a really gentle experience because it's so violent, these contractions are so violent, the labour is so violent all the way through and I remember thinking through them 'my poor baby' you know, coming out into the world this way, what an awful way, why does it have to be so hard for you and you know, cause I remember you don't forget about the baby through all that, and just thinking well at the very end I was very surprised because I remember when I was lying there, sitting there when she was feeding or something and just thinking we had a waterbirth and it was so quick and it was perfect in every way".*

Lily's partner L says of the birth, "I was thinking of the stereotypical TV movie scene where the baby comes out and starts screaming straight away and the bright lights and then I was just taken aback, you know, I was half in the water, the water was warm and the lights were dimmed and she didn't cry, she came to the surface and just opened her eyes."

Water had played a significant part in Lily's labour and birth. Firstly the time spent in the shower while she was still at home, where she wanted to stand, braced against the wall and sometimes dropping to her hands and knees. Having a lot of back pain meant that she wanted massage or pressure and heat on her back during the contractions. At the hospital she used the bath and was able to relax. However it was back into the shower again while she waited for an epidural to be inserted. She found she needed to be upright and needed the localised heat of the shower nozzle on her back during contractions, while in between she cooled the water down a bit. When Lily started pushing, she

jumped back into the bath and birthed her baby under water. I asked Lily what she would tell a friend about her experience of using water for labour and birth. She said:

> *"I just think it's an excellent way to get through your labouring if it's like what mine was, which was quite hard and fast with back pain and stuff like that - it didn't come gently…hopping in the shower…when it gets really hard, with the localised heat and…just the water being around you as well, I mean it also gives you something else…I think definitely a shower is a brilliant, brilliant thing for contractions, if there's such a thing as a bath that's really high that you can almost…I would have liked to able stand up".*

Of the bath Lily says that she did not find the water deep enough especially when she was on her hands and knees during the contractions. The water did not cover her back and she needed localised heat on her back during a contraction. However, she said that when she was in the bath what she had enjoyed the most was being able to relax between the contractions by just sitting, floating and feeling the warmth all around her. Being able to move freely in the bath water was a bonus.

Lily and her partner and I discussed the reactions of others to her birth in the water. L's response was " it seemed to me that people do it naturally in the air, why would you need water, why would you have to do it? " L questioned whether it was 'natural' for humans to birth in the water, but says " … it's just common sense, it's more relaxing, I hate to say natural, but common sense, it

was relaxing, it looked relaxing." Lily's father, who she describes as being 'quite a spiritual person' and an advocate, thought that it was great that Lily had used the water,

> *"I think he knows the qualities of being around water and being in it and you know that the baby has for all this time been encompassed with this liquid…that it's a normal thing to do…I come from such a natural background…a holistic background and not because it's the new age trendy thing, because that's the way we can live our lives and it's quite normal, you know you don't have to have all these unnecessary hospital interventions…just because they are available- you don't have to have them…*"

Lily's story ends with her saying that next time she would consider having her baby at home with a bigger birthing pool and good support.

My reflections on Lily's story

Lily is a powerful woman, which is reflected in the use of the "lion roaring" language/metaphor and her behaviour in labour of actually roaring. What was that roaring all about? It conjures up images of strength, power and control. Lions usually roar in the hours between dusk and early morning, and they roar for several reasons. The first is to stay in touch with companions from whom they have temporarily separated, and the second is to advertise their location and strength to rivals. They roar to let other lions know that there is danger nearby, and they roar if they are in trouble or need help. Roaring also shows their dominance over another lion linking the members of a pride, as well as strengthening their claim to territory and deterring possible trespassing by neighbouring prides. The sound can be produced when the lion is lying on the

ground, but most often in a standing position. Its head lowered and back arched the face not relaxed but taut, the neck stretched forward, with the muscles of the throat tight, eyes usually open, mouth only partly ajar and the nose only slightly wrinkled. The entire body is taut with the abdominal muscles rapidly tightened and contracted to exhale to air required to produce the roar. A lioness, disturbed or threatened while preparing to give birth, will either birth rapidly or switch off her labour and move to a safer place. I wonder if Lily's roaring was signifying that she was threatened. The speed with which she dilated during this time while she was roaring may well be described as the fetal ejection response described by Odent, (1990). This is the vision I have of Lily in that hour while she waits for the epidural.

Lily was very focused on her baby and how she could make the birth less violent and gentler for the baby. She saw the non-interventionist natural/holistic birth as the way we can live our lives and she used water to achieve it. The way she did this was to be surrounded by the warmth of water, both in the pool and shower. How does she do this? By almost constant contact with water and by cranking up the heat when she needed to during contractions. This provides us with the imagery of Lily and her baby being encompassed by liquid warmth.

Linda repeats the notion of all-encompassing warmth in the following story.

Linda's Birth Story

"It was almost like being in a waterbed, I guess is a good way of explaining it – like on a cold night when you get into a waterbed or an electric blanket…and it's warm and it sort of like goes through you and warms you up. That's what it was like sitting in that bath."

Linda is having her first baby. She works in customer services and she lives on her own, most of her family and friends are overseas. Linda's sister lives nearby and she is due to have her third baby any day, in fact she was 10 days overdue when Linda and I first met. Linda was getting a lot of support from her sister. Linda had attended some antenatal classes but she had felt a bit uncomfortable being at these without her partner, it seemed that everybody else was there with a partner.

During our initial visit Linda had been clear about not using an epidural or drugs in her labour and birth, although she talked about using gas and she mentioned that she wanted to use water, *"I didn't want to use drugs if I could help it, but then I'm such a wuss when it comes to pain".*

Linda's midwife had supported her to use other options, such as water. She had a friend come up from (another NZ City), to be her support person during the labour and birth. Linda's baby was nine days old when we had our conversation

about her labour and birth using water. Her son sat on the chair with Linda as we chatted and he eventually dozed off to sleep.

Linda said she did not realise she was in labour late on a Saturday night, *"…I actually thought I was constipated, I didn't realise I was in labour, so I was sort of crawling around on the floor to try and go to the toilet"*.

Her friend rang the midwife thinking that something was wrong and the midwife asked them to come to the hospital to be checked. Even then Linda did not think she was in labour, she had thought labour would be much worse than what she was feeling.

At the hospital the midwife did a vaginal examination and discovered that Linda's cervix was six centimetres dilated. I asked her how she felt about that and she said, *"Scared, I was very scared, very nervous."* The midwife ran the bath and Linda hopped straight in. The baths are quite deep and allow for freedom of movement. Linda stretched out and said it felt wonderful:

> *"We were going through contractions and I was extremely nervous, very nervous. But once I got into the bath I sort of relaxed, you know, the heat of the water and so forth, that was really good to relax and let it all happen. Yeah, it was almost like-soothing, sort of thing, I mean, I was still nervous and I was still scared but it was nice and relaxing, it was sort of like the warmth of the water just made you relax, whereas when I was on the bed when she was first checking me out I was sort of really tense. But once I hit the water-whether it was the warmth-I think it was a combination of the water and S* (the midwife)*"*.

The atmosphere in the room at the hospital, especially the bed, played a significant role in how Linda felt about her labour and birth. She talked a lot about this and the role of her midwife, in whom she had absolute faith and trust. Linda's thoughts about the bed and the associations that it conjured up for her are interesting.

> *"…the hospital bed, I think it's the bed more than anything that puts people off…because it looks like a hospital bed, it's so cold and impersonal. Yeah, I didn't want to be on the bed, I didn't like the bed, it felt sort of hard and like I was in hospital for another reason than giving birth, it was very impersonal, it was cold…"*

The bath however provided Linda with the opposite effect.

> *"…when we were in the bath and that, it's like you weren't actually in the hospital, you could have been at home, you could have been anywhere…you felt like you could have been at home just having a bath, sort of relaxing…"*

Linda felt that even though she was in a hospital, the room she was in did not feel like a hospital room and wasn't so clinical. They had dimmed the lights and had some fragrant oils in the bath and she felt very safe and secluded and almost like she was at home.

Linda was in the bath, about an hour and a half later, when her baby was born. During this time her midwife used a container to scoop up water and run it down over her back. Linda found this to be soothing and really nice. She

appreciated the warmth on her back. Her friend was pacing back and forth and taking photographs some of which Linda has kindly gifted to me for this story. I asked Linda to tell me about the birth:

> *"His actual birth was like - once his head started crowning and stuff, it was - that I got to the stage where I was absolutely…, I want it out, that was it, no more, I didn't want to do this anymore, I'm scared, it was like - for want of a better word - shitting pumpkins - and because I'd never had a child before I didn't know what to expect and I was absolutely terrified. I think once it all started and then I thought 'Oh God' I can't do this and then just pushed him out and S said he was just laying there in the water just kicking his feet around and she said he was very relaxed and he was quite happy, I think it was a couple of seconds before he started crying."*

Linda's baby arrived from behind her as she was kneeling over the side of the bath. However, she was not quite ready to hold him straightaway, as she was too stunned from the birth. When she was ready, she turned around and held him to her breast.

Linda described her son as being quite happy once he was in her arms and that he was very white and waxy, not crying and , *"…he was just staring up at me with little wee big eyes."* They stayed in the bath for a while as the water was still warm and got to know one another. The baby was *"…floating around in the water kicking his little feet around…"*

Whether or to not to birth the placenta in the bath and how to estimate blood loss are two factors that are often discussed by water birth detractors. Because Linda has given me a photo of both I have included these in her story. I asked her whether the placenta was born while she was in the water. *"Yeah, that was strange, I think cause I didn't quite know what to expect…like people had told me it was like giving birth again and that just sort of came away quite easily".*

It took about five minutes to be born physiologically. I asked Linda about the blood loss. She said there was a lot of bleeding and then qualified this estimate by saying, *"Yeah, to me it looked like I'd had a bath in blood, but I don't think it was quite as bad as what it looked".*

Photo 3. Linda: Birth of placenta. 2001 Source: Linda

I asked Linda what she thought the water did for her during her labour and birth. She said:

> *"I think the water itself relaxed me. If I had been on the bed I would have been stiff and probably would have been a lot harder because I wouldn't have been as relaxed as what I was in the water - the water itself…it was really soothing and relaxing."*

Linda describes getting into the bath in labour like getting into a waterbed on a cold night. She says the warmth goes through you and warms you up. I asked her what effect did she think labour and birth in water had on the baby, if any. She says,

> *"Well I think T's pretty good, I mean T is a pretty easy baby…he's quite a cruisy casual child. Yeah I'm very lucky, he's very…* (He) *squawks, but not all the time you know, whereas I think because he had such a relaxed entrance into the world he's almost like a relaxed child…"*

I have heard women talking about how relaxed babies are who are born in water or whose mothers have used water for labour or birth, so I asked Linda whether she thought birthing in water made a difference to the baby:

> *"Well, I mean it must have some effect to go from fluid onto a bed, like hit cold air straight away…it can't be great for them, whereas in the water he can just sort of float around and kick his feet about…and he wasn't in a hurry to do anything, you know, no one was forcing him to - or whisking him away or whatever, you know he was quite happy just to lay there…"*

Linda goes on to compare her baby with her sister's new-born who is a week older.

> *"…so he(T) had a very relaxed sort of entrance into the world so yeah, I mean, I think it's effected him, it's made him a more sort of relaxed sort of child, whereas his cousin B, who wasn't born in water - I mean, he's not as relaxed as what T seems to be, he tends to squawk a bit more ….it's quite strange - I mean he's still a good kid but he just doesn't seem to be as relaxed as what T is…"*

Linda and I talked about the difference between her sister's birth a week before and I asked her what her friend had thought of the birth, plus what Linda might tell a friend who asked her about her labour and birth using water. Linda's friend and labour support person, who had not been present at a birth before, said that although she was overwhelmed by the intensity of labour she thought that Linda looked almost happy and relaxed sitting in the water. She was surprised that Linda wasn't yelling and screaming more, which is what she had expected.

Linda's sister had used the bath during her labour but had got out prior to the birth and gone back onto the bed. She had found the bed to be very impersonal and she had not felt comfortable. Later she had told Linda that she wished she had stayed in the bath. Linda felt that her sister was probably scared of staying in the water because she had not known what was going to happen to the baby or what effect being born in water would have on the baby.

At the end of our conversation Linda said, *"It was a good experience, I think next time I'll have a home water birth."*

My reflections on Linda's story

The representation of the all-encompassing warmth provided by an electric blanket or a waterbed invokes for the reader a powerful feeling and image of comfort, soothing, relaxation and safety.

I am also drawn to the dramatic disparity between the bed and the bath in Linda's story. She describes the cold and impersonal bed as being linked to illness or sickness, which hints at being in the hospital for some other reason than giving birth. Linda views birth as a normal everyday occurrence for millions of women around the world and she believes in her ability to birth without intervention. In contrast, the bath provides all-encompassing warmth that is soothing and fosters relaxation, making her feel more like she is at home and simply relaxing in a bath. Linda relates to the bed as providing the medium for unpleasant interventions to occur, i.e. the vaginal examination. The delivery bed, high, narrow and often placed in a central position in the room tends to suggests that the woman should sit or lie down and behave in a way that is convenient for the requirements of caregivers (Lepori, 1994). Whereas the bath, in a different space from the room that contains the delivery bed, provides flexibility to birthing by inviting the woman to enter the water in order to relax in the environment most of us would perceive as private.

Linda described herself as one who could not cope very well with pain and yet despite this she was determined to avoid all interventions in her birth process. She was clear about not using drugs in labour, especially epidural anaesthesia. The fact that she achieved this is testament to her strength and her self-belief. It

also illuminates the strength of the relationship or partnership she has with her midwife. Linda had no partner for support and had not attended antenatal classes because she felt out of place as a single parent. She told me she had not read anything about using water for labour and birth, although she had seen a water birth on a television documentary. The relationship she had with her midwife is based on a partnership model of mutual trust and respect. Philosophically, her midwife supported physiological birth by practising minimal intervention in the birth process. As her main birth support, Linda knew that her midwife would help her to achieve her goals. Her midwife suggested to her that water would promote her ability to achieve a birth without intervention. Linda trusted her midwife implicitly. Despite the fact that she was scared and nervous on her arrival at the hospital she entered the bath and there she remained until she gave birth. She was still nervous and scared, but the water and the presence of her midwife, enabled her to relax and achieve a birth that required no intervention.

Linda also highlights what she perceives as the benefits to the baby from his easy transition to life outside the womb. She describes her son as easy and calm. She contrasts him with his cousin, born a week before, but not in water. She remains convinced that water makes a difference in the behaviour of the baby.

Jane's Birth Story

"She's come into this world, that's the first thing she's experienced and she was happy when she was born. She just loves water now…baths and even in the shower…"

The following story by Jane also alludes to the effect to the baby of being born in water. Jane and her partner W were due to have their first baby around the beginning of June. They live in their own home on the outskirts of the city. I had not met Jane before she had her baby, as I had originally planned to do with all my participants. Her midwife, who knew about my research project, put her in touch with me and she called me when her baby E was nearly three weeks old. She was very keen to tell me about her birth experience using the water. She had always thought that she would use water during her labour but had not seriously considered birthing in the water. However, once in the water she did not want to get out.

Jane told me that water played an important part in her life,*"…I'd done a lot of swimming actually, right up to the final weeks with being pregnant and I think that was just great, being in the water and just feeling normal".*

She usually went swimming twice a week and remarked about the feeling of weightlessness that comes with being in water, this being particularly pleasant when heavily pregnant.

As chance would have it, I had been to this house before when, a few years earlier, I had cared for the woman who had lived there previously. The house was memorable because of the large number of steps down to it. Wellington's geography means that many houses have access requiring visitors to either go up or go down a considerable number of steps. I have often mused at the difficulties that this poses to the women once they have their babies.

Jane had planned a hospital birth and when her membranes ruptured, intensifying the contractions, she said, *"I had to try and make it up those stairs and that was a bit of a drama in the middle of contractions"*. Her contractions were coming about every two minutes at this time and she had to stop each time another contraction started. Consequently, it took a while to make it to the top, to the waiting car.

When she was seven days past her due date, Jane became *"very impatient"* and *"just wanted it to happen"*. So she and her partner decided to try a well-known 'old wives tale' remedy of eating a curry. They went of to a local Indian restaurant for dinner. During dinner Jane felt her first contraction. They went home after the dinner and her contractions gradually became stronger. By 9 p.m. Jane felt like she wanted to be in the shower so that the warm water was running onto her sore back, *"We tried the heat pack in the early stages, but I didn't find that particularly useful"*.

W was able to apply acupressure to her sore back while she was in the shower. Jane said she found the shower at home in the early stages of labour to be *"quite refreshing"* and that it made her feel a lot better, even though it did not really take the edge off the pain.

Jane and W had been in contact with their midwife by phone earlier in the evening when the contractions had started, they had all agreed that it was probably only the beginning of labour. Many woman will try to stay at home as long as possible before going to the hospital. *"When I was at home I was moving around a lot and I was standing up and pushing against the wall…crouched on the floor."* However, by 9 p.m. the contractions became a lot stronger so they called the midwife to come around to their house and check on Jane's progress.

The midwife performed an internal examination and found that Jane's cervix had dilated 6 - 7 cms. They were all very surprised at this finding. I commented to Jane that it probably was not the curry that had got her going she was really on the way before that. She remembered that, 3 days before going into labour, she had an episode of strong Braxton Hicks contractions and had gone to the hospital for the cardiotocograph (CTG) to be put on for a while, to monitor the baby. Jane was delighted to be so far along even though she had not been in labour for very long. Like many women, Jane had wondered if she had the strength and stamina to endure the contractions over a long period of time. She said, *"you know it's going to be painful and it's only just started, imagine what it's going to be like"*, (if it goes on for a long time).

Jane was very anxious to get to the hospital. The contractions had increased in intensity when her membranes ruptured spontaneously while she was dressing ready for the trip. The trip to the hospital was a bit of a drama. Jane said, "*I felt out of control when I didn't know if we were going to get there".*

Many women talk about feeling out of control and not being able to cope as well once they make the decision to move during labour. It seems to unbalance their equilibrium and can take an hour or more for them to regain control. The combination of knowing that she was in advanced labour, with ruptured membranes, with her contractions coming stronger and closer, the climb up the steps and the trip to the hospital, all had a destabilizing effect on Jane. She describes how she felt when she arrived at the hospital doors:

> *"I had…because my waters had broken while I was here* (at home) *so I'd taken off my pants and had a towel between my legs and had my bath robe on, so I felt sort of completely exposed and horrible".*

Once they arrived at the hospital, where the birthing room was made ready and her midwife, who had arrived ahead of them, was filling the pool. Jane said she felt immediate relief and was comforted to *"know that everything was ready, everything was there."* She hopped straight into the pool and was able to feel her body relax immediately which made it easier for her to concentrate on her contractions.

Jane and her partner had attended antenatal classes in the last trimester. These classes, which are organized by childbirth educators, cover childbirth education and parenting preparation and breastfeeding. She was well read and showed me some of the books she had been reading. Her knowledge of the options for pain relief and many of the complementary practices available was extensive. She was very clear about not wanting any injected drugs and *"had always said that I'd have an epidural if I felt I couldn't bear the pain, so that was sort of a final option in pain relief"*.

They had tried heat packs in the early stages which they had not found to be particularly useful and had used the gas (nitrous oxide and oxygen) once she was in the pool.

Many women, who made conscious decisions to avoid alcohol, smoking and any medicines, that may potentially harm the developing baby, throughout their pregnancies, also make the decision to avoid all pharmacological pain relief during labour and have investigated other methods available. Women are generally more aware of the need to remain healthy, eat well, and to exercise regularly. With easy access to the Internet and other sources of information about pregnancy, women are more knowledgeable about the effects and side effects of epidural and other birth interventions. Some women will search for care providers that actively support minimal intervention and respect the normal processes of birth.

Once in the pool, Jane used the gas. *"I think the gas helped me with my breathing, just having something to concentrate on and breathing deeply".*

The combination of being 'safely' at the hospital, in the warmth of the pool and using the gas, allowed Jane to relax and work with her contractions. But also important to her equilibrium was the ambience of the birthing room, which she described as great and nice. It was *"nicely lit…it was quite a subtle light and nice and warm and big enough"* for all her support people. There was her midwife, the backup midwife and a student midwife as well as her partner present in the room.

These birthing rooms are a reasonably new addition to this birthing facility. The work of Italian architect Bianca Lepori had inspired the design. Bianca Lepori specializes in the design of women's birthing spaces and uses a combination of different textures, shapes, tones, colours, supporting structures and water immersion facilities. Importantly, the bed is not the focus of the room, rather it is a low platform set away from the centre of the room and available if the woman chooses to use it. Jane recalls that, despite not having time to try them, that she had *"…all the options there…if I didn't want to stay in the water,…I had all the bars and things…".* Once in the pool she sat with her legs out in front of her and was *"just sort of leaning on the side".* The size of the pool and the depth allows the women to adopt any position they choose and have freedom and ease of movement.

Jane rapidly got to the stage where she was ready to push. Her midwives gently guided her in this process by talking her through it and suggesting a change in her leg position. She recalls being tense at this time but once she opened and relaxed her legs more, she was pushing effectively. *"I felt in a position that she could come out more naturally. It was just so quick, her head came out and it had a little bit of rest and then another few pushes and then she was born…"*

It had only taken an hour after they got to the hospital for the baby to be born. *"They lifted her through the water and sat her on my tummy and then we got to see it was a little girl and it was great"*.

The baby had her eyes open and Jane remembers that she was very relaxed. *"She just felt quite relaxed, I don't think she was crying, she just lay there…"*

Jane was still in the pool when the placenta was born and that happened soon after the birth of the baby. As the water was quite mucky, she was assisted to get out of the pool by one of the midwives, while the other midwife was checking the baby. *"Yeah, and then they wrapped me in towels and dried me off and then I hopped on the bed and then they gave me E to have a little cuddle with and a breastfeed"*.

The baby slept for about six hours after this, while Jane and W kept a close eye on her. Jane had a very small perineal tear, which did not require suturing and so after a short rest and something to eat they were all transferred upstairs to the postnatal ward. Although Jane says she would like to have stayed in the

birthing rooms. Her partner was allowed to stay overnight with her and the baby and the next day they were discharged home. Her midwife, who visited daily to encourage and advise as needed, provided follow-up care.

As with all of my participants, I asked Jane to tell me what she would tell a friend about her experience of using water for her labour and birth. This is what she said:

> *"I'd tell her I found it fantastic…cause I said to C* (the midwife) *that I'd like to try water as a pain relief and I hadn't really seriously thought about giving birth in the water and I'd always thought I'd give birth in a crouched position or something but I always had an open mind about the whole thing and then when I was there I just didn't want to get out and giving birth in that reclined position is quite surprising to me as well, I'd always imagined that I'd be squatting…"*

The baby E was sitting on Jane's lap during our conversation. She had a few sucks at the breast, but was mainly content to just sit and listen. I commented to Jane that she appeared quite relaxed. Jane said she was a happy baby, breastfeeding well and slept well and they were enjoying her very much. *"She just loves the water now, just baths and even in the shower, if she's upset or anything. She's 'happy as Larry' in water, she just loves it, it calms her down a lot".*

I asked her if she attributed this to her birth in water and Jane replied, *"just that you know, she's come into this world, that's the first thing she's experienced*

and she was happy when she was born and then just - it must just feel like being back inside in the warmth".

When I visited Jane again after she had a chance to read the transcript of our conversation, she was happy and healthy and enjoying motherhood. The baby E was growing well and a very contented breastfed baby. Jane enjoyed being able to read her birth story and intended to keep it for the baby when she grew up a bit. There was nothing she wanted to change in the transcript and commented that she would definitely use the water again for her next birth.

My reflections on Jane's story

The sensations of being immersed in water are very familiar to Jane, who is a regular swimmer. To be immersed in warm water during labour seemed a logical thing for Jane to do in her attempt to give birth 'normally'. It was always Jane's intention to give birth at the hospital, but when her labour progressed rapidly she found herself becoming anxious and out of control. She describes the trip to hospital as a drama, despite the fact that the hospital is only ten minutes down the road. In contrast to this out of control and anxious time, she recalls being very relieved when she walked into the labour room and the bath was ready for her to get straight into. She was immediately more relaxed and focused on breathing calmly through the contractions.

Jane also alludes to the all encompassing warmth of the water in the birth pool when she compares how she felt on arrival at the hospital and then after she gets into the pool. She reports being a very modest person and felt very exposed and horrible on arrival at the hospital, dressed only in her bathrobe and

with a towel between her legs, as she had ruptured her membranes. Once in the birthing room with the pool however, she had a sense of safety. Despite her nakedness in the pool, she was able to relax with the warmth all around her and the sense that her privacy would not be invaded.

Jane talks about the easy transition to life for the baby by being born into water. She comments that her baby is very relaxed and continues to love being in water. Jane attributes this to her water birth.

Marion's Birth Story

“I think a lot of it was the warm, like I needed to be really warm, so I had that whole-enclosed warmth – it was my space”

Marion continues with the notion of privacy and the birth pool as providing a safe space for a woman in labour in this next story.

Marion and her partner were having their first baby and had planned a home birth. She had planned to use water for the labour and birth, so had hired a birthing pool and califont, which is a gas water heater that supplies continuous hot water, from the Home Birth Association. Marion's sister and friends had all given birth at home so Marion has a strong home birth culture behind her. She lives with her partner and has recently finished studying for a Masters degree in hydrology. Water has always played a part in her life. As a child her mother encouraged her to take a bath whenever she had pain, such as colic or period pain. It seemed logical to Marion that she would get into a bath or pool of warm water when in labour.

Marion's labour started eight days before her due date. The last few birth preparations needed to be done and she and P, her partner, were planning to do these on his next days off. Sadly, Marion's grandfather had just died and so

there were a lot of preparations going on for the funeral. Marion's house was also undergoing some renovations to the kitchen and bathroom areas.

Marion slept until early afternoon on the day she started, in what we now realise, was latent labour. She walked around to the shops to pick up her mail and was experiencing a crampy tummy. She did not give it much thought, as her sister, whose baby was about six months old, had said that this was what she had at least a week before the birth. Marion just thought that the baby had moved position. She realized that there were still many things to be done around the house but did not have the motivation to do anything. So her mother and aunt came around to help her in the afternoon.

Marion was cooking dinner and putting water into ice trays (to be used later for her labour) when P arrived home at about six p.m. Marion told P she wanted to make the birth mats, but he was tired and wanted to defer this task, not knowing that Marion was thinking that her labour was starting. Marion however insisted that they do it that evening. She continued to have 'niggles' all evening and they decided to go to bed early, after Marion had a warm bath. *"I decided I was going to have a bath because it would just relax me, that would settle it all down and I'd be able to sleep and I'd be fine and it would all go away"*.

Things did settle and Marion spoke to her sister on the phone whose advice was to relax, and to just run with it and think of it as a good time to practice some acupressure points.

> *"So we took off to bed…I was in bed with my wheat pack and I had my wheat pack across the front of my tummy and P got a bit of practice on his acupressure points and then I decided to go and have another bath."*

This was about midnight and P was trying to do the acupressure points while Marion was in the bath. She found that the acupressure *"took the edge off, really it did kind of - yeah, it took the pressure out of the pain, you still had the pain, but it didn't have - it wasn't nearly as intense…"*

Over the course of the evening, and overnight, Marion went into her bath three times. After the second bath P had turned up the hot water temperature so that they used less hot water to fill the bath and this would make the water last longer. (Another good tip for midwives to remember when using birth pools at home.)

During her third session in the bath, the contractions seemed to be getting stronger. Marion talks about how she maintained concentration and comfort during this time, when she was alone in the bathroom.

> *"We've got a rubber ducky bath plug and my means of coping with the contractions then became focusing on the orange beak of the rubber ducky. I was quite good about resting in-between the contractions…because I had the beach ball in the bath, the half-inflated beach ball in the bath as a pillow and I was on my side in the bath and I think I was basically asleep in the water between times".*

Marion talked about how she was feeling during this time, in the middle of the night when she was by herself in the bath, P having gone back to bed.

> *"…that was the ultimate for me, because I was in the bath and I think it was one of the most alone points I think I've ever felt. 'Cause having contractions in the bath by myself and I knew he was asleep and 'cause when I did finally decide that I wanted him, which was a bit later, it took me about six or seven times of yelling for him before he even heard me. I mean it was important that he slept because otherwise we wouldn't have been able to get it all done and he would have been absolutely collapsing because he'd been so busy, but at that particular moment I remember really resenting the fact that he wasn't there and also cause he decided that we didn't need to call C* (her sister) *because it's more important that C get some sleep before we disrupt her, because C and L* (C's six month old baby) *wouldn't get sleep, which was fine in the end, but at the time I was really pissed off about it".*

It was about six in the morning when Marion started to think the contractions were becoming more serious. P had called Marion's sister to come around and by the time she arrived, the contractions were coming about every five to six minutes. However, soon after this, they went back to twenty minutes apart.

There were a lot of people around. Marion and her partner P, her sister and her sister's partner and their baby along with an aunt who came to look after the sister's baby. And in the midst of all this the joiner came in to finish off the kitchen cupboards! He was given instructions to come back another time. There were still a lot of birth preparations to be done, including picking up the birth pool. Arrangements were made to do this and P went off to collect it, while other members of the family went to Grandad's funeral. The midwife

was called at midday to inform her of the progress. She arranged to come and visit, however, when she got there, the contractions were back to being twenty minutes apart. I asked Marion what she thought was going on with her labour:

> *" …there was so much going on during the day. I think that a lot of it was* (that) *there was so much happening it kind of slowed down a lot. I wonder if - some of it was that I knew that everything wasn't ready yet - yeah, everything wasn't there that I needed, so I kind of just slowed down and waited…"*

Later, when everything was ready, Marion hopped into the birth pool. The midwife visited again at six p.m. Marion's water had broken prior to her getting into the pool and she recalls that she had had a show earlier the previous evening.

When she got into the pool Marion recalls feeling very cold, even though the water temperature was about 38 degrees Celsius. She even pulled the heat cover over her head in an attempt to warm up. I asked her what she felt like when she climbed into the pool:

> *"I was still cold in the water, but I was… the thing for me with the water wasn't that it relieved the pain because, I don't know, I mean I don't know how much it did, because I don't know how the pain would be without it, the thing for me with the water was I completely relaxed in-between time, I can remember being like a frog in the water, being completely spread- eagle, floating in the water".*

Soon after the midwife arrived at six p.m., a vaginal examination was performed. They were all surprised to find that Marion was seven centimeters dilated, as she had not had any really regular labour pattern. *"…there would still be occasionally a ten minute space between them and they weren't kind of any particular length of lasting"*.

Marion stayed in the pool then until transition. She decided to get out when she started to feel quite giddy and faint, not feeling safe in the water. At this time she wondered whether she was getting a bit hot in the water. However she recalls feeling some pushing sensations prior to getting out:

> *"…I got out of the water and I lay on the bed for a bit and then I felt I needed to go to the bathroom, of course I didn't need to go to the bathroom, so I spent some time in the bathroom, it was nice and cold in our bathroom that night and then I went back on our bed and I was sort of laying down and resting for a bit ".*

The midwife examined Marion again and found her to be almost fully dilated. There was an anterior lip of cervix, which was causing her a lot of discomfort in her abdomen. The midwife tried to push the lip of cervix away with the next contraction and reported feeling the baby turning on her hand. He had been in a deflexed OP position until this time. She then got down onto her hands and knees beside the bed and:

> *"… pushed and pushed and pushed and pushed and then we had our baby. I'd read all the stuff about breathing babies out rather than pushing babies out so that you didn't tear. I was conscious of*

> *the fact that that's what I was needing to do, but at the same time I really needed to push this baby out. It felt like he was stuck and I was just like -" for God's sake, can't you just reach up and pull him out " and the next thing you know the baby was down on the floor in front of me, it was basically, yeah, he just came out in one move".*

The placenta was born physiologically at what seemed to Marion as about five minutes later when Marion stood up. The baby was still attached to the placenta and the father cut the cord soon after. I asked her to describe how the baby was after the birth:

> *"He was nine* (his apgar score), *he was screaming when he was born, my lasting memory of the child put in front of me was already screaming…he looked, he didn't look purple, he looked normal, he looked like a little rat…he* (his mouth) *was wide open and screaming."*

Marion and I talked quite a bit about how she felt about the birth being outside the birth pool, and whether she would have liked to get back in to birth and what was happening for her at this time. Her comments are important in that they highlight an important aspect of using water for labour and birth, that women should see water as a tool to be used but not to let themselves become a slave to it. After the vaginal examination where the anterior lip was pushed back, Marion recalls thinking she'd like to get back into the pool but didn't say anything. The midwife later also said she should have asked Marion if she had wanted to get back into the pool but did not ask either. However, Marion remembers feeling unwell when she was last in the pool. So she did not ask

about going back in. I asked her whether she thought it would have made a difference to the birth. *"No, I don't think it does, I think by the time you get to there, I don't think it makes - you're not going to get any relaxing out of being in the water because it's hard work".*

Marion recalls thinking she could have asked to get into the pool again but did not feel she had to. While in the birth pool, Marion described her feelings about needing to be secluded and how she achieved this:

> *"…every time I had a contraction I'd move so that they could press my back and everything, so that I could get that as well and that really helped but as soon as it was finished I'd be back, and away from them as well, they couldn't reach me, when I didn't need them, there was no way they could have touched me because I was over the other side of the pool. We had the pool in the far corner of the bedroom so that it was here and everything else was over here and the bed's on this side and yeah, so every time I was over in the far corner where they couldn't - I was nowhere near anyone else".*

I asked her why this was important to her and what was happening for her:

> *"I think it was part to do with the - when I needed them I'd go and get them and when I didn't, I needed the space to be on my own, so I could relax and focus- yeah I turned everything off. I did actually do some of that focusing on the baby, 'cause I'd read bits about visualisation and stuff and so I did. There were times when I was thinking about the fact that the baby is moving down here and this is happening - all sorts of concentrating on the baby being born".*

I asked Marion to tell me what using the water was like for her:

> *"I think a lot of it was the warm, like I needed to be really warm, so I had that whole enclosed warmth and yeah, the support of the water -yeah, it was my space kind of thing. Every time S* (the midwife) *made me stand up to get so she could listen to the heart rate and stuff, it was like as soon as she finished I was back down in the water so I could get away from all that stuff that was going on. "I think the water was more about being able to block everything out in between and being able to completely relax and be kind of in there - it's funny though because I was really aware of everything that was going on the entire time".*

So after a long latent phase of labour and using the bath a lot in this stage Marion was able to eventually get into the birth pool once it had been collected and set up. There was much activity in the house that day, not the least of which were the preparations for her grandad's funeral. The fact that she personally managed her early labour stage so well, meant that she did not become exhausted and they were all pleasantly surprised at how far she had gone when later in the day she was found to be seven centimeters dilated. Marion got out of the birth pool when she was just approaching full dilatation because she felt unwell. She went on to birth by her bed. She knew she could ask to get back into the pool, but did not and was not offered the pool by her midwife. In retrospect she is not worried about this, as she does not feel it would have made a difference however she feels that next time she would certainly ask to get back in to the pool.

My reflections on Marion's story

Because of the death of her grandad, and arrival of family for the funeral and the fact that she still had some outstanding birth preparations to complete, Marion's labour was disrupted. She had a night and day of latent before things became established. This brings us back to the story of the lioness that is disturbed during labour, from Lily's story. It was only after the household settled down, became quieter and the birth pool became available, filled ready for use that Marion was able to get on with her labour. During this earlier time she had often felt alone and resentful. However, once her labour established and she was in the birth pool she gains the ability to maintain control.

The birth pool offered Marion the means to maintain a physical barrier between herself and those around her. The birth pool was her exclusive space. The water gave her the means to block everything out, turn everything else off, to retreat inwardly. During this time she relaxed completely, focused on the baby and the job in hand. Along with this, being in the water ensured that Marion maintained control over her labour, by allowing her to move towards her supporters during a contraction, so that they could offer acupressure and encouragement. When she had finished a contraction she would move as far away as possible from her supporters deliberately, so they could not disturb or touch her.

The metaphors of the spread-eagled frog in Marion's story provide an insight into how she uses the water in her labour. Fully relaxed, almost to the point of being asleep, Marion lays on her front, supported by deep warm water as her

arms and legs rest outstretched without tension. As with the previous women, Marion also says that the water provided her with whole-enclosed warmth and support.

Marion gave birth out of the birth pool, although a water birth had been her goal. She is not disappointed that she did not achieve this. At the time it felt right for her to get out of the pool. She knew she could get back in again if she wanted. In contrast to how the women of the other stories describe their babies, Marion says that her lasting impression of her baby is of a little rat, wide open and screaming.

Tanya's Birth Story

"I just swear by water, I've just been telling everybody about it, that it's the most amazing thing - I put it in my birth notice that it was a water birth at home because I think that people should read that, people should know these things."

I first met Tanya when she was about 36 weeks pregnant with her third baby. Her two other children were both at primary school and she was a very busy mother. Tanya was keeping very well and was very excited about the upcoming birth. This was to be her third home birth and this time, for the first time, she had booked the birth pool. Though not sure whether she would use the pool for the labour or birth, Tanya felt like it was a good alternative to have available. She was well supported by her mother, her children and a couple of friends. This baby has a different father to her other children; however, she is no longer in this relationship, and so therefore is a single mother. In the story that follows Tanya also experiences some difficulties with the birthpool that cause disruptions to her labour

The group of midwives with whom I work has been in practice since prior to the 1990 Nurses Amendment Act, which restored midwifery autonomy to midwives in New Zealand. Tanya has had midwives from this group for all of her babies. She has seen many practices change in this time and was able to compare the births of each of them and to reflect on what was good and what was not so good.

I interviewed Tanya when B was 10 days old, while he happily sucked at the breast. We had coffee and looked at the beautiful birth photos that were taken by Tanya's support people. Tanya has generously gifted me some of these photos to use in this story. She was full of enthusiasm to share her story about using the water for labour and birth and we learnt a lesson from the problems that they experienced in the heating of the pool.

Tanys'a labour started about 4.15 a.m. when she was about four days past her due date, *"with a very slow relaxed sort of beginning phase…and it went on like that all day - easily managed".* She did some housework and shopping and set up the birth pool. After picking her children up from school in the afternoon the contractions started *"getting a bit more full on …and it got to the point then that I couldn't talk through contractions, I had to sort of concentrate on them".*

The birth pool that Tanya was using is one of the three our group has for the women we care for. It is a portable, easily put together pool and has a heating unit. Tanya had set the pool up and filled it with mostly cold water. As the pool holds about 750 litres of water, the heating unit takes a while to heat the water temperature to the recommended 37^{o} Celsius. Research has shown that the ideal temperature for the mother to be in is about body temperature and that if it is any hotter it may compromise the baby. Tanya was cross with herself when they discovered that the water was too hot for her to get into when she wanted to. What had actually happened was that the water was hot at the top of the pool and cold at the bottom:

> *"We had the pool all heated up, in fact we thought it was too hot, so someone turned it off…then we discovered later it was hot at the top, that somebody had to stir it up…we'll have to cool it down…so we took the cover off it and I mean - ridiculous - because I've been running baths for the kids for years and you always stir the water up, we were sitting and* (it) *didn't occur to us to do it in the pool".*

So it was much later that evening before Tanya was able to get into the pool. She says several times through our conversation that she would have got into the pool much earlier had it all been ready. Using the bath had featured in both Tanya's previous births, *" but I just found to be even slightly submerged you needed to lie back really and I didn't like lying back and you weren't totally covered anyway, so it didn't do it for me basically".*

She was very keen to be in the pool and when it was ready she quickly took her dress off and hopped in. Soon after getting into the pool Tanya asked her midwife to examine her to see how far she had progressed. She was about 4 cms dilated with a thick soft cervix. She was devastated by this news and remembers thinking, *" Oh my God, I've been going all day and I can't go all night, this is just - I just can't do it…"*

After this Tanya talked about a sense of fear that threatened to engulf her. The fact that Tanya had two children before did not reduce this sense of fear. We discussed the timing of this fear. Often it seems to be associated with the period of time we call transition. Tanya reflected on the speed of her labour

once she got into the pool. It became obvious that she was entering the transition phase soon after she got in:

> *"I still felt quite overwhelmed by what was happening to my body and I mean I went through a short time then of feeling really almost like I was fighting the contractions and feeling quite scared about what was happening to me, that's quite often a transition isn't it? - getting quite worried about how you're going to do it "?*

Acupressure was an important component of Tanya's labour care and during the active part of the labour she had been standing up and leaning over her side board in the lounge room area while one or other of her support people applied acupressure to her lower back. I asked whether the acupressure was effective and she said:

> *"Some of the time they felt really effective and they seemed to shorten the contractions and other times I think it was just cause they hurt so much that it took my mind off the contractions - I don't know what it was but they did something for me, yeah definitely, and it depended on who was doing them whether they worked very well or not, so someone carried on doing that for me in the pool".*

Once Tanya entered the pool, she was kneeling and leaning over the side of the pool with her head resting on a towel. This position meant that her back was easily accessible to her support person P who continued to apply the acupressure to her lower back until the baby's head was born.

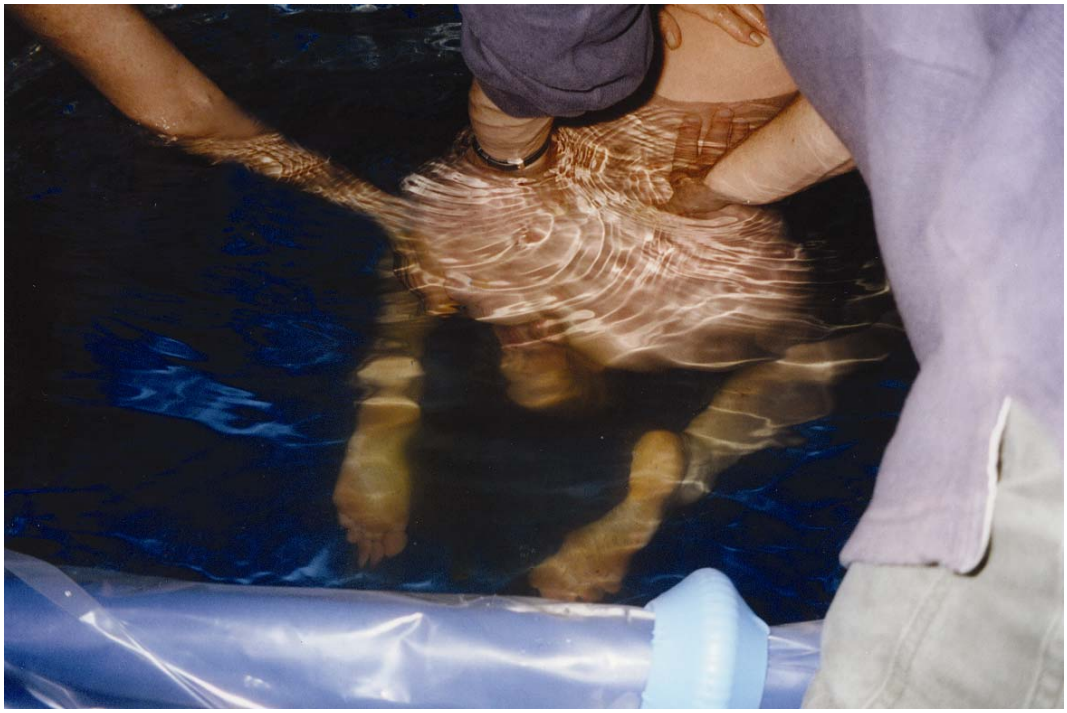

Photo. 4. Acupressure continues as baby is born underwater. Source: Tanya, 2001

The relief that she felt once in the pool was immediate and it wasn't long before she felt like she could relax and work with her contractions. Within a very short space of time she felt like she wanted to push with some of the contractions. Everyone encouraged her to do what she needed to do while perhaps not really believing she could have advanced so far so fast. Soon though the midwife noticed a change in her noises and was over at the poolside to check on her. She told Tanya to reach down between her legs were she could feel the baby crowning. *" Yeah, three quarters of an hour from 4cms to time being totally out - it was incredible".*

When I asked Tanya did she attribute the water to the speed of the dilatation she said, *" Yeah, I'm sure of it - absolutely sure of it…I don't think it would have happened if I had stayed where I was, I needed a change ".*

For Tanya, it was the change of focus that had the greatest impact. She needed the change, and the water was what she had been focusing on achieving. *"I was focused on being in the pool, that's where I wanted to be, I was relaxed more in the water, the warmth of the water…"*

One of the goals of Tanya's birth plan had been to bring the baby to the surface herself and be the first one to discover whether she had a girl or a boy. She did do this, but in a somewhat comical manner when it became obvious, as she tried to bring him to the surface, that his leg was still not fully born.

> *"…after his body was born, we sort of tried to pass him through my legs and I couldn't quite get him - I said, "he's not coming", and I realised his leg was - one of his legs was still inside and had to give another wee push…"*

Tanya saw that she had a little boy and that he was covered in vernix and very floaty and quiet with his eyes wide open and he, *"…was sort of snuggling up to me…and you know, I sort of gathered him up like that and he was very much at home where he was".*

Photo 5. Tanya and baby immediately after birth Source: Tanya, 2001

The birth was a wonderful family event. The support people had all provided Tanya with just the right amount of care and attention. She recalls feeling so cared for as one friend fanned her face while her other friend did acupressure on her back, her mother cooled her face with a damp face cloth and her children encouraged her. *"It sounds totally extravagant doesn't it, but I felt great, I really did"*.

Everyone was gathered around the pool. This was about the time that I arrived, as the backup midwife, to this joyous scene of great achievement. The two older children had important roles. J, the son had wanted to be the one to cut the cord, so after about fifteen minutes waiting for the cord to cease pulsating, this is what he did.

Photo 6. Tanya's son cuts the umbilical cord Source: Tanya, 2001

H, Tanya's daughter, was to be the first, after Mum, to hold the baby, so after J had cut the baby's cord he was taken out of the pool and wrapped and she held him until Tanya got out of the pool.

We discussed the differences between her labours, and what things had worked and what had not worked for her. Tanya recalled her first labour and birth as being 'textbook'. She had been squatting for the birth of H. On the other hand, with her second baby J, she used the birth stool and remembers this birth as hard and difficult because J was in the posterior position. Her belief that the water made a difference to the speed and ease of this birth is apparent when she says *"…but I think that if I didn't have the water there it wouldn't have worked the way it did totally and - you know - whether water would have helped with the others…"*

As with all my participants, I asked Tanya to tell me what she would tell a friend about using water for labour and birth. Tanya is very enthusiastic about home birth and now about water birth and rejoices in telling as many people as possible about her births. *"…I'm really proud of the fact that I've had three homebirths and one of them in water is just a buzz and I think it's something to skite about".*

She has even put a birth notice in the newspaper announcing her home birth, water birth. *"I think people should read that, people should know these things. Whether people asked me or not, I'm just telling everybody ".*

During our conversation, she remarked how people often commented to her that she was brave to have her babies at home. Her response to them was that she thought they were brave to have their babies in hospital.

My reflections on Tanya's story.

Tanya's enthusiasm for home birth and water birth is summed up when she pronounces that everyone should read about and know about these things. This is the first time Tanya has used a birth pool for her birth at home but ponders the possibility it could have made her other births as easy as this one was.

However, there were difficulties with getting the correct water temperature in the birth pool, that had delayed Tanya's entry to the pool. As much as four hours went by, during which time Tanya was very aware that she needed to be in the water. At about this time a vaginal examination revealed her cervix to be

a multip's os (3-4 cms dilated, soft, uneffaced, indicating that labour was not yet established) and she became distressed at this news. It came as a huge blow to Tanya, as she was expecting to be further advanced than that after labouring all day. She uses words like overwhelmed, scared, fearful, and worried to describe how she felt after the vaginal examination and says that she was aware of fighting the contractions at this point. Again I am reminded of the lioness in trouble and looking for help.

Once in the water, Tanya feels an immediate relief and is able to relax completely as she becomes enveloped in the warmth of the water and is able to focus once more and work with the contractions. She gives birth forty-five minutes after getting into the water and marvels at the speed with which it occurred. She knows the birth would have been sooner if she had been able to get into the water earlier.

These five stories have provided an invaluable insight into what women say about using water for labour and birth and the meaning that they make of the experience. Animal similes have evolved from two of the stories. Firstly Lily and the picture of the roaring lion and secondly with Marion's description of her self as a spread-eagled frog. Several common threads, woven through all the stories have been drawn out and analysed in the following chapters.

Chapter 6.

Findings and Discussion

The women's stories were analysed and interpreted by looking for similarities and contrasts among them, and by relating them to the findings in other research on the use of water for labour and birth. This chapter explores the two main categories that emerged from that analysis and the themes that were associated with those categories. Aspects that have implication for practice are woven throughout the discussion. I have called the first major category to emerge, 'Getting ***to*** the water', and it contains six subcategories which were named,'the anticipation', 'the journey', 'the milieu', 'the specifications', 'the difficulties' and 'the alternatives'. The second major category to emerge I have called, 'Getting ***into*** the water', which contained the subcategories of, 'the bliss', 'the release', 'the sanctuary' and 'the diligence'. The following figure represents the findings of this inquiry and visually demonstrates the meaning revealed in the exploration of women's stories.

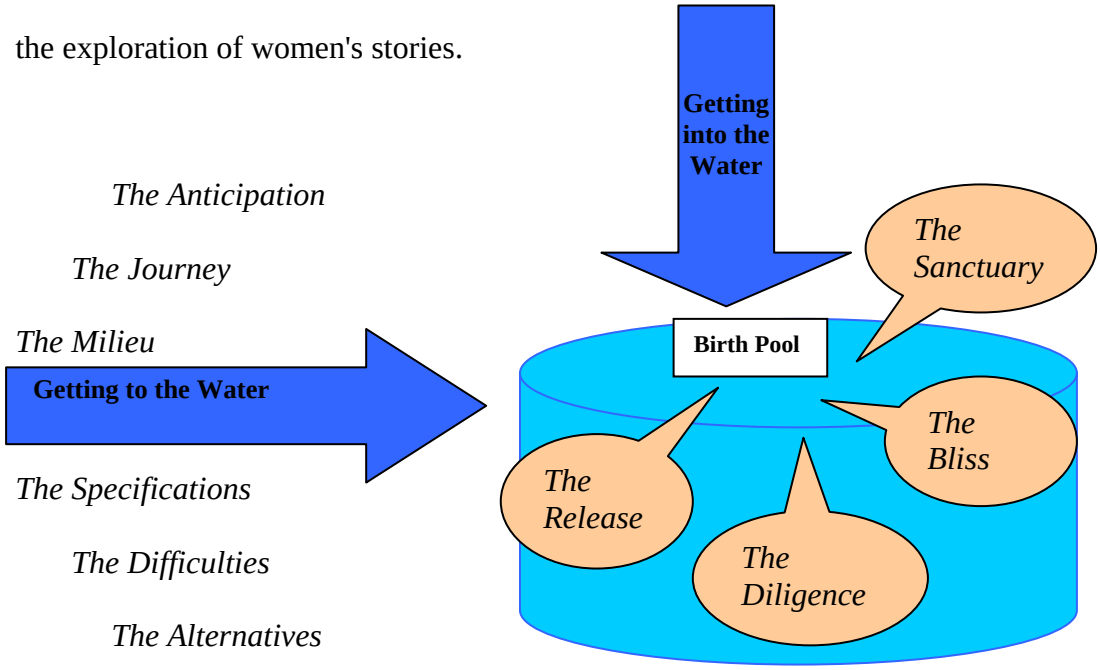

Figure 4. 'It's Beyond Water', model representing the essence of women's stories

Category One: Getting to the Water

This category describes the where, how and when of using water for labour and birth. It discusses some of the technical hitches experienced by women and highlights some implications for practice for both women and midwives. There were six subcategories. Firstly, ‘the anticipation’ relates to the effect of planning and preparing to use water, while 'the journey' considers the consequence of going to the hospital during labour. ‘The milieu’ examines the location of the water, and ‘the specifications’ considers physical aspects of the design of the bath or pool. Some of the problems women experience are described in 'the difficulties' and other ways in which women use water during labour in 'the alternatives'. All of the five women had planned to use water for their labour and while they may have been unsure about actually giving birth in the water, none of them had ruled this out as a possibility. Four of the women, Tanya, Lily, Linda and Jane gave birth in the water. Marion got out of the pool just prior to the birth and did not return.

The Anticipation

This subcategory considers the place and role of anticipating the water as women think about getting to the point where they can actually get into the bath or pool.

Tanya eagerly anticipated entering the birth pool as she watched it fill and waited for the water to reach a temperature allowing her to get in. While waiting for the pool to be ready, she is very aware of the 'need' to be in the

water. Tanya gave birth forty-five minutes after getting into the water (at 3-4 cms dilatation) and marvels at the speed with which it occurred. She attributes this to anticipating the warmth of the water and knowing that she needed to change what she was doing prior to getting in.

> *I didn't get into the pool until 8:00 at night, but I was ready to get in before that, but the pool wasn't ready for me. Then when I did, as soon as they said it was up to temperature or it was almost up to temperature, then I'm in there. I just whipped my dress off and jumped in, I was just really dying to get in, I just – I don't know why, I just knew I really wanted to be in there. I would have - if I hadn't got into that pool - I could have gone however many more hours, it would have taken a lot longer (Tanya).*

Jane was a regular swimmer throughout her pregnancy and appreciated the support and sense of weightlessness afforded by the water.

> *I'd done a lot of swimming actually, right up to the final weeks with being pregnant and I think that was just great, being in the water and just feeling normal. I just felt like – I didn't even realise I was pregnant, it was just great. I did it about twice a week, swimming, free-style and breaststroke. Yeah, I love the water because you can't do so much while you're pregnant so that was just a great thing to do (Jane).*

Jane had anticipated the presence of these sensations on entering the bath at the hospital. *"The water, the hot bath I was always wanting to give that a go (Jane)."* When a woman climbs into a bath or pool that supports her body with heated water she feels almost weightless. It is easier for her to support her body

and to endure the contractions. Her muscles are less tense because they do not have to support her entire weight (Church, 1989).

Jane's labour accelerated once the fetal membranes ruptured (she broke her waters), and she experienced a loss of control on the journey to the hospital as she became fearful that she might not make it in time. However, her equilibrium was regained on entering the bath; it was just as she had anticipated.

> *I think I felt relief that I was out of the car and it was just nice to know that everything was ready, everything was there, yeah and I think my body just relaxed more which probably helped with the contractions and everything (Jane).*

Marion planned to use a birth pool at home during her labour, however the birth pool was not at her house when she went into labour two weeks before her due date. During the time that it took to anticipate a state of readiness, Marion remained in latent labour. Once in the pool, her labour established and she took control.

Odent reports that women's labours can progress rapidly just by anticipating and watching the pool fill. He claims to have found that the mere sight of the water and the sound of it filling the pool are sometimes sufficient stimuli to release inhibitions. Women tend to dilate faster as they wait for the pool to fill Odent (1983). Tanya had her baby three quarters of an hour after getting into

the pool. She attributed the speed with the dilation with anticipating and using water.

> *I'm sure of it – absolutely sure of it, just that it changed – I don't think that would have happened if I'd stayed where I was, I needed that change, I felt like I needed it earlier, it didn't happen earlier but when it did happen it was what needed to happen for things to change in my body as well, it needed you know just maybe it was a different focus, it was probably a big mixture of things, I was focused on being in the water, that's where I wanted to be (Tanya).*

Lily was in the pool for three-quarters of an hour after arrival at the hospital. On vaginal examination her cervix was found to be 3 cms dilated. She used the shower and went on to birth in the water one hour later, two and a half hours after arriving at the hospital. Both Jane and Linda were about 6 cms dilated on arrival at the hospital and both gave birth between one and one and a half hours after getting into the water.

The importance of anticipating the use of the bath or birth pool should not be underestimated. Experienced midwives' judicious use of this phase might help women enter the pool at just the right time, which in turn may help them dilate faster (Odent, 1997).

The Journey

Jane, Linda and Lily all planned to give birth at the hospital. For some women, however, the decision to relocate when in labour and the actual trip to the hospital can be very disruptive.

Linda did not know what was happening to her and did not realise she was in labour. As she lived some distance away, her midwife asked her to go the hospital to be assessed. Linda travelled with her support person to the hospital, which was about a half-hour drive away, where she met her midwife in the delivery suite. She did not find the trip to hospital to be particularly stressful but was shocked when on arrival she was examined vaginally and found to be 6-7 cms dilated. She became frightened but was able to relax once in the water.

For others, getting to the hospital was not always as trouble free as it was for Linda. Jane and Lily have contrasting stories about the car trip to the hospital. Jane had planned a hospital birth and was very keen to use the water for labour. She lived only ten minutes away from the hospital but had to climb quite a few steps up to the road to their car. Her labour was progressing fast and when her midwife examined her, she was found to be 6 cms dilated. Soon after making the decision to go to the hospital her membranes ruptured, intensifying the contractions. Jane's thoughts at this time were *"I had to try and make it up those stairs and that was a bit of a drama in the middle of contractions"*. Her contractions were coming about every two minutes at this time and she had to stop walking up the steps each time another contraction started. Consequently, it took a while to make it to the top of the steps to the waiting car. Jane was

very anxious to get to the hospital and the trip was a bit of a drama. She said, *"I felt out of control when I didn't know if we were going to get there"*.

Many women talk about feeling out of control and not being able to cope once they make the decision to transfer during labour. It seems to unbalance their equilibrium and can take an hour or more for them to regain control. Jane's composure was destabilised by the combination of an accelerating labour and the combined obstacles of the steps up to the car and the car trip itself. In one study, staying in control emerged as a core category. "Indeed, personal control appeared to have an effect on the participant's view of the experience as well as her ability the manage pain, release inhibitions and to have the confidence to exercise choice" (Hall and Holloway, 1998, p. 32).

Jane's main focus was on getting to the hospital where she knew her midwife had gone ahead to prepare her room and the bath. For her, the hospital is equated with safety, hence her need to get there as soon as she could. This association of the hospital being equated with safety is an interesting area for further exploration, as there would indeed be some debate around whether this is so. Some practitioners believe that hospitals, with the routines and timeframes imposed by institutional policies, impede physiological labour and birth. Indeed, transferring to the hospital can be viewed as the first intervention in a cascade of interventions that interfere with physiological birth.

In contrast, Lily was unfazed by her trip to the hospital. She described her trip to the hospital, fifteen minutes away, as "*more comical than it was actually*

stressful”. Lily’s partner does not drive, so they had arranged for a friend who lived down the road to drive them to the hospital in Lily’s car. She was giving the driver directions to the hospital, as she had contractions, kneeling over the back seat and facing the wrong direction. Lily ponders on the initial slowing down of her contractions and wonders if this is related to the trip to the hospital. She says, *"I was waiting for it. I’d heard that when you go to the hospital it could really stop you from progressing"*.

The contrast between Lily and Jane is interesting. Lily had said at our earlier meeting that she would have quite liked a home birth but because they were only renting the place where they lived, they did not feel like it was their home. However for Jane, getting to the hospital was paramount and she became apprehensive when she thought her labour was progressing too fast to make it in time. This was despite the fact that her midwife regularly attends women birthing at home and that she lived very close to the hospital.

The Milieu

This subcategory examines the significance of the geographical location of the bath or birth pool. Women birthing at home have a greater choice of where to place the birthpool in relation to their surroundings. Interviews with women who gave birth at home reveal that they seldom do so in their bedroom, but are more likely to do so in their sitting room. Here they tend to find an empty and protected area, sheltered by low furnishings. Women never expose themselves at the centre of the room (Lepori, 1994, p.83).

Marion's birth pool was set up in the far corner of her bedroom. She positioned the birth pool in her bedroom because this provided her with a greater sense of privacy than her lounge room. On the day of her labour, her lounge room accommodated a steady stream of visitors and family preparing to attend her Grandad's funeral. This general busy-ness prevented Marion from using this space to focus and concentrate on her labour and birth. The placement of the pool by Marion is interesting as it deliberately restricted access by others to her when she was in the pool.

Tanya set her birth pool up against one wall in her lounge room providing easy access to both the kitchen and the bathroom. Her lounge room is small and private and she was able to wander freely from room to room in between contractions. She used other pieces of furniture to prop against while having contractions.

The women birthing at the hospitals used different types of commercially available spa-baths (without water jets), that vary in size and depth and are placed, by hospital planners and designers, into positions that are often dictated by extraneous factors. Linda appreciated the opportunity to use a deep bath in a bathroom adjoining the delivery room, where the delivery bed dominated the centre of the room and therefore became the focal point. This was important to her as she associated the bed and hospital room with illness and being in the hospital for another reason other than giving birth. In contrast, being in the bath reminded her of being at home. Lily and Jane used purpose built low intervention birth rooms designed using Lepori's (1994) concept of having an

open central space allowing the women freedom of movement. The open central space is supported by access to a range of options that encourage active birth, such as bars and rails on the walls, and includes easy access to water immersion. From the design of the two different hospital's delivery rooms experienced by Linda, Lily and Jane, it is apparent that attempts were made to provide a home-like environment that supports a more holistic approach to birth.

The Specifications

This subcategory considers the importance of the size, shape and depth of the bath or pool. The women birthing at home (Tanya and Marion) used portable birth pools consisting of a lightweight plastic frame, which supports a strong and durable polythene pool liner. The pool contains approximately 750 litres of water and comes to the level of the breasts when a woman is sitting (see opening picture on p. *v*)

Linda made particular mention of the size of the bath and particularly points out that it had provided her with, " *plenty of room to move around"*, which meant that she could stretch out. Freedom to move around while being supported by water has been acknowledged in the literature as beneficial to women during labour.

> It is obvious that a woman in water can move easily and choose to spontaneously vary her posture during labour. The posture which a woman finds comfortable is of enormous importance to the physiological effectiveness and emotional satisfaction of labour and birth (Johnson, 1996).

Tanya, who had used an ordinary domestic bath during one of her previous labours, compared the degree of effective relaxation and comfort afforded by the size and depth of the bath or pool. "*I just found to be even slightly submerged you needed to lie back really and I didn't like lying back and you still weren't totally covered anyway so it just didn't do it for me basically ".* Lily preferred a combination of standing and kneeling, using both the shower and the bath. For her the water in the bath was not deep enough because every time she turned over onto her hands and knees, her back would get cold because it was out of the water. Because Lily had a lot of back pain, she would have preferred to be able to stand up, leaning forward with hot water directed onto her lower back.

> *I would have much preferred to almost be standing up in water- like I know that's a lot of water, but almost like to the upper chest just so it covers at least half way up my back. I would have liked to be surrounded by warmth in the water (Lily).*

Lily questions whether there is such a thing as a bath that's really high, like a tank that you are able to stand up in. Depth, shape, and size of the bath or pool are significant to the way in which women use water during labour and birth. Designers and manufacturers of birth pools and managers who are responsible for planning and designing new birthing facilities within institutions should carefully consider this concept.

The Difficulties

Both women planning to give birth at home experienced some difficulties with the portable birth pools hired by them, for the day of their labour and birth. The difficulties are related to:

- readiness
- availability of the equipment and
- getting the water temperature correct

Marion's experience of difficulties getting to the birth pool are related to her lack of readiness since her labour started two weeks before her due date. There were considerable disruptions in her life at the time of going into labour. She had not completed her birth preparations. Her husband was busy at his work and quite tired, she did not have the pool or the water heating unit and a builder arrived to fix some cupboards in her new kitchen. The death of Marion's grandfather compounded this situation. Family was gathering for the funeral on the day she was in labour and the atmosphere in the house was busy during this period of time. In the middle of the day Marion had a rest while someone went to organize the birth pool and the others attended the funeral. Marion's labour had been erratic since the evening before, with everything that was going on around her and had not really established.

> *There was so much going on during the day and I think that a lot of it was there was so much happening that it kind of slowed down a lot. I wonder if - some of it was that I knew that everything wasn't ready yet - yeah, everything wasn't there that I needed, so I kind of just slowed down and waited…(Marion).*

Tanya's difficulties getting to the water related to the water temperature of the birth pool. The problems that Tanya and her support people had in terms of getting the water temperature in the birth pool correct played a significant part in the course of her labour. Once her labour established in the late afternoon, Tanya's support people started filling the pool. They had an immersion heater in the water to bring the temperature up to the recommended 35-37^{o} C for the first stage of labour (Burns and Kitzinger, 1998), and a cover over the top to keep the heat in. However, when Tanya was ready to get in to the pool it was noted on the thermometer that the water was too hot.

> *We had the pool all heated up. In fact we thought it was too hot, so someone turned it off at some stage. And then we discovered later that it was hot at the top and cold at the bottom. Somebody had to stir it up(Tanya) .*

Tanya was aware of the need to monitor the water temperature with the thermometer supplied with the birth pool. Tanya said she had used the thermometer to check the water temperature of the birth pool.

> *But it was sitting at the top and it was saying 40 something and we were thinking 'Oh God' it's too hot, we'll have to cool it down. So we took the cover off it and I mean, how ridiculous, because I've been running baths for the kids for years and you always stir the water up, but it didn't occur to us to do it in the pool (Tanya) .*

Rosevear (1993) first raised the significance of the water temperature and its relation to both the maternal and fetal temperature. A consultant clinical physiologist has reported that "the fetus is critically dependent on maternal

temperature control. Overheating the mother by immersing her in water higher than her body temperature can lead to fetal hyperthermia" (Johnson, 1996, p.204). There is limited evidence available from studies on the cause and effect of fetal hyperthermia. However studies suggest an increase in maternal temperature to around 1.0^{o} C above the baseline is unlikely to compromise a healthy fetus, and may even be beneficial. However, at a certain temperature benefits cease, the maternal-fetal temperature gradient is reversed and the fetus increases its metabolic rate and oxygen demands, producing increasing amounts of undissipated heat with serious consequences (Charles, 1998).

The recommendation is that midwives should closely monitor the maternal temperature during warm water immersion in labour, along with the temperature of the water. There is another lesson to be learnt as well, that is the need for careful instruction about how to fill the pool and how to maintain and check the temperature.

The Alternatives

This subcategory examines how women use other forms of water to help soothe the discomfort of labour in the early stages, prior to accessing the bath or birth pool for established labour. All the women have used water in some other form prior to getting into the bath or pool.

Marion said that she has always relaxed in warm water in her bath when she had period pain, muscle or stomach ache, so it would not have been unusual for her to seek comfort in her bath in the early or latent phase of her labour.

Between nine-thirty at night and seven-thirty the next morning, Marion went into her bath to get some relief from niggling contractions on three occasions:

> *I decided I was going to have a bath because that would just relax me, that would settle it all down and I'd be able to go to sleep and I'd be fine and it would all go away. So I did that, went and had a nice bath which was very nice (Marion).*

The distinction that Marion made between using her bath and going into the birth pool was clear. The bath was a method used to soothe the discomfort of the early contractions, whereas the birthpool was for when she was in active labour and for giving birth.

Prior to going to the hospital, Jane used the shower at home and found that it helped her:

> *It was just enough to make it bearable. I found the shower I had … in the early stages… quite refreshing and it made me feel better. It didn't really take the edge off the pain I don't think; it just made me feel better in myself (Jane)* .

Lily also used the shower at her home in the early part of her labour:**.**

> *I don't know what time it was, but I really wanted to hop in to the shower, I wanted heat, I needed heat. So I hopped in the shower and braced - and had it on quite warmish and then every time a contraction would come I would turn it on really hot and turn around and brace myself against the wall and just have it on my lower back, really, really hot (Lily).*

Linda recalled the soothing effect of having warm water poured over her back during contractions:

> *I remember S was scooping up* (the water) *with a container of some sort, because I was on my hands and knees, and she was tipping it over my back and that felt – just the warmth and that,* (it) *felt really nice, it was like very relaxing. I was scared as well, which didn't help, so therefore I wasn't relaxed, but with S tipping the water over my back, it was just the warmth and everything else, it was soothing (Linda).*

In summary, the location of the facilities for water immersion have a bearing on how the women use water and how they perceive it as providing an environment that supports their choices during birth. Women also use water in other ways, such as the shower, while they anticipate the time when they can enter the pool or bath. Even having water gently poured over their backs provides comfort to women in labour.

Tanya and Marion's stories of difficulties with their birth pools and the perceived effect this had on their labour is interesting. The anticipation of getting into the water was tempered by difficulties with the pool and seemed to significantly slow down their progress.

For Jane, the trip to hospital caused her anxiety and she felt out of control. Her arrival at and the perceived 'safety' of the hospital together with the anticipation of the bath brought her instant relaxation.

Category Two: Getting into the Water

This category describes the experience of getting into the water and examines what happens once the women have made it into the water. I have focused on the meaning the women have made of the experience of being in water during labour and birth. There were four subcategories. The first was named 'the bliss' and related to the relaxation, soothing, comforting and warming effect of the water. The second was named 'the release' and related to the women's perception of pain and pain relief afforded by being in the water. The third subcategory I have called, 'the sanctuary', which explored the means by which the water became a barrier and provided the women with a sense of privacy. Finally, the fourth subcategory is called, 'the diligence', and discusses the role and philosophy of the midwife. The findings are illuminating and offer women and midwives some valuable insights into the meaning women make of the experience of using water for labour and birth.

The Bliss

Bliss was a word, used often by Lily to describe the sensations of the relaxing, soothing, comforting and warming effect engendered by being in the water. It fits well with how the other women have described being in the water.

It was interesting to find that the women were generally not able to articulate exactly what it was that the water did for them. Linda's response to my question, " what was the water like, what did the water feel like?" demonstrates this difficulty. She says:

> *It was … just the warmth and that felt really nice, it was like very relaxing type of thing. It was, I don't know, it was, yeah, no it was…'Cause I was scared as well which didn't help, and so therefore, I wasn't relaxed but with S* (her midwife) *tipping the water over my back and that, it was just the warmth and everything else, it was soothing, yeah it's quite hard to describe actually (Linda).*

Most of the women have used descriptive words like warmth, soothe, comfort, and relax. We can all relate to the feelings and sensations that these words invoke as we imagine being immersed in a bath or pool of deep warm water. However it is in the wider context of their stories that we are able to understand what it is that the women say about using water for labour and birth. This context includes aspects from their background, the circumstances, the situation, the perspective and the environments of each of the five women's birth stories.

The relaxing effect of warm water immersion and how it may facilitate women to birth without exogenous pain relief and other forms of interventions was first described by Odent (1983). He discussed the effect of water on reducing the secretion of nor-adrenaline and other catecholamines that may slow down the progress of labour. Church (1989) also proposed this in a publication on waterbirth, when she reports that water immersion decreases anxiety in the woman and that this works to reduce adrenaline levels, thus encouraging natural oxytocins and endorphins to flow uninhibited. A natural balance of pain and relaxation is achieved, and her labour progresses normally.

The prospective randomised controlled trial by Cammu and colleagues (1994) found that there was no statistical difference between the absolute values of labour pain between the two groups of women in their trial. They reported that bathing provided no objective pain relief. It had, however a temporal pain stabilizing effect, possibly mediated through the improved ability to relax in between contractions (Cammu et al., 1994). Jane's comments provided some support for this notion when she said, "*it made me feel better. It didn't really take the edge off the pain I don't think; it just made me feel better in myself ".*

In relation to relaxation and the effects of water immersion, Aird et al. (1997), in an historical cohort study reported that the mechanism by which labouring in water may improve obstetric outcome was not clear. Labouring in water may allow greater relaxation of the mother during the first stage of labour allowing her to reach the second stage better prepared to deliver the fetus by her own.

Marion experienced a long period of latent labour, which is "the early part of the first stage of labour…generally recognised as being the period of time taken for the cervix to reach approximately 3-4 cms dilatation. In primigravidae this may last for 6-8 hours…" (Sweet, 2000, p.379). Latent labour is generally not well understood nor well managed by women or their caregivers. After having 'niggles' all day Marion decided to have a bath before going to bed early at around nine p.m. She said: *"I decided I was going to have a bath because that would just relax me, that would settle it all down and I'd be able to go to sleep and I'd be fine and it would all go away".* She enjoyed the support the water afforded her body and says that she was able to

completely relax in between the contractions while in the water. *"I think I was basically asleep in the water between times ".*

Like Marion, Lily felt almost like going off to sleep while in the water. *"I almost fell asleep in between. I just let my head loll on the side. I would just lie it against the side of the bath and I'd just about could* (sic) *go to sleep. I was so relaxed in between, it was really nice and it was nice to keep warm"* .

Indeed, Odent (1983), claims to have observed that water seems to help labouring women reach a certain state of consciousness where they become indifferent to what is going on around them. Odent continues to explore the biochemical and physiological effects of warm water immersion and concludes, "when a parturient enters a bath at body temperature, there is immediate pain relief. This pain relief is probably associated with a reduced level of endorphins and catecholamines (there is a tendency to fall asleep in a comfortable tub)" (Odent, 1997, p. 415). The explanation for this effect is related to the 'soothing warmth', 'the support of the body' and the 'pleasurable sensation' of water, the effect of which stimulates the closing of the gate for pain at the level of the dorsal horn, and supports the notion that water provides women with temporal stabilising effect possibly mediated through the improved ability to relax in between contractions (Cammu , 1994).

When I asked Marion to tell me what using water was like for her she said: *"I think a lot of it was the warm, like I really needed to be warm, so I had that whole enclosed warmth".* This aspect of warmth links well with what Linda

was saying about how being in the water felt for her also. Linda said that being immersed in the warm water of the bath was:

> *Almost like being in a water bed, I guess, is a good way of explaining, like on a cold night when you get into a waterbed or an electric blanket or something like that and it's warm and it's sort of like goes through you and warms you up, that's what it was like sitting in that bath (Linda)* .

For Linda the bath provided a means of coping with the labour and dealing with her fear of her labour. She experienced an ongoing discord between the relaxing effect of the water and a sense of nervousness and fear that would not leave her:

> *We were going through contractions and I was extremely nervous, very nervous, but once I got into the bath I sort of relaxed, you know the heat of the water and so forth, that was really good to relax – to sort of relax and let it all happen. Yeah, no, it was almost like soothing, sort of thing, I mean I was still nervous and I was still scared but it was nice and relaxing, it was sort of like the warmth of the water just made you relax whereas when I was on the bed when she was first checking me out I was sort of really tense, but once I hit the water, whether it was the warmth, I think it was a combination of the water and S (Linda).*

Linda talked about this pull between the fear threatening to engulf her and the relaxing effect of the water during the actual birth and the effect it had on the baby:

> *I remember being on my hands and knees, holding onto the edge of the bath when he was actually coming down and being scared. I remember being absolutely terrified, but S kept pouring water over my back… so at the same time of being terrified I was relaxing as well, which probably made it easier for him to come out (Linda).*

Linda also makes a distinction between how she felt when on the bed during an internal examination and when she was in the water. She had felt extremely uncomfortable on the bed while having the vaginal examination :

> *Because it looks like a hospital bed, it's so cold and impersonal. Yeah I didn't want to be on the bed, I didn't like the bed, it felt sort of hard and like I was in hospital for another reason other than giving birth, it was just very very impersonal, it was cold almost (Linda).*

Linda's compelling reaction to the bed and its presence is sharply contrasted to how she felt once in the water:

> *I think the water itself relaxed me, if I had of been on the bed I would have been stiff and probably would have been a lot harder because I wouldn't have been as relaxed as what I was in the water. The water itself, yeah it was really soothing and relaxing (Linda) .*

Lily had used her shower at home and as soon as she arrived in the hospital she went into the bath:

> *It was just bliss actually, it felt really nice…It just felt really really really wonderful, it relaxed me a lot, as soon as I got in the bath I was totally relaxed and it was yeah – I don't know how, it just felt really nice, it felt like the right place to be (Linda).*

Lily mentions that her contractions slowed down a little after getting into the water. She related this to the relaxing effect of the water. Lily says, "*they* (the contractions*) slowed down a little bit I reckon for a little while. Like just for that first while, because I completely relaxed"*. Tanya also knew about the possibility of going into the water too early and slowing down the labour. She mused on the possibility that if she had been able to get into the birth pool earlier, the relaxing effect may have been detrimental by slowing her labour down. This effect was written about by Odent when he observed that labours slowed down when women were in the water for long periods of time and again later in 1997 when he made the recommendation that immersion in warm water should not exceed two hours (Odent, 1983, 1997). A randomised controlled trial conducted by Erikkson et al. (1997), concluded that a bath during labour should be used after a cervical dilatation of 5 cms to avoid prolonged labour, increased use of oxytocin administration and epidural anaesthesia. They found that there was an increase in the rate of augmentation when women went into the bath before the cervix was dilated to 5 cms. In another study, inclusion criteria required women to be in true spontaneous

labour with a cervical dilatation of 3-5 cms (Cammu, et al. (1994). In this study cervical assessment occurred again 50-60 minutes after entering the pool.

In summary, while the women have difficulty articulating what water does for them, it is clear their stories support the notion that water does provide a temporal stabilising effect described by Cammu et. al (1994). A natural balance between pain and relaxation is achieved. Women reported an altered consciousness while relaxing in the bath or birth pool. All the women described the feeling of being 'totally encompassed' by the warmth while in the water.

The Release

This subcategory examined the way in which women perceive pain experienced in labour and any possible pain relieving properties associated with being immersed in water.

Increasingly women want to find ways to manage the pain of labour naturally thereby reducing the likelihood of requiring pharmacological pain relief. They have come to see water immersion as a means of achieving this. Much of the research to date has attempted to quantify the absolute effect of pain relief afforded to the woman by water immersion during labour and birth. The women's stories speak to us about the experience of pain and the effect of the water on that pain:

> *The thing for me with the water wasn't that it relieved the pain because I don't know, I mean I don't know how much it did*

> *because I don't how the pain would have been without it, the thing for me with the water was I completely relaxed in between time, I can remember being like a frog in the water being completely spread eagled floating in the water (Marion).*

One historical cohort study of the effects of intrapartum hydrotherapy on labour parameters found the requirement for both pethidine and epidural analgesia was significantly reduced amongst women having their first baby (Aird et.al., 1997). Many women are keen to avoid all use of pharmacological pain relief but are unsure about their ability to go through a labour without some help, especially those women having their first baby. "*I didn't want to use drugs if I could help it but then I'm such a wuss when it comes to pain"* (Linda). Linda also made a link between the relaxing effect of the water and the speed of the labour and her ability to avoid pharmacological pain relief:

> *I think it was a quick labour as well which probably helped but it* (the water) *was enough to make me relax enough to not even think about – I mean I didn't even think about taking drugs or gas or anything like that (Linda).*

I have witnessed this in my practice also, especially in women who are well motivated to avoid pharmacological pain relief. These women are encouraged to use other methods to promote comfort and support until labour is established and they are able to get into the pool. Being with the woman, supporting and encouraging her through the sometimes-difficult transition phase and honouring her choices, has meant that many nulliparous women are able to birth without interventions in the pool.

Being immersed in water does not necessarily take the pain away. What it does appear to do, and this is supported in the literature, is to provide a release from the pain in the form of warming, soothing, comforting and relaxing. For women who want to avoid pharmacological pain relief and for midwives who support these women, judicious use of water immersion may offer the means to achieve this.

The Sanctuary

This subcategory discusses how women use water to provide a barrier between themselves and their caregiver and supporters. For some women water immersion helps to create a sense of privacy.

I have included these two aspects in the discussion largely because of Marion's story. It was of interest to me when she described how the pool enabled to her to maintain control of her labour by creating a barrier between herself and her supporters. I was reminded of the woman, who in one study, maintained control by sinking her ears under the water so that she couldn't hear the midwife telling her what to do (Hall & Holloway, 1998). Marion used the pool as a barrier by moving to the far side where no one could touch her:

> *Every time I had a contraction I'd move so that they could press my back and everything so I could get that as well and that really helped but as soon as it was finished I'd be back, and away from them as well, they couldn't reach me – when I didn't need them, there was no way they could have touched me because I was over the other side of the pool, we had the pool in the far corner of the bedroom so that it was here and everything else was over here and*

> *the bed's on this side and yeah so every time I was over in the far corner where they couldn't – I was no where near anyone else (Marion)*

I asked Marion why this was important to her and what was happening for her and she replied:

> *I think it was part of to do with the… when I needed them I'd go and get them and when I didn't I needed the space to be on my own so I could relax and focus - yeah I turned everything off and kind of went in…I did actually do some of that focusing on the baby cause I'd read bits about visualisation and stuff and so I did. There were times when I was thinking about the fact that the baby is moving down here and this is happening - all that sort of concentrating on the baby being born (Marion).*

Marion described the pool as a protective place for her, a little cocoon:

> *It was my space kind of thing. Every time S made me stand up to get so she could listen to the heart rate and stuff it was like as soon as she was finished I was back down in the water so I could get away from all that stuff that was going on. I think the water was more about being able to block everything out in between and being able to completely relax and be kind of in there - it's funny though because I was really aware of everything that was going on the entire time. The whole time, even though I was kind of like sort of not part of what they were doing, I was still really aware of everything was going on and what they were doing wasn't bothering me because - I always thought I'd be much more – everything else would be tuned out more but I was really aware of everything that everyone else was doing (Marion).*

None of the women had issues with being exposed in the bath or pool. Linda said she was a little nervous about being naked in front of her girlfriend, but found that it did not matter on the day once she was in the pool. She was also reassured that no one would enter her birthing room unannounced. Similarly, Lily was reassured that only her partner and midwife would be in the room with her while she was in the pool. She said, "*I didn't feel exposed at all, for some reason I didn't feel like I was naked".* Jane's experience was unique in that she had felt more exposed when she arrived at the hospital than after she had shed her clothing and got into the pool:

> *I had walked in and when I got to the delivery suite, I had - because my water's had broken while I was here so I'd taken off my pants and had a towel between my legs and had my bath robe on so I felt sort of completely exposed and horrible and just being able to take all that off and hop into the water and I think my body just relaxed more (Jane).*

When I asked her if she had felt exposed in the water she replied: *"No, I didn't and that's quite surprising, because I'm quite modest. But I think just having all that warmth around you and just being in that room felt really good, I didn't care at that stage"* (Jane).

Photo 7. The Moment of Birth, Source: Name withheld by request

The women all clearly describe being in the bath or pool as 'their own space', one that offers shelter and protection from unwanted interference or intervention, as well as isolation and insulation from everything else going on around them, allowing them to relax and focus. The enveloping effect of the water wraps the women in warmth and provides a sense of privacy.

The Diligence

The naming of this subcategory came from an examination of the meaning of the word in the thesaurus. Diligence is defined as assiduousness, which means persistence, industriousness and tirelessness. Other descriptive words for diligence were meticulousness, conscientiousness, thoroughness, attentiveness carefulness, watchfulness, alertness, consideration, courtesy and devotion. All

these words communicated an understanding of the personal attributes and core competencies required by midwives to be with women. This subcategory explored the role of the midwife and how their combined philosophies play a critical part in defining how and where the care is provided**.** The women in this study have all talked about the importance of the relationship with their midwife and how respect, mutual trust and shared responsibility supported their choice to use water for labour and birth.

In a study by Rush et al. (1996), women rated the support of the caregiver highly in comments made in a questionnaire about comfort measures. The participants said that they benefited from having a continuous supportive presence with them during labour. Hall and Holloway (1998) agree and say that it became evident that the participants appreciated a balance between personal control and the support from a midwife. Hodnett (2000) comments on the systematic review of caregiver support for women during childbirth that there are clear benefits for women from continuous support during childbirth. Continuous support of women in labour includes advice, practical assistance and emotional support given by nurses, midwives or lay people. The review of trials found that this support reduces the likelihood of medication for pain relief, a caesarean section or a forceps delivery. Women who received continuous support were more likely to report positive evaluations of their birth experiences. All caregivers were female and were either health care professionals or lay women. Despite a wide range of settings reviewed, no harmful effects for either the mother or baby were reported (Hodnett, 2000).

Research supports the need for a continuous supportive presence with women during labour. This by itself has been shown to reduce the likelihood of medication for pain relief, a caesarean section or a forceps delivery. For the women in this study, to be able to labour and birth in water meant that they were required to form a relationship with a midwife who was philosophically in tune with them and would support their choices. There is a need for partnership and teamwork between women and midwives. The following photograph of Tanya, her baby and her midwife provides a visual representation of the partnership relationship that facilitated Tanya's water birth at home.

Photo 8. Tanya, Baby and Midwife Source: Tanya, 2001

In New Zealand (NZ), the woman-midwife relationship is a partnership based on a relationship of trust, shared control and responsibility and shared meaning through mutual understanding. Within the midwifery partnership both partners

have equal status. Knowledge and power are shared between the partners and must achieve a balance, which is negotiated, and mutually satisfactory (Guilliland & Pairman, 1994). Underpinning the NZ midwifery partnership model there are the three defining philosophies. Firstly, there is the belief that pregnancy and childbirth is a normal life event for most women. Secondly, midwifery care is woman-centred, meaning the woman's needs and experiences are central to the partnership and thirdly, autonomous practice (NZ midwives have legislated authority to practice independently) which provides women with continuity of care throughout the entire childbearing experience.

This partnership model of midwifery is dependent on the incorporation of the theoretical concepts of individual negotiation, equality, shared responsibility and empowerment. Individual negotiation recognises that each partner has expertise, the midwife her midwifery knowledge and intuition and the woman the knowledge of herself. Negotiation is the ongoing process of employed to work through issues, choices and consent. Partners within the partnership have equal status and knowledge and power are shared. The balance within the partnership is dynamic and affected by the social context of both partners. This recognises that education, culture, class and socialisation effects the relationship. The balance is negotiated between the woman and midwife with acknowledgement that if at any time a lead role is taken it should be done so in a co-operative manner. The woman takes responsibility and is accountable for decision making and controls her birth experience (Guilliland & Pairman, 1994).

A belief in the importance of supporting physiological birth provides the midwife with a sense of watchfulness, consideration, kindness and courtesy that encourages a partnership with women to support their childbirth choices. Research supports the notion that continuous support by a caregiver philosophically in tune with the woman has a positive impact on the outcomes for women in childbirth. This empowering relationship enables women to maintain control of their birth. Using water for labour and birth is one way in which the midwife and woman achieve this (Hodnett, 1999) .

Summary of Findings

The women's stories reveal the all-encompassing warmth associated with being enveloped in warm water which cradles, supports, relaxes, comforts and soothes. This seems to have the effect of altering women's consciousness and promoting greater relaxation.

Water can be used in any form, from the shallow water of a bath, perhaps in the phase of latent labour, to the deep water of a birth pool during active labour. The shower also provides women with comfort and relief. The shower head can be directed onto a specific part of the body to soothe the pain while also enabling the woman to control the temperature she desires. Calmness and relaxation can be promoted by using a bowl to pour water over the woman in the bath or pool. Even the act of thinking about, preparing for and anticipating the water opens possibilities for women planning to use water for labour and birth.

Women use water to reduce their fear of pain and of childbirth itself. How this works we don't know, but we can hypothesise from the literature. Increased relaxation has been shown to alter biochemical responses to pain, and produce a temporal stabilising effect and may reduce the need for pharmacological pain relief. Women use water to cope with pain not necessarily to remove or diminish pain. A woman in water may remain fearful and scared, but is presented with the ability to relax in between contractions to an extent that her labour may progress more rapidly. Relaxation enables women who use water to focus internally on what is happening to them, their body and their baby. They are able to maintain control over the process of birth.

The all-encompassing warmth of the water shelters and protects the woman, offering her a sense of privacy. Women use water to make a barrier between themselves, their care providers and supporters, effectively creating a separation from technology and interference. Water offers freedom of movement, so a woman can move away when she needs to focus, but can just as easily move back when she wants contact.

It is not necessary to actually give birth in the water to achieve the benefits afforded by water. As we have seen, women use water in a variety of ways. Some plan to be in water for labour and birth. Some use the water of a shower to achieve a more localised effect. Watching and listening to the water filling the pool and anticipating getting in can also provide a beneficial effect. Women, who plan to use water during labour only, may decide not to get out for the birth. As practitioners, we must be knowledgeable and familiar with

birth underwater if it happens by chance, as it invariably will. Women are not beholden to birthing in water. Those who get out of the water prior to birth still claim the benefits of being in the bath or pool.

The literature has taught practitioners about safety, such as the importance of maintaining the water temperature as close to body temperature as possible. Explanations about physiology explain the processes that protect the baby who is born under the water. These explanations support a 'hands off' approach to birth under water.

The five women's stories explored in this thesis have given voice to women's experiences of using water for labour and birth and the meaning they make of their experience. This bestows a greater depth of understanding and appreciation of what it is that women have to say about using water for labour and birth. The power of the stories is in their ability to offer symmetry to the findings from other forms of research of water for labour and birth.

Chapter 7.

‘It’s Beyond Water’

The preceeding chapters have revealed the meaning women make of their experience of using water for labour and birth and have demonstrated that both ‘Getting *to* the water’ and ‘Getting *into* the water’ are much more than the simple acts they may appear. When given the opportunity to reflect on their experience and to talk about what they were thinking and feeling at the time, the five women in this study were able to provide important insights into the benefits afforded to them. These findings are supported in many instances, by evidence from other research. Many of the women derived benefit from simply anticipating the use of water such as feeling calm, relaxed and in control. The difficulties that one woman encountered, i.e with monitoring the water temperature, have important implications for midwifery practice in order that water immersion is used safely and has resulted in policy advice for my local hospital. This chapter concludes the thesis by reflecting on the experiences described by the five women participants; describing ideas for further research and exploring the implications of this study for midwifery knowledge and practice. As a result of this study I have come to see that immersion in water during labour and birth is much more than I imagined.

My main aim was to make a contribution to midwifery knowledge about the use of water for labour and birth from the perspective of the women. The five women's stories have provided a rich source of knowledge about using water for labour and birth. It is my hope that when anyone reviews the literature on water for labour and birth they will look at both the evidence from randomised

controlled trials and other forms of quantitative research and the evidence from stories that women tell about their experience of using water for labour and birth and choose to give validity to both forms of knowledge.

At the beginning of this thesis I posed some questions in relation to the use of water for labour and birth. Those questions were; does using water immersion during labour and birth make a difference to women and their babies, and if so, how? and is water immersion safe? Having heard the women's stories, it clearly does make a difference, it might not be measurable and it can not even be very clearly articulated, but it does make a difference.

As revealed in the literature review, research in the form of RCT's has answered some of these questions. One systematic review of three trials (Rush et al. 1996, Cammu et al. 1994, and Schorn et al. 1993), concluded that there is no statistically significant difference in outcomes for women using water immersion in labour compared with those not using water immersion in labour (Nikodem, 2000).

The types of outcome measures employed by the systematic review included: augmentation of labour and the duration of labour and birth, high blood pressure, amniotic fluid volume in women with oligohydramnios, mode of delivery, trauma to the birth canal requiring suturing, maternal infection, self-esteem, postpartum depression and breastfeeding. Also assessed were fetal and neonatal outcomes such as: lung hypoplasia, abnormal fetal heart rate patterns needing intervention, neonatal condition, admission to neonatal intensive care

unit, temperature, neonatal infection rates and perinatal deaths (Nikodem, 2003). The trials also assessed maternal experience and satisfaction of labour, ratings of pain and the use of analgesia/anaesthesia. The results concluded that there is a tendency for the use of water during labour to decrease the use of other pain relief methods during labour.

In two of the included studies, women were questioned or surveyed about satisfaction or comfort measures related to use of the water as a secondary objective or interest. On the first day postnatally, Cammu et al. (1994) surveyed all women who used the bath, and found that 80% of women said it had a soothing effect on the pain. Nearly 100% of women reported that bathing had relaxed their bodies in between contractions and 88% of women said they would use water again in a subsequent labour. They concluded that bathing gives great satisfaction to users but paradoxically in commenting on a high consumer satisfaction among users of 'alternative therapies', stated that, "unfortunately, satisfaction is not a reliable index of effectiveness" (Cammu 1994, p.471). Clearly Cammu and colleagues had a particular form of effectiveness in mind and did not count care that women found to be satisfying as 'effective'. Their assumption needed to be challenged and it is my hope that the study I have described here has done just that. Rush et al. (1996) surveyed a sub-sample of women regarding their use and satisfaction with comfort measures in labour. The questionnaire identified nine comfort measures, which included epidural, shower, tub, whirlpool, walking, coaching, narcotic, massage, and having a nurse to sit with the woman. The women preferred to write answers rather than tick boxes and their feedback was particularly rich in

the areas of satisfaction with the bath and with having a coach or nurse directly with them during labour. They concluded that whirlpool baths have a positive effect on personal satisfaction. The five women in my study would agree.

The results of the surveys of maternal experience and satisfaction in the randomised controlled trials added little to the overall findings in terms of outcome measures. Measuring satisfaction, by means of quantitative methods such as survey or questionnaire, will never be able to illicit an in-depth understanding of the knowledge, insight, feeling and belief of women about using water for labour and birth. To gain a greater depth of understanding of women's attitudes and feelings, qualitative methods must be employed in the form of narrative inquiry using interviews, observation and story telling.

The findings of this narrative inquiry highlight that fact that using water for labour and birth may change the processes rather than influence the outcomes. By processes I mean that water provides women with more choices, increased ability to control what is happening to them, a greater sense of privacy, shelter and protection. The relaxation afforded by water immersion enabled women to focus internally on what is happening to them, their bodies and their babies. Importantly, women use water to cope with pain, not necessarily to remove or diminish pain.

Limitations

The small scale of this project (five participants) means that the findings are not considered to be generalisable to the wider population of birthing women, although the sample size in qualitative inquiry is adequate if it produces new

and richly textured understandings of experiences (Sandelowski, 1991). I believe that the women's stories of using water for labour and birth have provided a greater understanding of the experiences and the meaning women make of the experience. The stories will certainly spark recognition to women and midwives in similar situations as they read them, for we have probably all at some time had similar experiences. Reading stories prompt us to remember other stories and so the picture evolves (Conle, 2000).

Implications for Further Research

During the process of reflection that is employed in ascertaining the findings I have contemplated two features of significance generated in this project that warrant further research to examine the impact on women during pregnancy, labour and birth. These are the environment of birth and the shared philosophy of the woman and her midwife.

The women commented about the environment of their birth. Linda said much, especially in relation to the bed and the equipment of the hospital delivery room.

> *Hospitals scare the hell out of me because they're just so anaesthetic* (sic) *and so you know, but it was when we were in the bath and that, it's like you weren't actually in the hospital, you could have been at home, you could have been anywhere. The room itself - I mean it had the basic hospital bed, it had the lazyboy and another chair beside the bed with all the hospital equipment around it, I mean they are nice rooms, nicely painted rooms and so forth but they're still hospital rooms, the hospital bed, I think it's the bed more than anything that puts everybody off because it looks*

> *like a hospital bed, it's so cold and impersonal whereas the bath itself, I mean the bath you can feel a little bit more at home, you didn't feel like you were in a hospital room you felt like you could have been at home just having a bath sort of thing, relaxing (Linda).*

Past research comparing home-like versus conventional institutional settings has found lower rates of intrapartum analgesia/anaesthesia, fetal heart rate abnormalities, augmented labours and immobility during labour. The research also reported greater satisfaction with care. However, the research also reports that substantial numbers of women allocated to home-like settings were transferred to standard care rooms before or during labour (Hodnett, 1999). Exploring the reasons why women are transferred out of the home like setting is an area where I think that more research is necessary. Equally important is the role of planners and designers of women's birthing spaces within the institutions in terms of providing areas that are more conducive to physiological birth. This linked well with my reflections on the philosophy of caregiver.

Several included studies have noted the positive effect to the woman of continuous support in labour. There is little doubt that the assiduousness of the midwife and supporters of the woman help to promote positive outcomes for women using water for labour and birth. A systematic review of fourteen trials involving more than 5000 women found that the continuous presence of a support person reduced the likelihood of medication for pain relief, operative vaginal delivery, caesarean section, and a five minute Apgar score less than seven (Hodnett, 1999).

Yet I believe that for women to achieve physiological birth, in any setting, we must research beyond the continuous presence of a supporter or caregiver. The philosophy of the midwife and her belief in birth as a normal life event should work in partnership with the woman who believes the same thing. If this philosophy is strong then the woman is empowered to achieve non-interventionist care in an environment that supports her choices. An exploration of the effects of philosophy and environment on the outcomes for women during labour and birth would be a valuable asset to the body of knowledge for birthing women.

Recommendations for midwifery practice arising from this study

Midwives must reflect deeply on their role as guardians of normal birth and develop strategies for how they can work in partnership with women to achieve this.

Midwives need to examine their personal philosophy of birth in terms of the theoretical underpinnings of woman-centredness, partnership and continuity of care, which informs midwives' practice.

Midwives must reflect on and critically examine the outcomes of their care on a regular basis while developing strategies to improve them.

Listening to the stories of women provides us with insights into what is important to them. As midwives, we must take heed and make every attempt to

honour women's knowledge of themselves. Women's knowledge is evidence for practice.

Midwives must advocate for women by ensuring that the environment for birthing is favourable in that it provides privacy, comfort, support and warmth leads to greater relaxation and fosters physiological birth.

Conclusion

Water inspires poetry, as represented on the opening page of this study, and is found in mythology. The classic late 15th century painting by Botticelli, the *Birth of Venus*, depicts the story of the birth of Venus (Aphrodite). Aphrodite, whose name is derived from *aphros* or foam, emerged fully-grown from the sea. History abounds with evidence that water for labour and birth has occurred in many centuries and many different cultures.

Water has symbolic, life-giving, nurturing, soothing (and sometimes tumultuous) associations. Warmth and water come from the first environment we experience - "we all spend the first eternal dreamtime of our lives in the same internal mother ocean" (Deakin, 1999). Therefore it may be an important foundational memory to which we return when giving birth. Water is integral to life itself and therefore cannot be denied to women during the process of giving birth.

Stories of women's experience of using water for labour and birth have broadened our understanding of the meaning they make of the experience, and have demonstrated that the efficacy of water immersion goes beyond

measurable outcomes. Being in water during labour and birth is not the end product; it's not the water itself that makes a difference. It is a shared philosophy and a shared belief in birth as a normal life event that supports women to use water. It is also the planning, the preparation, the education and the anticipation of using water for labour and birth, supported by safe and judicious use, that creates an environment that promotes relaxation, privacy and a release that enables and empowers women to maintain control.

It's beyond water.

Appendices

Glossary of terms

Apgar score - Evaluation of the newborn infant's physical status by assigning numerical values (0 to 2) to each of 5 criteria: 1) heart rate, 2) respiratory rate, 3) muscle tone, 4) response to stimulation and 5) skin colour. This score is given at 1 minute, 5 minutes and 10 minutes after birth.

Amniotic fluid - A liquid within the amniotic sac that surrounds the fetus and protects it from mechanical injury. The 'waters'.

Artificial rupture of the (fetal) membranes (AROM) - Rupture of the amniotic membranes induced by an amniohook or similar.

Augmentation - Synthetic hormone added to intravenous (IV) infusion to enhance labour contractions.

Chorioamnionitis/ Amnionitis - Intrauterine infection of the fetal membranes and fluid during pregnancy or labour.

CNM - Certified Nurse-Midwife, a term used in the USA.

Endometritis - Intrauterine infection involving the lining of the uterus after the birth.

Intrapartum - During the labour.

Multigravida - A pregnant woman who has been pregnant one or more times previously.

Multipara's/ Multiparous - A woman who has given birth at least two times to an infant, live born or not, weighing 500gms or more or having a length of gestation of at least 20 weeks.

Nullipara's/ Nulliparous - A woman who has never borne children.

Operative delivery - Forceps, vacuum extraction or caesarean section.

Postpartum - After the birth of the baby and placenta.

Primigravida - A woman in her first pregnancy.

Primiparous - A woman who has given birth for the first time.

Scalp electrode - Spiral metal clip attached to the fetal scalp during labour to allow continuous electronic fetal heart monitoring.

SRM - Spontaneous rupture of the membranes, or breaking the waters.

VBAC - Vaginal Birth After Caesarean Section.

VE - Vaginal examination.

Water immersion - When a large part of the woman's body is able to be under water when in the birth pool or bath.

Letter to midwives

"Stories of Women's Experience of Using Water for labour and Birth"

Dear Midwife,

My name is Robyn Maude. I am a self-employed midwife with Domino Midwives Wellington. As part of my studies for the Master of Arts (Applied) Midwifery, I am undertaking a research project to explore stories of women's experience of using water for labour and birth.

I would be grateful if you could give an information sheet to any women in your care (who identify as Pakeha/European) who have indicted on their care plans that they would like to use water for labour and birth. The women should contact me directly if they are interested in taking part in this study.

I hope to hear from 6-8 women who are due to have their babies in May, June or July 2001. I will talk with the first 4 who give birth who have used water in labour and/or for birth.

I would like to visit the women before they give birth so that they can get to know me a little prior to the interviews. This is purely a contact visit to set the scene.

The conversations will be held in the woman's home (or a place of her choice) on the second or third day after the birth and will be for up to 90 mins. The conversations will be audio-taped. I will encourage the women to have their babies with them so that breastfeeding is not interrupted. There will be a second visit of up to 90 mins at a later date so that the transcripts of the interviews can be checked for accuracy with the women.

The research project has received ethical approval from the Wellington Regional Ethics Committee.

My supervisors are Rose McEldowney and Joan Skinner from the Graduate School of Nursing and Midwifery, Victoria University of Wellington. They can be contacted as follows:

Rose McEldowney Ph:(04) 4636651
e-mail:Rose.McEldowney@vuw.ac.nz
Joan Skinner Ph: (04) 4636654
e-mail:Joan.Skinner@vuw.ac.nz

My contact details are:
Home phone: (04) 4769319
Home Fax: (04) 4769315
Pager (04) 8010206
Mobile: 021650504
Email: rmaude@clear.net.nz

Please feel free to call me for further details,

Yours sincerely,

Robyn Maude

Confidentiality Agreement for Lead Maternity Care (LMC) Midwives

"Stories of Women's Experience of Using Water for Labour and Birth"

I……,LMC Midwife, agree not to divulge the name or any identifying details of any women from my practice who participate in the above research project.

Name of Midwife:

Signature of Midwife: Date:

Information sheet

" Stories of Women's Experience of Using Water for Labour and Birth."

My name is Robyn Maude. I am a self-employed midwife and part of the Domino Midwives Wellington.
I am conducting a research project to produce a thesis as part of my Master of Arts (Applied) Midwifery degree.

My research project is to gather stories from women who use water for labour and/or birth and to explore the meaning they make of the experience.
There is some literature written about the use of water, but very little directly related to what women think or say.

I have asked your midwife to give this information sheet to women (who identify as Pakeha/European) in their care who have indicated on their care plans that they wish to use water for labour and/or birth.

You are cordially invited to participate in this study.

If you agree to participate I would like to visit you before you give birth, to introduce myself and to obtain consent. After your baby is born, I will return to talk with you about your recent birth experience, for up to 90 mins. This conversation would take place in your home (or any other place you choose instead) on the second or third day after the birth of your baby. There will be a third visit of about 90mins, at a later date, to check the accuracy of the transcription of the audio-tapes with you.
At the first visit after the birth of your baby, we will have a conversation and you can talk freely and openly about your labour and birth experience. You can choose a pseudonym to ensure that your name will not be linked to the data. The conversations will be audio-taped on two tape recorders and later transcribed in full.
The transcriber and your midwife will sign a confidentiality agreement to protect your identity. My research supervisor will have access to the tapes and typed transcripts but will only be aware of the pseudonym and not your real name. The data will be stored securely and password protected.
After the initial conversation has been completed and subsequently transcribed, I will arrange a second visit to discuss the accuracy of the transcript and any other questions that have arisen for you after the first conversation. You will be given an opportunity to review the transcript of your conversation and to add, remove or change any information that you do not wish to have included. The tapes of the conversations will be returned to you or erased at the end of the period of ten years.

I will write a report of the analysis of any themes that emerge from our conversations, which will be assessed by my supervisor and an external

examiner. The findings of the report may be published in professional journals, and may be presented at conferences. A summary of the findings will be made available to you if you wish. A copy of the completed thesis will be lodged in the Victoria University of Wellington Library and at the Graduate School of Nursing and Midwifery.

As a participant you have the right to:

- decline to participate at any time;
- refuse to answer any particular questions, and you may have the audio tape turned off at your request;
- withdraw from the study at any time;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used (you may choose a pseudonym); and
- be given access to a summary of the findings of the study when it is completed.

If you have any concerns about the research processes you can contact my supervisors or the NZCOM Resolution Committee Wellington on 8016180.

***If you are interested in being a participant in this study, please contact me on* (04) 476-9319 (home, evenings) or on pager (04) 801-0206 any time.**

My supervisors are:
Rose McEldowney and she can be contacted on (04) 463-6651 or email at Rose.McEldowney@vuw.ac.nz and
Joan Skinner and she can be contacted on (04) 463-6654 or email at Joan.Skinner@vuw.ac.nz

The proposed study has been granted ethical approval to proceed by the Wellington Regional Ethics Committee

Thankyou for considering this invitation

Robyn Maude
RN, RM, BN.
Student, Master of Arts (Applied) Midwifery, Graduate School of Nursing and Midwifery. Victoria University of Wellington,

Consent form

" Stories of Women's Experience of Using Water for Labour and Birth".

I have read and understood the information sheet about this study. Robyn Maude has answered questions I have asked to my satisfaction. As a participant I have the right to:

- decline to participate at any time;
- refuse to answer any particular questions and to have the audio tape turned off at my request;
- withdraw from the study at any time;
- ask any questions about the study at any time during participation;
- provide information on the understanding that my name will not be used (I can select a pseudonym instead); and
- be given access to a summary of the findings of the study when it is completed.

I understand that my participation in this study is voluntary and will require up to 90 mins of my time on at least two separate occasions and an initial visit antenatally to meet the researcher. I am aware that my identity will remain confidential and information will be securely stored. I am also aware that the researcher will use the services of a transcriber and they will be bound by a confidentiality agreement.

Should issues arise that may cause me to become uneasy or distressed I am at liberty to contact the researcher Robyn Maude, her supervisors Rose McEldowney or Joan Skinner or the Ethics Committee at Victoria University or Wellington Regional Ethics Committee or the NZCOM Resolution Committee Wellington on 8016180.

I agree to participate in this study under the conditions set out in the information sheet, and I agree to have the two interviews audio taped.

Name of participant: Signature of Participant:

Date:

Name of Researcher: Signature of Researcher:

Date:

Confidentiality agreement for transcribing typist

" Stories of Women's Perception of the Experience of Using Water for Labour and Birth".

I……of……
……agree not to divulge any information that I may become aware of in the course of my employment while transcribing audio tapes for Robyn Maude. I will not keep any copies of the audiotapes, transcripts or computer disks or any of the data on the hard drive of my computer. I also agree to store the audiotapes, transcripts and disks securely while they are in my possession.

Name of Transcriber: Signature of Transcriber:

Date:

Letter to Participants

29 March 2002

Dear

Re: Research – "Stories of Women's experience of using water for labour and birth"

I have enclosed a draft of the narrative of the interview we did for the above research.
Please read through and let me know if you think.

I have come very close to completing the project, however, I recently started a new job as a midwifery lecturer at Massey University Wellington.

Because of the pressures of this new job in the first semester, I have applied for a six-month suspension of my enrolment.
This means I am unlikely to finish the thesis until the end of the year. I will be continuing to work on it as often as possible and will ensure that you have a copy of the final work.

I will look forward to any feedback you would care to offer.

Yours sincerely

Robyn Maude
Midwife/Researcher

Letter to midwives regarding photographs

29 March 2002

Dear,

As you know I have interviewed one of your clients for my research project "Stories of women's experience of using water for labour and birth".

Your client has gifted me some photos of the birth to use in my thesis. I have included them in this letter. As you can see, you are in the photo also.

I am therefore asking your permission to use these photos in my thesis.

The thesis will be lodged in the Victoria University Wellington library and therefore available to the public.

I have enclosed a consent form if you agree to the use of these photos. Please sign and return to me in the SAE.

Yours sincerely

Robyn Maude
Midwife/Researcher

Letter to Ethics committee re: Amendment to protocol

10 October 2001

Sharon Cole
Chairperson
Wellington Regional Ethics Committee
Private Bag 7902
Wellington South

Dear Sharon

Re: Amendment to protocol Ref No. 01/05/052

I am writing to inform the committee of an amendment to my original research ethics application that received final approval on 18 May 2001.

The original ethics application stated that I would audiotape conversations with 4-6 women regarding their recent experience of using water for labour and birth. The data would be analysed by exploring themes that emerge.

As part of the process of collecting the women's stories of their birthing experience, I have been gifted some birth photographs that the women wish me to include as part of their story. The photographs will be used within the text of these stories.

The women and midwives will be fully informed of the way in which these photographs will be used in the final report and that their identity will be disclosed. They are also aware that the final thesis will be lodged at the Victoria University Wellington Library, the Graduate School of Nursing and Midwifery, Victoria University and may also be used in journal publications and conference presentation.

I have attached a copy of the extra informed consent form for the use of photographs. These will be given to both the women as participants and the midwives appearing in the photographs.

Yours sincerely

Robyn Maude

Consent Form – Use of Photographs

Women Participants

"Stories of Women's Experience of Using Water for Labour and Birth"

I have gifted some photographs of my birthing experience to Robyn Maude to use in the above research project.

I understand that my identity will be evident if these photographs are used in the written final report.

I am aware that I can withdraw the use of these photographs at any time before final publication of the thesis document.

I am also aware that the final thesis will be lodged in the library at Victoria University Wellington and will be in the public domain.

I am aware that the final thesis will also be lodged in the Graduate School of Nursing and Midwifery at Victoria University Wellington.

I am aware that the material from the final thesis may be used in journal publications and conference presentations in the future.

I have signed the original consent form and hereby give my informed consent for my birthing photographs to be used in the above research project.

Name of participant: *Signature of participant:*

Date:

Consent Form – Use of Photographs

Midwife

"Stories of Women's Experience of Using Water for Labour and Birth"

I am aware that some birthing photographs of a woman I have attended and in which I am also present have been gifted to Robyn Maude to use in the above research project.

I understand that my identity will be evident if these photographs are used in the written final report.

I am aware that I can withdraw the use of these photographs at any time before final publication of the thesis document.

I am also aware that the final thesis will be lodged in the library at Victoria University Wellington and will be in the public domain.

I am aware that the final thesis will also be lodged in the Graduate School of Nursing and Midwifery at Victoria University Wellington.

I am aware that the material from the final thesis may be used in journal publications and conference presentations in the future.

I hereby give my informed consent for the birthing photographs in which I am present to be used in the above research project.

Name of Midwife: Signature of Midwife:

Date:

References

Aird, I. A., Luckas, M. J. M., Buckett, W. M., & Bousfield, P. (1997). Effects of intrapartum hydrotherapy on labour related parameters. *The Australian and New Zealand Journal of Obstetrics and Gynaecology, 37*(2), pp 137-142.

Alderdice, F., Renfrew, M., Marchant, S., Ashurst, H, Hughes, P., Berridge, G. & Garcia, J. (1995). Labour and Birth in water in England and Wales: a survey report. *British Journal of Midwifery.* Vol.3, No. 7, pp 375-382.

Balaskas, J. (1996). Why do women want a birth pool? In B. A. Beech (Ed.), *Water Birth Unplugged proceedings of the First International Water Birth Conference*. Cheshire: Books for Midwives Press.

Beake, S. (1999). Water birth: a literature review. *MIDIRS Midwifery Digest.* Vol. 9, No. 4, pp 473-477.

Burke, E. & Kilfoyle, A. (1995). A comparative study: waterbirth and bedbirth. *Midwives.* January, p. 3-7.

Burns, E. (2001). Waterbirth. *MIDIRS Midwifery Digest.* Vol. 11, No. 3, Supplement 2, pp 510-512.

Burns, E., & Greenish, K. (1993). Pooling information. *Nursing Times*, 24 (89), pp 47-49.

Burns, E and Kitzinger, S. (1998). Midwifery guidelines for use of water in labour. OCHRAD. Oxford Brookes University.

Cammu, H., Clasen, K., Van Wettere, L., & Derde, M.-P. (1994). 'To bathe or not to bathe' during the first stage of labor. *Acta Obstetricia et Gynecologica Scandinavia*, Vol. 73, pp 468-472.

Charles, C. (1998). Fetal hyperthermia risk from warm water immersion. *British Journal of Midwifery.* Vol. 6, No. 3, pp 152-156.

Church, L. (1989). Water birth: one birthing centre's observations. *Journal of Nurse-Midwifery*, Vol. 34, No.4, pp 165-170.

Clandinin, J. & Connelly, FM. (2000). *Narrative inquiry.* San Francisco: Jossey-Bass.

Conle, C. (2000). Narrative inquiry: research tool and medium for professional development. *European Journal for Teacher Education*, Vol. 23, No.1, p. 49.

Crotty, M. (1996). *Phenomenology and nursing research.* Melbourne: Churchill Livingstone.

Crotty, M. (1998). *The Foundations of social research.* Crows Nest: Allen Unwin.

Domino. (2000). *Your Pregnancy*. Wellington: Domino Midwives Wellington.

Davidson, C & Tolich, M. (1999). *Social science research in New Zealand.* Auckland: Longman.

Deakin, R. (1999). In King, A. & Clifford, S. (Ed.). (2000). *The river's voice an anthology of poetry* (1st ed.). Vermont: Chelsea Green Publishing Company.

Eckert, K., Turnball, D. & MacLennan, A. (2001). Immersion in water in the first stage of labor: a randomised controlled trial. *Birth.* Vol. 28, pp 84-93.

Eriksson, M., Ladfors, L., Mattsson, L-A., & Fall, O. (1996). Warm tub bath during labour. A study of 1385 women with prelabour rupture of the membranes after 34 weeks of gestation. *Acta Obstetricia et Gynecologica Scandinavia,* Vol. 75, pp 642-644.

Eriksson, M., Mattsson, L-A., & Ladfors, L. (1997). Early or late bath during the first stage of labour randomised study of 20 women. *Midwifery,* Vol. 13, pp 146-148.

Fleming, J. G. (1983). *The Law of torts* (6th ed.). Sydney: The Law Book Company Ltd.

Flint, C. (1986). *Sensitive midwifery*. Oxford: Butterworth Heinemann

Garland, D & Jones, K. Waterbirth: Updating the evidence. *British Journal of Midwifery.* Vol. 5, No. 6, 368-372.

Gilbert, R. & Tookey, P. (1999). Perinatal mortality and morbidity among babies delivered in water: surveillance study and postal survey. *British Medical Journal.* Vol. 319, pp 483-487.

Goodlin. RC, E. H. K., Williams. NE, Buchan. P. (1984). Shoulder-out immersion in pregnant woman. *Journal of Perinatal Medicine,* Vol. 12, pp 173-177.

Gordon, Y. (1996). Water birth - the safety issues. In B. A. Beech (Ed.), *Water birth unplugged proceedings of the first international water birth conference*. Cheshire: Books for Midwives Press.

Greenhalgh, T. (1997). *How to read a paper. The basics of evidence based medicine.* London: BMJ Publishing Group.

Guilliland, K. (2001). Midwifery autonomy in New Zealand: how has it influenced the birth outcomes of New Zealand women? *New Zealand College of Midwives Journal.* No .23, pp 6-11.

Guilland, K. & Pairman, S. (1994). The midwifery partnership ~ a model for practice. *New Zealand College of Midwives Journal.* No. 11, pp 5-9.

Hall, S., M, & Holloway, I., M. (1998). Staying in control: women's experiences of labour in water. *Midwifery.* Vol. 14, pp 30-36.

Hatch, J.A. & Wisniewski, R. (Ed's). (1995). *Life history and narrative.* London: The Falmer Press.

Hodnett, E. (1999). *Home-like versus conventional institutional settings for birth (Cochrane Review)*). In: The Cochrane Library, Issue 4, 1999. Oxford: Update Software.

Hodnett, E. (1999). *Caregiver support for women during childbirth (Cochrane Review).* In: The Cochrane Library, Issue 4, 1999. Oxford: Update Software.

House of Commons Health Committee. (1992). *Second report: maternity services.* (Winterton Report). HMSO, London.

Johnson, P. (1996). Birth under water - to breathe or not to breathe. In B. A. Beech (Ed.), *Water birth unplugged proceedings of the first water birth conference.* Cheshire: Books for Midwives Press.

Kent, J. (2000). *Social perspectives on pregnancy and childbirth for midwives, nurses and the caring professions.* Buckingham: Open University Press.

Kitzinger, S. (1996). Introduction. In B. A. Beech (Ed.), *Water birth unplugged proceedings of the first international water birth conference.* Cheshire: Books for Midwives Press.

Kitzinger, S. (1992). *Ourselves as mothers.* London: Doubleday.

Koch, T. (994). Establishing rigour in qualitative research: the decision trail. *Journal of advanced nursing.* Vol. 19, pp 976-986.

Koch, T. (1998). Story telling: is it really research? *Journal of advanced nursing.* Vol.28, No.6, pp 1182-1190.

Koch, T. & Harrington, A. (1998). Reconceptualizing rigour: the case for refexivity. *Journal of advanced nursing* Vol.28, No. 4, pp 882-890..

Lawrence Beech, B. A. (Ed.). (1996). *Water birth unplugged proceedings of the first international water birth conference*. Cheshire: Books for Midwives Press.

Leboyer, F. (1974). *Birth without violence* (1st ed.). London: Wildwood House Limited.

Lenstrup, C., Schantz, A, Berget, A, Feder, E, Roseno, H Hertel, J. (1987). Warm tub during delivery. *Acta Obstetricia et Gynecologica Scandinavia,* Vol. 66, pp 709-712.

Lepori, B. (1994). Freedom of movement in birth places. *Children's Environments.* Vol. 11, No.2, pp 81-87.

Maternity Services: A reference document: Health Funding Authority. (2000). Ministry of Health.

Maude, R and McIver, F. (2001). Report of the birth pool audit. In Midwifery conference book of proceedings. *Midwifery research: gaining ground and influencing practice.* Wellington: Centre for Midwifery and Nursing Practice and Research.

McCandlish, R., & Renfrew, M. (1993). Immersion in water during labour and birth: the need for evaluation. *Birth,* Vol. 20. No. 2, pp 79-85.

Nikodem, V. C. (2000). *Immersion in water in pregnancy, labour and birth (Cochrane review)* (Issue 4), [CD Update Software]. The Cochrane Library.

Odent, M. (1983). Birth under water. *The Lancet*, Vol. 24, No. 31, pp 1476-1477.

Odent, M. (1990). *Water and sexuality*. London: Penguin Group.

Odent, M. (1997). Can water immersion stop labour? *Journal of Nurse-Midwifery,* Vol. 42, No. 5, pp 414-416.

O'Hare JP, H. A., Summerhayes C, Lunn G, Evans JM, Walters G, Corrall RJM, Dieppe PA. (1985). Observations on the effects of immersion in Bath spa water. *British Medical Journal,* Vol. 291, 1747-1751.

Ohlsson, G., Buchhave, P., Leandersson, U., Nordstrom, L., Rydhstrom, H & Sjolin, I. (2001). Warm tub bathing during labour: maternal and neonatal effects. *Acta Obstetricia Et Gynecologica Scandinavica.* Vol. 80, No. 4, pp 311-314.

Opie, A. (1999). Chapter 17. Unstructured interviewing. In C. Davidson & M. Tolich (Eds.), *Social science research in New Zealand: many paths to understanding.* Auckland: Longman.

Page, L. (2000). *The new midwifery - science and sensitivity in practice*. Edinburgh: Churchill Livingstone.

Papps, E & Olsen, M. (1997). *Doctoring childbirth and regulating midwifery in New Zealand- A foucauldian perspective.* Palmerston North: The Dunmore Press.

Redwood, R. (1999). Caring control: methodological issues in a discourse analysis of waterbirth texts. *Journal of Advanced Nursing*, Vol. 29, No. 4, pp 914-921.

Robertson, P., Huang, L. J., Croughan-Minihane, M. S., & Kilpatrick, S. J. (1998). Is there an association between water baths during labor and the development of chorioamnionitis or endometritis? *American Journal of Obstetrics and Gynaecology,* Vol. 178, No. 6, pp 1215-1221.

Roberts, K. & Taylor, B. (1998). *Nursing research processes: an Australian perspective.* Melbourne: Nelson ITP.

Rosenthal, M. (1996). The use of warm immersion in labour at the family birthing centre of upland (California). In B. A. Beech (Ed.), *Water birth unplugged proceedings of the first international water birth conference.* Cheshire: Books for Midwives Press.

Rosevear, SK., Fox, R. & Stirrat, GM. (1993). Birthing pools and the fetus. *Lancet.* Vol. 324.

Rush, J., Burlock, S., Lambert, K., Loosely-Millman, Hutchison, B., & Enkin, M. (1996). The effects of whirlpool baths in labour: a randomised-contolled trial. *Birth,* Vol. 2 3, No. 3, pp 136-143.

Sargunas, T. (1990). Conscious birth in the Soviet Union. *Mothering* (Spring), pp 83-86.

Sandelowski, M. (1991). Telling stories: narrative approaches in qualitative research. *IMAGE.* Vol. 23, No. 3, pp 161-166.

Sidenbladh, E. (1983). *Water babies.* London : A & C Black.

Schorn, M., McAllister, JL, Blanco, JD. (1993). Water immersion and the effect on labor. *Journal of Nurse-Midwifery,* Vol. 38. No. 6, pp 336-342.

Silverman, D. (2000). Fieldnotes and data analysis, d*oing qualitative research- a practical handbook*.: SAGE Publications Ltd, London.

Sweet,B. (Ed), (2000). *Mayes' midwifery a textbook for midwives.*12th Edition. Bailliere: London. Tindall

The Concise Oxford Dictionary. (1976). (6th edition). 9th impression. Oxford: Oxford University Press.

Tolich, M., & Davidson, C. (1999). Chapter 7. Observation techniques: jotted, mental, and expanded fieldnotes. In A. Rogers (Ed.), *Starting fieldwork: an introduction to qualitative research in New Zealand*. Melbourne: Oxford University Press.

Waldenstrom, U., & Nilsson, C.-A. (1992). Warm tub bath after spontaneous *r*upture of the membranes. *Birth*. Vol.19, No. *2*, pp 57-63.

Williams, B. (1994). Patient satisfaction: a valid concept? *Social science medicine*. Vol. 38, No. 4, pp 509-516.