‘No worries’

A longitudinal study of fear, attitudes and beliefs about childbirth from a cohort of Australian and Swedish women

HELEN HAINES
Dissertation presented at Uppsala University to be publicly examined in Auditorium Minus, Gustavianum, Akademigatan 3, Uppsala, Friday, January 18, 2013 at 02:10 for the degree of Doctor of Philosophy (Faculty of Medicine). The examination will be conducted in English.

Abstract


Much is known about childbirth fear in Sweden including its relationship to caesarean birth. Less is understood about this in Australia. Sweden has half the rate of caesarean birth compared to Australia. Little has been reported about women’s beliefs and attitudes to birth in either country. The contribution of psychosocial factors such as fear, attitudes and beliefs about childbirth to the global escalation of caesarean birth in high-income countries is an important topic of debate.

The overall aim of this thesis is to investigate the prevalence and impact of fear on birthing outcomes in two cohorts of pregnant women from Australia and Sweden and to explore the birth attitudes and beliefs of these women.

A prospective longitudinal cohort study from two towns in Australia and Sweden (N=509) was undertaken in the years 2007-2009. Pregnant women completed self-report questionnaires at mid-pregnancy, late pregnancy and two months after birth. Fear of birth was measured in mid-pregnancy with a tool developed in this study: the Fear of Birth Scale (FOBS). The FOBS showed promise as a clinically practical way to identify women with significant fear. A similar prevalence of fear of birth (30 percent) was found in the Australian and Swedish cohorts (Paper I).

The Swedish women had attitudes indicating a greater concern for the personal impacts of birth and a belief system that situated birth as a natural event when compared to the Australian women (Paper II). Finally, when women’s attitudes and levels of fear were combined, three profiles were identified: Self determiners, Take it as it comes and Fearful (Paper III). Belonging to the Fearful profile had the most negative outcomes for women including higher rates of elective caesarean, more negative feelings in pregnancy and post birth and poorer perceptions of the quality of their antenatal and intra-partum care (Paper IV).

Keywords: Fear of birth, attitudes, beliefs, Australia, Sweden, cluster analysis, profiles

Helen Haines, Uppsala University, Department of Women's and Children's Health, Obstetrics and Gynaecology, Akademiska sjukhuset, SE-751 85 Uppsala, Sweden.

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Dedication

To my father Jack Carew

A dairy farmer from Eurack…

16th October 1930 - 5th November 2012
List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.


IV. Haines H, Hildingsson I, Pallant JF, Rubertsson C. The role of women’s attitudinal profiles in their satisfaction with the quality of their antenatal and intra-partum care (Submitted manuscript).

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### Abbreviations

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<tr>
<th>Abbreviation</th>
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<tr>
<td>BAPS</td>
<td>Birth Attitudes Profile Scale</td>
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<tr>
<td>CBRF</td>
<td>Childbirth Related Fear.</td>
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<td>CS</td>
<td>Caesarean Section</td>
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<td>FOBS</td>
<td>Fear of Birth Scale</td>
</tr>
<tr>
<td>GP</td>
<td>General Practitioner (family physician)</td>
</tr>
<tr>
<td>W-DEQ</td>
<td>Wijma Delivery Expectancy/ Experience Questionnaire</td>
</tr>
<tr>
<td>PCA</td>
<td>Principal Components Analysis</td>
</tr>
<tr>
<td>QPP</td>
<td>Quality from the Patient’s Perspective</td>
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<tr>
<td>VAS</td>
<td>Visual Analogue Scale</td>
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<tr>
<td>VBAC</td>
<td>Vaginal Birth after Caesarean</td>
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</table>
Preface

‘No worries’ is claimed to be the most common colloquial expression in the Australian lexicon (1). If you thank an Australian, the reply is almost universally ‘no worries’. If you ask an Australian for anything ranging from directions to the post office to passing the salt, you will receive what you requested, prefaced by ‘no worries’.

Linguists have described the expression as one which illustrates some important parts of Australian society including a ‘casual optimism’ (2). The phrase according to Lewis, in his book ‘When Cultures Collide: Leading Across Cultures’ (3), reflects the laissez-faire attitude in Australian culture.

The use of the expression in the title for this thesis captures my own relaxed attitude to the concept of childbirth fear when I first encountered an ‘Aurora’ clinic in Sweden in 2004 - “special clinics for women with fear of birth?” I was amazed. We had no such thing in Australia and as far as I knew, we did not need them. What I did not appreciate then, was that when it comes to childbirth, for many women including Australians, ‘no worries’ could not be further from the truth.
This thesis is one part of a larger population based study from Sweden titled ‘Having a baby in Västernorrland’ (4). The original concept for the study did not include a site outside of Sweden, however the opportunity of collaboration with an Australian research team serendipitously arose, lending the possibility to create cross-cultural comparisons of pregnancy and childbirth. This was a rare opportunity to find commonalities as well as differences in women’s experiences using the same questions administered at a similar point in time. We endeavoured to find two populations which were genuinely comparable. The study was scoped to match a convenience site in Victoria, Australia, with a ‘like’ subpopulation of the Västernorrland cohort.

The proposal for this approach originally came from a curiosity to better understand the reasons behind the disparity in the prevalence of caesarean birth between Sweden and Australia. At the time of the study, women in Australia had almost twice the chance of giving birth by caesarean compared to demographically similar Swedish women (5, 6). In seeking to understand what lay beyond the established medical indications for caesarean birth in these two industrialised nations, an enquiry into the psychosocial aspects of pregnancy and birth in both cultural contexts was proposed. The suggestion that psychological factors are associated with pregnancy outcomes is pertinent to improving maternity care in that midwives or doctors may be able to identify risk via antenatal psychological screening and then seek to find appropriate ways to support mothers (7).

At the time of the study design there was much discussion about women’s request for caesarean being a driver for the escalation in actualised caesarean births (8, 9). Popular press weighed in on the debate and utilised catch phrases such as: ‘too posh to push’ (10) or ‘births scheduled to golf commitments’ (11), thus polarising opinion firmly into blaming women or obstetricians. In terms of authentic requests by women for caesarean delivery many studies have now demonstrated that it is fear not convenience that is behind this demand (12, 13).

Doctors and midwives all over the world struggle with the challenge of using intervention judiciously to keep birth safe (14). In under-resourced nations where women have poorer physical health status and limited access to antenatal care and skilled birth attendants, pregnancy and childbirth complications are the leading causes of death among women of reproductive age (15). In an industrialised western context, fear for the life of a mother and a
baby cannot be justified in the same way. Yet fear prevails for women, their partners and the health professionals who care for them (16). There is an undercurrent of fear in modern maternity practice either implicit or explicit (16). Some women are afraid for the safety of their baby, their capacity to cope and even for their own life (17-20). Obstetricians are afraid of being responsible or blamed for catastrophe, however remote the likelihood (21). It is not within the scope of this thesis to investigate the issue of doctors’ or midwives’ fear or attitudes to birth - real and important as they are (22-24). The focus is on the women.

Upon accepting the assumption that fear of birth is a construct that can in some way be measured, the first part of this work was to assess the prevalence of childbirth fear at a time early in the pregnancy when most maternity carers encounter the majority of pregnant women. This measurement was approached from a practical clinical perspective, building on previous work and further developing simple screening questions easily achieved in an antenatal visit.

The second part was to use a bottom-up perspective to look at what attitudes and beliefs are held by women and what relationships they have with fear. An examination of attitudinal differences between the two cultures was undertaken. From this point, this bottom-up thinking drew together the separate parts to construct a profile. From there an analysis (top-down thinking) deconstructed what impact this profile has on particular outcomes such as mode and experience of birth.

Theoretical framework
The desire to look beyond the biomedical reasons for variations in mode and experience of birth is predicated upon an acceptance of the social ecological model of health (25). The assumptions of this model are that patterns of health and well-being are affected by the connections among biologic, behavioural and environmental factors. The relationships and interactions throughout the life course of individuals, families and communities impact upon individual choices and actions and ultimately their physical and mental health status (25). It is a comprehensive public health approach that moves beyond biophysical risk to include the norms, beliefs, and social and economic systems that create the conditions under which an individual experiences health or ill health. The ecological model of health assumes that the micro level behaviours and subsequent health outcomes of an individual are not created in isolation of macro level influences from their immediate and wider environment.

This model underpins the proposition that to optimise outcomes for pregnant women, midwives and doctors need to work with the woman from a psychosocial as well as physical perspective. It acknowledges that irrespective of physical status, pregnant women in different geopolitical environ-
ments may experience quite different birth outcomes based on the prevailing cultural attitudes, access to and models of maternity care. Figure 1 graphically centres the pregnant woman within the wider contextual forces which impact upon her health and that of her baby.

Figure 1. Ecological Model of Health as it relates to maternity care
Cross-cultural considerations

Consistent with the ecological model of health, the following quote from Brigitte Jordan’s (26) landmark anthropological study of birth in four cultures challenges the researcher to look more broadly than biology when attempting to understand the process of human birth:

Childbirth is an intimate and complex transaction whose topic is physiological and whose language is cultural. (p.3)

Cross-cultural research helps to improve our understanding of outcomes for mothers, babies and families by using a biosocial framework (26). This concept, described by Jordan (26), considers both the universal biological function of birth and the specific socio-cultural milieu in which it is situated. While there are no ‘rules’ for how cross-cultural research in childbirth should be approached, Jordan suggests that comparisons should include both the medical-physiological and social-ecological aspects of childbirth. Jordan’s seven dimensions for analysis in her work are: the local definition of the event; preparation for birth; attendants and support systems; the ecology of birth; the use of medication; the technology of birth; and the locus of decision-making (26). While not explicit under these headings, the data collected in our study can be broadly categorized under these seven dimensions.

Demographics of Sweden and Australia

In seeking to understand and compare the experiences, attitudes, beliefs and preferences for birth in two cultural settings, it is important to have a clear picture of how comparable those countries are in terms of wider geo/political/economic influences.

Australia has a land mass of 7,682,300 sq km with a population of 22,015,576 who mostly live on the eastern seaboard. The land mass (410,335 sq km) and population of Sweden (9,103,788) are comparatively smaller, however the urbanisation of both countries is similar (27).

Sweden and Australia are both high income, industrialised, Western democracies with similar life expectancy (Table 1). Using the measure of per capita gross domestic product (GDP), Australia and Sweden are economic neighbours - they are ranked 22 and 21 respectively in the world. Per capita GDP (quoted in 2011 USD) is $40,800 (2011 estimate) in Australia and $40,900 (2011 estimate) in Sweden (27). Proportionally, from a population perspective, Australians are similarly fertile (total fertility rate 1.77 per woman in Australia compared with 1.68 per woman in Sweden) but younger (median age 37.9 compared to 42.2 median age) and fatter (16.4 percent obese compared to 12 percent) when compared with Sweden. The infant mortality rate in Sweden is 2.3 deaths per 1000 births compared to Australia where it is 4.5 per 1000 births. The maternal mortality rate is also lower in
Sweden (4 deaths/100,000 live births compared with 7 deaths/100,000 live births).

While the Swedish government spends more on the health and education of its citizens than the Australian government (27), both nations share a philosophy of universal access to high quality health care funded by the state through the taxation system. The link between cultural ideas regarding the health and wellbeing of a nation and health systems is mediated by the political structure of a country (28). It has been contended that the political system of Sweden promotes an attitude of solidarity which allows the people to see their own health care in the light of the larger system and promotes cooperation between different caregivers in the health care (and maternity care) system (16). The health system in Australia has elements of this solidarity with its access to universal public health. It also has a parallel private health system where citizens can choose to purchase health insurance subsidised by the taxation system. The capacity for citizens to exercise choice to either utilise public or private health care creates some tension between the universal equity and the consumerist approach. By the end of 2011, 10.4 million people or 46 percent of the Australian population, were covered by private health insurance (29).
### Table 1 Demographic characteristics of Sweden and Australia (27)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Australia</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Population</td>
<td>22,015,576 (July 2012 est.)</td>
<td>9,103,788 (July 2012 est.)</td>
</tr>
<tr>
<td></td>
<td>Rate of urbanization: 1.2% annual rate of change (2010-15 est.)</td>
<td>Rate of urbanization: 0.6% annual rate of change (2010-15 est.)</td>
</tr>
<tr>
<td>3. Major cities - population</td>
<td>Sydney 4.429 million; Melbourne 3.853 million; Brisbane 1.97 million; Perth 1.599 million; Canberra (capital) 384,000 (2009)</td>
<td>Stockholm (capital) 1.279 million (2009)</td>
</tr>
<tr>
<td>4. Age structure</td>
<td>0-14 years: 18.3% (Male 2,040,848/Female 1,937,544)</td>
<td>0-14 years: 15.4% (Male 722,558/Female 680,933)</td>
</tr>
<tr>
<td></td>
<td>15-64 years: 67.7% (Male 7,469,092/Female 7,266,143)</td>
<td>15-64 years: 64.8% (Male 2,982,268/Female 2,910,135)</td>
</tr>
<tr>
<td></td>
<td>65 years and over: 14% (Male 1,398,576/Female 1,654,508) (2011 est.)</td>
<td>65 years and over: 19.7% (Male 800,169/Female 992,665) (2011 est.)</td>
</tr>
<tr>
<td>5. Median age</td>
<td>Total: 37.9 years Male: 37.1 years Female: 38.6 years (2012 est.)</td>
<td>Total: 42.2 years Male: 41 years Female: 43.3 years (2012 est.)</td>
</tr>
<tr>
<td>6. Population growth rate</td>
<td>1.126% (2012 est.) country comparison to the world: 106</td>
<td>0.168% (2012 est.) country comparison to the world: 180</td>
</tr>
<tr>
<td>7. Death rate</td>
<td>6.94 deaths/1,000 population (July 2012 est.) country comparison to the world: 135</td>
<td>10.21 deaths/1,000 population (July 2012 est.) country comparison to the world: 50</td>
</tr>
<tr>
<td>Indicator</td>
<td>Australia</td>
<td>Sweden</td>
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<td>---------------------------------------------</td>
</tr>
<tr>
<td>8. Birth rate</td>
<td>12.28 births/1,000 population (2012 est.)</td>
<td>10.24 births/1,000 population (2012 est.)</td>
</tr>
<tr>
<td></td>
<td>country comparison to the world: 159</td>
<td>country comparison to the world: 187</td>
</tr>
<tr>
<td>9. Sex ratio</td>
<td>At birth: 1.06 Male(s)/Female under 15 years: 1.05 Male(s)/Female 15-64 years: 1.03 Male(s)/Female 65 years and over: 0.85 Male(s)/Female Total population: 1 Male(s)/Female (2011 est.)</td>
<td>At birth: 1.06 Male(s)/Female under 15 years: 1.06 Male(s)/Female 15-64 years: 1.02 Male(s)/Female 65 years and over: 0.81 Male(s)/Female Total population: 0.98 Male(s)/Female (2011 est.)</td>
</tr>
<tr>
<td>10. Maternal mortality rate</td>
<td>7 deaths/100,000 live births (2010) country comparison to the world: 166</td>
<td>4 deaths/100,000 live births (2010) country comparison to the world: 178</td>
</tr>
<tr>
<td>11. Infant mortality rate</td>
<td>Total: 4.55 deaths/1,000 live births country comparison to the world: 189 Male: 4.87 deaths/1,000 live births Female: 4.21 deaths/1,000 live births (2012 est.)</td>
<td>Total: 2.74 deaths/1,000 live births country comparison to the world: 218 Male: 2.89 deaths/1,000 live births Female: 2.57 deaths/1,000 live births (2012 est.)</td>
</tr>
<tr>
<td>12. Life expectancy at birth</td>
<td>Total population: 81.9 years country comparison to the world: 9 Male: 79.48 years Female: 84.45 years (2012 est.)</td>
<td>Total population: 81.18 years country comparison to the world: 16 Male: 78.86 years Female: 83.63 years (2012 est.)</td>
</tr>
<tr>
<td>13. Total fertility rate</td>
<td>1.77 children born/woman (2012 est.) country comparison to the world: 161</td>
<td>1.67 children born/woman (2012 est.) country comparison to the world: 171</td>
</tr>
<tr>
<td>14. Health expenditures</td>
<td>8.5% of GDP (2009) country comparison to the world: 45</td>
<td>9.9% of GDP (2009) country comparison to the world: 30</td>
</tr>
<tr>
<td>15. Physicians density</td>
<td>2.991 physicians/1,000 population (2009)</td>
<td>3.583 physicians/1,000 population (2006)</td>
</tr>
<tr>
<td>16. Obesity - adult prevalence rate</td>
<td>16.4% (2005) country comparison to the world 27</td>
<td>12% (2009) country comparison to the world: 49</td>
</tr>
<tr>
<td>17. Education expenditures</td>
<td>4.5% of GDP (2007) country comparison to the world: 80</td>
<td>6.6% of GDP (2007) country comparison to the world: 20</td>
</tr>
<tr>
<td>18. Literacy</td>
<td>Total population: 99% Male: 99% Female: 99% (2003 est.)</td>
<td>Total population: 99% Male: 99% Female: 99% (2003 est.)</td>
</tr>
<tr>
<td></td>
<td>Definition: age 15 and over can read and write</td>
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The World Values Surveys

If childbirth was purely a physiological event there would be little variation in mode of birth across cultures and societies where resources were equal. The presence of different traditions, myths, taboos and birth attendants suggest elements of social construction (30). Health sociologists have proposed that a society’s commonly shared core values are built into the maternity care system (28).

To better understand a comparison of a group of women from Sweden and Australia it is useful to consider what is known about the values of both nations. The World Values Surveys (31) are conducted by a global network of social scientists to understand the basic values and beliefs of societies across the globe. The surveys measure the religion, politics, economy and social life. Two dimensions are illustrated in Figure 2: Traditional/ Secular-rational and Survival/Self-expression which explain more than 70 percent of the cross-national variance of ten key indicators. Each of these dimensions is strongly correlated with scores of other important orientations (31).

Figure 2 shows a map of the world constructed from the World Values Surveys (31) illustrating cultural proximity rather than geographical proximity. For example, the English speaking nations of Australia, Canada, the United States and Great Britain are cultural neighbours while the nations of protestant Europe including the Scandinavian countries, Germany, Switzerland and the Netherlands are another set of cultural neighbours.

Sweden’s position at the extreme high end of the secular rational and self-expression values can be compared with Australia, which is much closer to the midway point between traditional values and secular rational values. Australia is high on self-expression but not as high as Sweden, which clearly stands out on its own even in relation to its closest cultural neighbours. Australia, on the other hand, sits more aligned with Britain and New Zealand. Sweden as seen by the work of Wenzel and Inglehart (32) is a nation that values self-determination and control. Accordingly, there is an imperative of adaptability which puts a premium on ‘agency.’ For individuals as well as societies, agency means the power to act purposely (32). When considering this, it is logical that Sweden was one of the earliest countries to enter into scholarship around an issue such as childbirth fear.
Public policy and birth in Sweden and Australia

During 2008 there were 109,000 births in Sweden. The mean age of women giving birth to their first child (primiparas) was 28 years and the national rate of caesarean in Sweden was 17 percent (5).

In 2008, 296,925 babies were born in Australia. The mean age for first time mothers in 2008 was 25 years (6). Women in Australia have almost
twice the chance of giving birth by caesarean compared to Swedish women. The national rate of caesarean in Australia was 31.1 percent in 2008 (6). As described previously, Sweden and Australia are similar nations from a demographic perspective. Citizens in both nations have state funded universal health care, however the organisation of maternity care differs between the two countries.

Maternity care is defined in this context as professional health care which is offered to women over the course of their pregnancy (antenatal), birth (intra-partum) and in the weeks post birth (post-partum). In both Sweden and Australia this care is freely available to all women irrespective of income and is funded by the state. In both countries childbirth occurs almost completely in a hospital setting. Home birth is less than one percent of all births in both countries.

Between 1997 and 2000 the Australian Government introduced a taxation benefit scheme to increase the participation of citizens in private health insurance. The ‘Australian Private Health Insurance Incentive Policy’ (33) reforms increased overall private health insurance membership in Australia by 50 percent. Approximately 30 percent of all Australian women choose the private health system for care in pregnancy and birth rather than the state system. By choosing the private system a woman has continuity of care from an obstetrician with antenatal care taking place in private consulting rooms. Birth is in a private hospital usually with single room accommodation and what is perceived as higher quality meals and hotel-like standards (34). Consistently, women in this type of care report high levels of satisfaction particularly in regard to antenatal care (35, 36). It has been demonstrated in a recent population study from the state of Western Australia that this policy has directly contributed to a five percent increase in emergency caesareans and a ten percent increase in elective caesareans in that state (37).

In Australia and Sweden, women receive between six to ten visits of antenatal care. In Australia this can be in a private obstetrician’s consulting rooms, a general practitioner’s consulting rooms or a state run public hospital clinic depending upon the woman’s status as a private or public patient. A small but slowly increasing number of women has antenatal care from a midwife. Women give birth in either the state run public hospitals at no direct cost to the woman, or in the user-pay private system supported by private medical insurance. Intra-partum care is directed by the medical officers in both settings; however in reality midwives conduct much of the intra-partum care in the larger public hospitals.

In Sweden, antenatal care is the domain of the midwife with the local barnmorskemottagning (midwife clinic) being a function of the kommun (municipality). While the state funds all antenatal care in Sweden some clinics are owned and run by private companies which sub-contract to the kommun (38).
If the midwife estimates that the pregnancy is abnormal or the pregnant woman herself has a need or a wish to meet with a doctor or other professionals during pregnancy, the woman will be referred to specialised care. A normal birth is the midwife’s responsibility. Should complications occur the midwife refers to an obstetrician for advice or ongoing management.

**Historical perspectives**

**Australia**

To better understand the cultural context of the maternal health services in both countries, it is instructive to consider the historical landscape that has shaped these services. Structured antenatal care originated in England around the time of the First World War and was adopted by many countries including Australia and Sweden (39). The first antenatal clinic in Australia opened at the Royal Adelaide Hospital in 1910 however widespread antenatal care did not become common place until around 1935 (39). When this occurred it was undertaken almost completely by medical doctors known in Australia as General Practitioners (GPs). Prior to this, since the beginning of white colonisation in Australia, midwives without professional training had provided the vast majority of maternity care, most of which was intra-partum care in the woman’s home. The midwife's control over care for childbearing women continued largely unchallenged in Australia until the mid to late 1880s (40, 41).

As the number of medical doctors in Australia increased, competition for practice became strong. Doctors started to move into the rural areas where midwives were progressively seen as an obstacle to the establishment of medical practices. Utilising the same strategies that had been successful in Europe, the increasingly powerful medical lobby claimed that midwives were dangerous and the cause of maternal deaths due to sepsis (42-44). Kathleen Fahy (42) in her article titled ‘An Australian history of the subordination of midwifery’ summarizes an account from Willis (41) of this rise of medical dominance in maternity care

**Writing in the Australian Medical Journal,** doctors informed each other that the fastest way to build up a general practice was to establish a relationship with the women during pregnancy; build up her trust and then become the doctor for the whole family; thus the midwife stood in the way of medical income and status. In order to wrest the childbearing women away from the midwives GPs had to find a way to justify their involvement in all labours and births, not just the complicated ones. (p. 27)

According to Fahy (42) midwives had strong community support and charged lower fees than the GPs. In time the influence of the doctors effected legislative power over the practices of midwives (45, 46). The midwives became consumed by acts of parliament placing them firmly under the
control of the various Nurses Boards for education and regulation. They were licensed to practice only in hospital settings under the direction of a medical officer (45). The medical profession welcomed this particular involvement of government. The relationship between the medical profession and the state in the provision of maternity care has, on the other hand, often been marked by tensions (47). Reiger’s work on the contradictions in Australia’s maternity health policy illustrates this (47).

Australian doctors have had an ambivalent relationship with government since nineteenth century debates over public health provision. They have nonetheless used the state to support their market position, determined to maintain their freedom and a system of private, fee-for-service practice. While the introduction of the £5 Maternity Allowance or ‘baby bonus’ in 1912 was initially opposed because doctors wanted the payment to go directly to professional carers rather than to mothers, they accepted the benefit when it included a requirement of medical attendance at birth, thus preventing competition by midwives. (p.332)

The proportion of women attended by a doctor for childbirth then rose nationally from 63 percent in 1914 to 77 percent in 1923, with rates in Victoria and South Australia generally higher (47). It is ironic to reflect upon this history of supply outstripping demand in light of the current workforce environment. In Australia today many GPs have withdrawn their services from intra-partum care due to life/work imbalance, stress and concerns regarding the risk of litigation. In many rural settings where the GP is still involved, there are insufficient numbers to provide an ongoing service. Together with the promotion of specialist obstetric care over that of general practitioners in the late twentieth century, this has meant that many GPs became deskillled in obstetric practice (48). The situation has generated Australian maternity service reviews with workforce as a major driver in reform. The up-skilling of midwives and GPs in rural and regional settings has been a central policy in a bid to provide access to antenatal care and labour care (48).

In 2010, for the first time in Australia, midwives who had undertaken specialist credentialing with the national registration board and the Australian College of Midwives could practice outside of the acute hospital context with payment for services funded by the state (49). This reform has come about after years of lobbying from the professional midwifery organisation and from consumer groups. The midwives’ capacity to practice in this way is still constrained by a prerequisite agreement of a formal collaboration with a designated medical officer and home birth remains very much marginalised.

Reiger (47) argues that, while there is no doubt about Australian governments traditionally promoting medical dominance of birth, recent policy initiatives in several states are encouraging significant change in maternity care reflective of emerging changes in attitude in civil society (47, 50).
There have been several important studies which have supported a new direction in government policy by demonstrating the efficacy of midwives playing a more central role in the Australian maternity care system (51-53). This has subsequently translated into government auspiced initiatives supporting various forms of midwifery-led continuity of care models. To date these are linked to the acute hospital system (50). In response to this a caseload midwifery program was established in one of Melbourne’s largest maternity centers and was evaluated by a randomized controlled trial. The study compared 2314 low-risk pregnant women with midwife-led caseload maternity care to standard care. The results were compelling in regard to improved outcomes for women in the midwife-led model including a reduction in caesarean birth (54).

**Sweden**

In Sweden the course of history was different for midwifery. Skilled midwifery attendance was seen as important and sanctioned by the state from as early as 1685 when a formalised midwifery school was initiated by the then Queen of Sweden (55). Sixty-six years later the Office of the Registrar General established midwives and church clerks as officials in the recording of births and maternal deaths. The maternal mortality rate was around 900 deaths per 100,000 live births at this time (55). The dispersion of well trained and educated midwives was seen to be an effective strategy in combating this maternal mortality and by 1819, each Swedish municipality was directed to employ a trained midwife (55). The deployment of midwives with formal education and advanced technical skills in instrumentation, to rural areas was credited with a significant reduction in maternal mortality by the year 1900 (55).

Some midwifery rhetoric would have it that the Swedish system of antenatal care is utopic compared with the Australian system (56). This notion has been challenged from within Sweden (57) with the style of engagement between a woman, her partner and a midwife in the Swedish antenatal encounter being found to vary from a dominant ‘mechanistic and medicalised understanding of childbirth’ to a 'natural childbirth perspective'. One focus group study from Sweden reported that Swedish midwives have concerns about the changing attitudes in society which place greater value on technology than traditional midwifery skills (58). The midwives reported that their practice was affected by a societal lack of trust in the normal birth process and a perception of an increased risk of litigation (58). The possibility of there being elements within the broader Scandinavian system of maternity care which contribute to women’s fear of giving birth has also been raised (59). On balance though, it would seem that in comparison with Australia, midwifery in Sweden may have a greater ‘authoritative knowledge’ (60) in pregnancy and childbirth practices. This has the potential to influence the attitudes and beliefs of birthing women particularly in the antenatal period.
Recent debate regarding the Swedish model of maternity care has largely centered on access to home birth (61). Unlike the UK (62), New Zealand and Australia (63), maternity care in Sweden has not undergone any recent national government policy review exploring new models of care. While the barnmorskemottagning system of antenatal care allows some continuity of carer during pregnancy, having a known carer during birth and post-partum has not been a feature of the national system of care. Continuity of care from pregnancy through to the post partum period was available at different times in Sweden. In 1989, Sweden’s first in-hospital birth centre in Stockholm was opened which followed the continuity model, however, after a register study finding of increased perinatal mortality in first born infants (64), the birth centre was closed and then reopened in a modified form at Södra BB. Swedish women in general have very limited access to continuity of care models beyond the antenatal period.
Perceptions of risk and a culture of fear

Pregnant women are the subject of others’ appraisal, judgment and advice with risk being the central theme in this discourse (65). Further, it is argued that both lay and expert knowledge affect the pregnant woman. A recent newspaper article in Australia’s Sydney Morning Herald entitled ‘Birth is no time for war stories’ (66) highlighted the impact of negative and frightening stories of birth told from one woman to another. It is the experts though who have the greatest power in terms of communicating information regarding clinical and epidemiological risk (30). In this regard, expert knowledge has expanded to include such specialities as foetal medicine units and genetic counselling. Resisting being drawn into this discussion of risk would be difficult for the majority of pregnant women (65).

With midwives in Sweden being the lead maternity carer in the antenatal period, they are culturally positioned as ‘experts’. It has been asserted that this different distribution of professional responsibilities between midwives and doctors in Sweden and Australia is likely to create a cultural construction of childbirth risk that may impact on what Swedish and Australian women accept as being natural and normal or a medical event to be managed (60).

Canadian obstetrician and well-known author of ‘Effective care in pregnancy and Childbirth’(67), Murray Enkin, made a very important observation 18 years ago. He said that in a Western context the real risks to mother and baby have all but disappeared but unlike risk to the mother, the perception of risk to the baby is still high (68). Prenatal testing is an example of this where it has emerged as a means to alleviate anxiety regarding the possibility of an abnormal foetus (69). Evidence is lacking as to the actual beneficial effect of such screening on parents’ anxiety (70). While science has attempted to give us certainty and keep order through monitoring and information systems, it has been argued that it has caused greater uncertainty as women attempt to navigate their individual probabilities of risk (30).

This leads us to what Enkin (68) describes as the third level of risk – risk to the midwife or doctor, most especially the doctors. The relationship between obstetric practice and litigation is widely discussed between obstetricians, within the media and in professional journals (16, 71, 72). While many practitioners believe litigation is a threat to obstetric practice, there is
no hard evidence to support this belief (71). It is likely that such practitioners respond by practising defensive medicine but this is very difficult to measure (71). Evidence regarding the impact of real or perceived fears of litigation for obstetricians in Sweden compared to Australia is not available. One could hypothesise that for doctors in Australia, the private medicine component of maternity care makes fear of litigation more analogous to the well-known situation in the USA.

In terms of the risk of not having uncomplicated vaginal birth, the most recent evidence from Australia is compelling about the impact of giving birth in the private system compared with the public system of care. A 2012 study examining all births in Australia’s most populous state, New South Wales over a ten-year period, found that low-risk primiparous women giving birth in private hospitals have a greater chance of a surgical birth than of a normal vaginal birth. This phenomenon has increased markedly in the past decade. When compared to the public system of care, low-risk women in the private system had higher rates of induction (31 percent versus 23 percent), instrumental birth (29 percent versus 18 percent), caesarean (27 percent versus 18 percent), epidural (53 percent versus 32 percent) and episiotomy (28 percent versus 12 percent) and lower normal vaginal birth rates (44 percent versus 64 percent). Low-risk multiparous women had higher rates of instrumental birth (7 percent versus 3 percent), caesarean section (27 percent versus 16 percent), epidural (35 percent versus 12 percent) and episiotomy (8 percent versus 2 percent) and lower normal vaginal birth rates (66 percent versus 81 percent) (73).

Depending on a woman’s attitude to birth, she may feel reassured or frightened by these statistics. She may feel fearful regarding the risk of having unnecessary intervention or she may feel at risk of not getting intervention she believes she might need (69).

Fear of childbirth

Definition

Childbirth is a seminal life event that has always been associated with intense emotions for those engaged directly in it or in a supporting role. Mixed with the joy, excitement and pride of birth, fear has historically cast its shadow on the safety of the mother and the infant (68). Fear is primal. In statistical terms, fear is a continuous variable. It ranges from a commonsense awareness and regard for risks, to life limiting phobias.

Anxiety in pregnancy has been recognised for some time (74), although fear of childbirth was isolated as a psychological domain of its own (75) only from the late 1970s. This has been confirmed subsequently in studies where childbirth fear and anxiety have been measured simultaneously (76, 77). In 1979, Standley et al. (78) identified three dimensions of prenatal
anxiety: pregnancy and childbirth, parenting the child and general psychiatric symptomatology. Levin (74) described the following three dimensions of pregnancy-related anxiety: being pregnant, childbirth, and hospitalization.

Obstetric and psychological researchers have attempted to define, and identify ways to measure and classify fear as it relates to childbirth (74, 79-83) since that early time. There is no internationally accepted definition or standard criteria for fear of birth as a concept which points to a variation in cultural recognition or acceptance of childbirth fear as an entity (59). Fear of childbirth has been described using terms such as a negative cognitive assessment of the anticipated childbirth (7, 84), feelings of fear and anxiety when facing birth (85), very negative feelings towards birth (13) and the pathological dread and avoidance of childbirth -‘tokophobia’ (86). The difficulty is that it has become, as Liljeroth (59) asserts, ‘a collective term’, describing ‘the cross-breeds of fear both before, during and after childbirth’. Despite this, in the Nordic countries, fear of birth has become an accepted truth institutionalised with speciality care such as Aurora groups. In Sweden it is categorised with the national ICD10 Z 918 code - ‘fear of childbirth’.

When making valid comparisons between birthing contexts, this ambiguity can be problematic in understanding how common fear is, what impact it has on outcomes and what responses it elicits from health professionals. After thirty years of research on the prevalence, characteristics and impact of childbirth fear in the Scandinavian countries (20, 80, 87-90), more recent work is emerging on women’s experience of fear in other cultures such as in the United Kingdom (76), Australia (91, 92), Canada (93), Switzerland (94), Belgium, the Netherlands (95), Thailand (96) and Turkey (97).

**Fearful of what?**

The most frequently cited fears are fear for the child's health, physical damage to oneself, death, pain and dealing with medical intervention, humiliation and loss of control (94, 98, 99). Women suffering from severe fear of birth have described themselves as having feelings of tremendous loneliness (100, 101).

**Measurement and prevalence**

Extreme fear or tokophobia which can result in panic attacks, pregnancy avoidance and termination of pregnancy is estimated to affect six to ten percent of women (12). There is a variety of descriptions of what constitutes other clinically important levels of fear. ‘Fear’, ‘high fear’, ‘severe fear’, ‘very severe fear’ and ‘significant fear’ are terms that are used interchangeably in the literature. Most commonly reported from Swedish and Finnish studies is a prevalence of fear negatively affecting up to 20 percent of pregnant women (80, 102).

The prevalence of childbirth fear may be greater in other countries. Two studies from Britain (76) and Australia (91) have found the levels of child-
birth fear to be higher than that reported in the Nordic countries. Direct comparisons between these studies however are difficult to interpret accurately though, as mean scores for levels of fear were reported (76, 91) and contrasted with a prevalence based on women with fear scores above a nominated cut-point (7).

The most well-known and universally accepted measure of the construct of childbirth fear is the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) (75). This instrument has two versions: A and B measuring pre and post birth fear respectively and is considered psychometrically robust (75, 103). W-DEQ A is a 33 item self-report instrument where women respond to questions on a 6-point scale ranging from ‘not at all’ (0) to ‘extremely’ (5), yielding a maximum score of 165 and a minimum score of 0. A higher score indicates more severe fear of childbirth with a score of ≥85 indicating intense fear and ≥100 indicating very intense fear (75). Another questionnaire suitable for administration during labour is the Delivery Fear Scale (DFS) which shows a strong correlation with the W-DEQ (104).

Several studies have examined the multi-dimensional structure of pregnancy anxiety and the specific fears and worries related to pregnancy. British and Australian studies (76, 91) have identified that the W-DEQ A contains four distinct sub-factors. The dimensions, as described by Johnson and Slade (76) were fear of birth, the degree to which women focus on the positive aspects of bearing a child, the risks inherent in labour and expected feelings of isolation during the procedure. These dimensions show some congruence with the aspects of fear reported earlier by Levin (74). Further to this, Huizink et al. (105) undertook a confirmatory factor analysis on the abbreviated version of the PRAQ R. They described a three-factor model of pregnancy anxiety: fear of giving birth, fear of bearing a handicapped child and concern about one's appearance. Fear of childbirth has also been measured using the Childbirth Attitudes Questionnaire (108) which incorporates four dimensions: baby-related, pain and injuries-related, general and personal control-related, and medical interventions and hospital care-related fear (95, 108).

The literature is not conclusive regarding a linear ‘dose effect’ of the impact of fear on particular birthing outcomes or if there are definitive cut-points at which fear becomes predictive for deleterious outcomes such as a negative experience or an operative birth. For example, some studies have taken a W-DEQ A score of ≥ 84 as the cut-point (7), some ≥100 (90). Other studies have used median scores (99), and others mean scores (76).

Although many research articles provide strong recommendations for the routine screening of women for fear of birth, the actual implementation of this in clinical settings may be compromised by the length, complexity (77) and cultural interpretation of tools such as the W-DEQ. The cultural translation of three items in the scale- 26: ‘let it happen’, 28: ‘funny’ and 30: ‘obvious’ have been questioned by Johnson and Slade (76) and Fenwick et al. (91) as not being well understood by British and Australian women, al-
though they generally agree that the W-DEQ is appropriate to use with native English speakers.

More recently, patient-rated visual analogue scales (VAS) have been tested and found to be simple and easy to use, with high levels of compliance against the W-DEQ A (90). Rouhe et al. (90) concluded that the W-DEQ and VAS were both appropriate methods to measure fear of childbirth. As a screening method, the VAS is easy and fast and has very good sensitivity. Using a VAS cut-off value of 5.0 on a 10 centimetre scale, 38.9 percent of the women in the study by Rouhe et al (90) were classified as having fear of childbirth. This group included 97.8 percent of all women with severe fear of childbirth (as defined by a W-DEQ A score of \( \geq 100 \)) (90). The specificity was 65.7 percent. When the VAS threshold was set at 6.0 the sensitivity was 89.2 percent and specificity 76.3 percent.

The VAS has wide acceptance as a reliable measure of pain and mood disturbance (109) and could be a most useful first approach for midwives or doctors to determine if a woman has some fears regarding birth that need further investigation. Based on the conclusions by Rouhe et al (90), the actual cut-point at which fear is problematic needs further refinement to improve its specificity.

Characteristics of women who fear birth

Previous psychological morbidity (mainly general anxiety, low self-esteem and depression) expose a woman to a greater risk of fear of childbirth (77, 110, 111), as does dissatisfaction with their partnership, and lack of support (12, 13, 20, 92). Women who have a history of sexual abuse have been shown to be more likely to fear childbirth (112). Several studies have demonstrated that nulliparous women are more likely to experience severe fear of birth (76, 90) while multiparous women who have had a negative prior birthing experience are of equal risk (12). Age and employment status of women with fear show mixed results especially given that nulliparous women are more likely to be younger and engaged in full time work than multiparous women (13). Some Swedish studies have demonstrated that women who are foreign born are more likely than native born women to be afraid of birth (13), although Fenwick’s Australian study showed the opposite with more Australian-born women being fearful of birth than foreign-born mothers (91).

Personality type has been associated with fear of birth, with fearful women being more anxiety-prone, more short-tempered and lower in socialisation than women without fear (113). Personality traits have also been examined for Swedish women who request caesarean without medical indication. It was found that socialization and monotony avoidance differed significantly before birth between mothers who request a caesarean and those who do not (114).
The impact of fear on labour and the post-partum period

Fear of birth has been associated with women experiencing longer labours. A Norwegian study of 2206 pregnant women found that women with fear of birth as defined by a W-DEQ A score of $\geq 85$ (considered serious fear of childbirth) had significantly longer labours than women without such fear (115). Childbirth fear during pregnancy has also been associated with problems in the ongoing mental health of the mother including depression, anxiety (110), compromised mother–baby behavior and relationships (106, 107, 116), and post traumatic stress disorder (PTSD) (117).

Fear and emergency caesarean

A Swedish population with fear scores of $\geq 84$ on the W-DEQ A (7) showed an association with emergency caesarean. In a similar study conducted in Britain, fear was not significantly associated with emergency caesarean although the participants had a higher overall mean level of fear than was seen in the Swedish study (76). Comparisons between the two studies are difficult since the British study compared mean scores rather than categorical variables of more than or less than 84 on the W-DEQ A. A similar methodological issue was seen when Fenwick et al. (91) reported higher overall mean scores for fear in an Australian cohort compared to studies from Sweden.

Fear and requests for caesarean

Fear of birth is believed to be the most common underlying reason for a request for caesarean section (12, 55, 118). In Finland, Sweden and the United Kingdom, maternal request has been cited as the reason for 7–22 percent of caesarean births (9, 12). Moderate fear of childbirth may be more common among the nulliparous, but severe fear of childbirth and a request for caesarean are more common among parous women (119). Fear of labour pain is strongly associated with the fear of pain in general (12), and a previous complicated childbirth or inadequate pain relief are the most common reasons for requesting a caesarean among parous women (9, 13). Fear of birth is associated in general with an increased prevalence of elective caesarean but whether this is overtly requested is not always clear (9).

Treatment

Bewley and Cockburn (120) have cautioned that elective caesarean is not the best answer in the majority of cases as a treatment for fear of birth. They assert that there are better modalities for addressing fears and phobias suggesting that the primary and most appropriate management would be psychological support for women who are terrified of childbirth. Many of these women have had a bad experience of health care or previous labour, some have experienced sexual abuse and some may even have PTSD.
In Sweden small teams, often consisting of specially trained obstetricians and midwives and sometimes psychologists, have been offering assistance to women identified with fear of birth (121). These are called ‘Aurora’ teams. The effectiveness of these teams has been open to debate. One study has demonstrated that counselling improves women’s experience of birth but does not have a major effect on reducing requests for caesarean (13). In fact fear of childbirth was associated with a three to six times higher rate of elective caesarean sections for the women who underwent counselling (13).

There are some reports (119, 122) which have demonstrated that targeted counselling for women requesting caesarean due to fear of birth during pregnancy is effective, with considerable numbers of women withdrawing their request after being able to discuss their anxiety and fear. A Finnish study found that vaginal deliveries were successful and length of labour shorter in the treated fear group (122). In the study by Saisto et al. (122) it was noted that one-third of the cases did not accept the treatment, but simply wanted a caesarean without any discussion or counselling from the obstetrician (122).

A more recent Finnish study from Saisto et al. (123) reported treating fear of birth using group sessions with a psychologist and a midwife, during the third trimester. A psychotherapeutic atmosphere including relaxation exercises, focused on an imaginary childbirth were employed in addition to women discussing their fears and feelings. More caesarean requests were withdrawn in this treatment group than in the matched comparison group. The results were more successful than those reported in previous studies (123).

In a critique of the medicalisation of childbirth fear in the Nordic countries, Liljeroth (59) called for further research into the organisation of maternity care services and how this contributes to fear. This should include the wider cultural aspects of birth. The current approach where fears are reduced to individual medical problems with solutions offered as medical and directed to individual persons should be reframed to address these broader ecological factors (59).

Attitudes and beliefs

There is some evidence showing that women who do not subscribe to a belief system that views birth as a normal event are more likely to prefer a caesarean (124, 125). Thomas and Paranjothy (124) asked three thousand women in England, Wales and Northern Ireland about their attitudes and beliefs towards birth in the National Sentinel Caesarean Section Audit Report using sixteen attitude and four belief statements (124). The women who believed that birth was more of a medical event than a natural event were more likely to prefer a caesarean birth to a vaginal birth. More than 90 percent of mothers expressed a wish to have a birth that was the safest option for their baby. Their own safety, a desire for a quick recovery and a birth that
would not impede breast feeding were also strong preferences (124). The literature is not always clear in delineating what is a genuine request for a caesarean as opposed to an attitudinal preference for one. A preference for caesarean in early pregnancy can increase a woman’s odds of actually having one (126). Likewise an attitude reflecting a willingness to accept intervention in the antenatal period increases the odds of actually getting intervention (127).

Attitudes have been conceptualised using a three-component model: affective, cognitive and behavioural. The affective component consists of positive or negative feelings toward the attitude object; the cognitive part refers to thoughts or beliefs; and the behavioural element represents the actions or intentions to act upon the object (128). Social psychologists differentiate a belief from an attitude by suggesting that a belief is the probability dimension of a concept -‘is its existence probable or improbable?’ (129). An attitude on the other hand, is the ‘evaluative’ dimension of a concept. ‘Is it good or is it bad?’ (129). A change in attitude toward a given concept can result from a change in belief about that concept (129). The ‘Harsanyi Doctrine’ (130) asserts that differences in individuals’ beliefs can be attributed entirely to differences in information. The determinants of a woman’s attitudes and beliefs towards childbirth are inherently linked to cultural and health system specific influences (131). In risk-averse biomedical systems of care, the woman’s attitudes and beliefs about birth may determine the level of intervention that she actively chooses or passively receives.

There may be broader attitudinal profiles of women that can be associated with particular birthing preferences and indeed actualised outcomes. Women who choose home birth are one such group. Kornelsen (132) interviewed women choosing home birth and women choosing hospital birth in a small study from Canada and found that women who choose to give birth in hospital tended to see technology in a much more positive light than home-birthers, who saw birth technologies as a rather negative force. Women who choose homebirth hold attitudes to risk that are at odds with the attitudes of many health care professionals and the general public (61, 133). Another Canadian study (134) compared the attitudes of women according to the maternity caregiver they chose and reported that women who chose a midwife had a strong natural birth philosophy.

Attitudes to childbirth have been explored in other ways such as the hypothesis that Dutch women have a different attitude to pain than women in other European countries (95). Furthermore an empirical study which focused on the attitudes to technology and childbirth of GPs, obstetricians and midwives, showed clear attitudinal differences between the disciplines (23) and accordingly different acceptance of the appropriateness of intervention.
Relationship between attitudes and fear

MacFadden and Schoech (135) illustrate the integral relationship between fear, attitudes, beliefs, emotions and ultimately decision-making or behaviour. Their work draws upon emerging empirical evidence from neuroscience and while they specifically focus on professional decision making, their propositions hold relevance to many implicit and explicit attitudes women hold in relation to pregnancy and childbirth. The authors (135) coin the term ‘hot’ rationality.

From birth and even before we have language, our brain is processing experiences and building a knowledge base of beliefs, perceptions, and feelings which impact our view of the world and our decision making. This implicit understanding is unconscious, deeply held, automatic, and difficult to change. (p. 284)

MacFadden and Schoech (135) contend that the

...human brain is geared towards survival, and thus, most decision making or attitudinal expression is almost instantaneous, automatic, non conscious, and finely attuned to fear. (p.284)

They describe the brain as having a ‘Low Road’ and ‘High Road’ way of processing fear. In the former situation when a threat is perceived, the amygdala is immediately engaged into the well known fight or flight response. ‘High Road’ is also a response to fear where the thalamus sends sensory information to the cortex but it then engages memory and thought and decides upon an action. These ‘High Road’ actions or attitudes are based upon a priori internalized beliefs and values (135). For the childbearing woman these internalised beliefs could be based upon a prior negative birth experience, stories heard from her close family members, friends or the media or traumatic sexual experiences. Add to this the effect of socially adaptive behaviour such as peer group pressure or compliance with authority figures (both responses to fear of being sanctioned or isolated). When considering these influences it becomes clearer how the adoption of particular attitudes to birth such as the widespread ‘normalisation’ of epidural use in labour occur in a society (136).

Further to this, the work of Fishbein and Ajzen (137) describes how a person’s attitude is related to their beliefs about the value of something. Satisfaction or dissatisfaction with something is an expression of an attitude. A person’s beliefs and attitudes are manifested in their behaviour. As a society we often describe people as having ‘typical’ or ‘stereotypical’ behaviours based upon what we know of their attitudes and beliefs or what we think we know.
Stereotypes, orientations and profiles

Stereotypes

Blum (138) describes stereotypes as

…false or misleading generalizations about groups held in a manner that renders them largely, though not entirely, immune to counterevidence. In doing so, stereotypes powerfully shape the stereotyper's perception of stereotyped groups, seeing the stereotypic characteristics when they are not present, failing to see the contrary of those characteristics when they are and generally homogenizing the group. (p.251)

Caricatures take this a step further by exaggerating stereotypical features for comic effect - take for example the caricature of an obese, drunken midwife on her way to a labour, by Thomas Rowlandson in 1811 (139), published at a time in London when midwives were losing status in favour of medical men.

In a more constructive sense, many people use stereotypes to help navigate a new situation or group of people. A patient attending a consultation with a medical specialist for the first time may prepare psychologically for that encounter by invoking an image of the doctor as a serious, senior person wearing expensive conservative clothing. In doing this, they 'rehearse' their approach and communication style to maximise the benefit from the encounter. Likewise when meeting a pregnant woman in labour for the first time, a midwife or doctor will read the medical history which includes demographic details and form some opinions about how best to engage with that woman.

Green et al. (140) set out to test the stereotypes they believed midwives used to assume the expectations of women in delivery wards in the United Kingdom. One stereotype was the 'well educated, middle-class NCT (National Childbirth Trust) type' and another 'uneducated working class woman'. The stereotypes were not supported in a number of important respects. In particular: women of different levels of education were equally likely to subscribe to the ideal of avoiding drugs during labour; the less educated women did not want to hand over all control to the staff. Green et al. (140) showed in this study of 825 women, that it was in fact the less educated women who had the highest expectations for a fulfilling experience of childbirth.

Orientations

An orientation is defined as the direction of thought, inclination, interest or attitude (141). Joan Raphael-Leff's comprehensive work in psychoanalysis and motherhood has described mothers in four categories: ‘Facilitator’, ‘Regulator’, ‘Reciprocator’, and ‘Conflicted’ (142-144). Her model (see Table 2), which is based on her extensive clinical experience, cross-
culturalresearch, mother-child observations and survey data, postulates that there is a variety of approaches to pregnancy and early motherhood within and between societies. She describes these as ‘orientations’. Raphael-Leff states clearly that her model is not about personality traits; rather it is an exposure (long ignored in popular and scientific depictions of mothers) of the subjective meanings women place on mothering a child. These orientations, in keeping with the mother’s changing circumstances, may alter in subsequent gestations. Raphael-Leff challenges the generic term of ‘Mother’ (144).

The Mother universalises the particular, neglecting each mother’s unique attributes and personal psycho-history… (p. 3)

Raphael-Leff’s term ‘healthy maternal ambivalence’ challenges the image of parenting as blissful fulfilment, acknowledging instead that women (and men) have mixed feelings. This enables these feelings to be validated and processed rather than either inhibited (by Facilitators), split (by Regulators) or acted upon (by Conflicted parents) (144).

A recent prospective study from Belgium (145) attempted to predict a woman’s childbirth experience using antenatal expectations of birth and the Raphael-Leff model of orientations. While the antenatal expectations of the women clearly predicted their post-partum recollection of intra-partum experiences, the study did not support the independent contribution to birth experience of the Raphael-Leff orientations after obstetric complications were taken into account. Nevertheless the authors concluded that the maternal orientations contribute, to some extent, to the understanding of the variations in the childbirth experience.

Profiles
The Oxford dictionary defines the term ‘profile’ as an analysis (often in graphical form) representing the extent to which something exhibits various characteristics (141). It is used extensively in disciplines as diverse as marketing, criminology, biology, mathematics, medicine, social science and psychology. Profiling differs from stereotyping in that it is based upon a systematic classification of a set of measurable variables into like groups. It is this systematic measurement that separates profiling from the uncalculated generalisations of stereotyping. Cluster analysis is the most well-known means of creating scientifically measurable profiles.

Profiling has been used in studies in maternity care to classify a variety of variables including characteristics of women, caregivers, behaviours and satisfaction. One study from the United States used cluster analysis to profile various patterns of behaviour in the utilisation of antenatal care (146). This work sought to use the profiles to explore the relationship of prenatal care and birth outcomes (146). A large population based longitudinal study from
Sweden (n=2605) used cluster analysis to identify specific aspects of intrapartum care that contributed to dissatisfaction with the birth experience (147). In this study, distinct satisfaction profiles were found and were useful in assisting midwives to identify what aspects of care are most problematic and the characteristics of the women who reported dissatisfaction in these profile areas.

A cluster analysis was also used in a study of midwives, family physicians and obstetricians’ attitudes to birth technology in Canada (23). This study addressed attitudes toward routine electronic foetal monitoring, induction of labour, epidural analgesia, episiotomy, doulas, vaginal birth after caesarean section (VBAC), birth centres and provision of educational material, birth plans and caesarean and found that attitudes fitted three profiles. The clusters were formed based on the respondents sharing similar attitudes to these key aspects of birth technology. The three profiles or clusters were the ‘MW’ which consisted of 100 percent of midwives and 26 percent of the family physicians, the ‘OB’ cluster with 79 percent of the obstetricians and 16 percent of the family physicians and the ‘FP’ cluster which contained 58 percent of the family physicians and 21 percent of the obstetricians. The ‘MW’ cluster’s views were the opposite of the ‘OBs’ while the ‘FP’ cluster’s views fell between the ‘MW’ and ‘OB’ clusters.
<table>
<thead>
<tr>
<th>Orientation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘The ‘Facilitator’</td>
<td>Sees conception as the culmination of her feminine experience. She regards women as uniquely privileged in pregnancy: ‘Russian-doll-like, each carrying the baby as she herself was carried. Thus identified with both her mother and the baby with whom she communes in introspective thought, she resolves to minimise the transition with as natural a birth as possible.’ (p. 8)</td>
</tr>
<tr>
<td>The ‘Regulator’</td>
<td>‘Dreading the pain of childbirth, she plans as 'civilised' a delivery as possible, making use of medical innovations to decrease the damage.’ (p. 9) An elevated incidence of elective caesareans was seen amongst the women she identified with this orientation. She interpreted this as an indication of a preference for predictability and a way of bypassing the potentially humiliating experience of vaginal birth.</td>
</tr>
<tr>
<td>The ‘Reciprocator’</td>
<td>Sees birth as both stressful and exciting. These women tend to take on a ‘wait-and-see’ attitude.</td>
</tr>
<tr>
<td>‘Conflicted’</td>
<td>These women shift between the extreme ‘Facilitator’ and ‘Regulator’ orientations. It is difficult for these women to manage both the contradicting feelings of ‘Facilitator’ and ‘Regulator’ and the uncertainty of the outcome.</td>
</tr>
</tbody>
</table>
Satisfaction and quality of care

Women’s level of satisfaction with the quality of their pregnancy and birth care has become a driver for service development at local, national and international levels (148-150).

The definition and quantification of satisfaction with health care is complex and multidimensional. Satisfaction, patient perceptions and actual experiences of the care received are not synonymous concepts (151-153). It is not enough to ask women a general question about their overall satisfaction with maternity care. If asked such a question most women respond that they are ‘satisfied’ (154, 155). When specific questions about particular aspects of care are put to women a more negative picture emerges (156, 157). As a result, research has focused on the deficits in particular aspects of the health service - sometimes called the discrepancy theory of satisfaction (153, 158).

There are some consistent patterns of dissatisfaction with maternity care. Antenatally, emotional aspects, including not being listened to and not having one’s concerns taken seriously are a common finding across international settings (36, 159-161). In the intra-partum experience women are consistently dissatisfied with three dimensions: sense of control, support received from caregivers and perceptions of pain (153, 156, 157, 162-165). Dissatisfaction is associated with operative delivery, most especially emergency caesarean and admission of the baby to neonatal intensive care (156, 157, 166). Depressive symptoms and a low sense of coherence in early pregnancy have been associated with dissatisfaction with intra-partum care (147, 167). Other psychosocial factors in the antenatal period, such as fear of childbirth (147, 156) and negative expectations (168), have been identified as contributing to an overall negative birth experience and dissatisfaction with emotional aspects of the care received (147).

Several measurement tools exist where satisfaction is predicated upon matching expectations with experiences (169, 170). The alignment between met and unmet expectations is an important constituent of the experience of an event and satisfaction with care although it is argued that a more essential relationship is that between subjective importance and perceived reality. Subjective importance reflects how the person ‘wants’ it to be, whereas expectancy ratings reflect how the person ‘thinks’ it will be. The Quality from Patients’ Perspective (QPP) (171) instrument investigates both perceived aspects of care and the subjective importance of that care simultaneously and has had wide application in health care settings including maternity care. It provides an index of results which can offer the care provider clear guidelines on which elements to focus quality improvement (167, 171, 172).

When examining the characteristics of women who are dissatisfied with maternity care, there has been no consistent association found between satisfaction and maternal age, parity, marital status or family income (147, 157,
Poor psychological health including childbirth fear is a predictor for dissatisfaction with intra-partum care (147, 173).

Women’s beliefs and attitudes to pregnancy and birth may affect satisfaction with care and specifically identify which parts of the care are most important to them. A belief in a natural birth philosophy was a significant correlate of satisfaction in one Canadian study (134) investigating the association of women's birth-related beliefs and expectations with the choice of caregiver and subsequent satisfaction with antenatal care. Other antecedent attitudes together with fear towards pregnancy and birth may be instrumental in determining which areas of care during the antenatal and intra-partum period are important to a woman and how she perceives the quality of the care she receives. The positive or negative perception of the care she receives is important as it may have a powerful impact on her attitudes, beliefs and levels of fear in any subsequent birth.
Rationale for this study

Fear of birth has been studied extensively in the Nordic nations. The prevalence of fear in Australian populations however, is not well known. It may be even higher than that reported in Scandinavian studies (91). Limited theoretical work has been undertaken regarding the wider ecological aspects that create and sustain fear for women facing birth. What determines an individual woman’s attitudes and beliefs are subject to broader cultural and health system specific influences. More knowledge is needed on what impact these attitudes have on women’s childbirth choices, how this relates to fear and subsequent satisfaction with maternity care. A cross-cultural study of fear and attitudes involving a Swedish population and a population from a country such as Australia with its different organisation of maternity care can contribute new perspectives on this complex issue.
Aims

The overall aim of this thesis is to investigate the prevalence and impact of fear on birthing outcomes in two cohorts of pregnant women from Australia and Sweden and to explore the birth attitudes and beliefs of these women. The specific aims for each study are:

Study I
To assess the appropriateness of combining two VAS items to form a Fear of Birth Scale. Using this scale, to determine the prevalence of childbirth related fear in the two cohorts and to identify socio-demographic, pregnancy and health related factors associated with childbirth fear.

Study II
To determine if the women from the two countries have differences in attitudes and beliefs towards childbirth and to determine if there was an association with particular attitudes and beliefs and women’s preferred mode of birth.

Study III
To identify profiles of pregnant women based on their attitudes to and beliefs about birth and their levels of childbirth related fear. The aim was to compare maternal characteristics, outcomes and experiences of pregnancy and birth between these profiles.

Study IV
The aim of this study was to compare aspects of antenatal and intra-partum care perceived to be deficient in quality between women categorized into three attitudinal and fear profiles.
Methods

Design
This is a prospective longitudinal cohort study from two countries: Australia and Sweden.

Setting

**Wangaratta**
The Australian cohort came from Wangaratta, a regional city of 27,110 inhabitants in Australia’s southeastern mainland state of Victoria, with a surrounding catchment population accessing local health services of about 55,000. The Australian Bureau of Statistics (174) shows that at the time of our study the top three employment sectors in Wangaratta were manufacturing, health care and agriculture. The educational status of the inhabitants was similar to that of people aged 15 years or older in other areas of rural and regional Victoria. When compared to Victoria as a whole however, Wangaratta has a larger percentage of persons with no qualifications (52.4 percent compared to 47.5 percent), a larger percentage of persons with vocational qualifications (19.2 percent compared to 15.3 percent) and a smaller percentage of persons with bachelor or higher university degrees (10.5 percent compared to 17.2 percent). Wangaratta has a higher proportion of low income households (31.4 percent compared to 25 percent) when compared with the whole state of Victoria but is similar to other regional areas in Victoria (31 percent). The number of residents who moved to Wangaratta from another country in the preceding five years was 0.9 percent of the total population.

Unlike many other cities in Australia, Wangaratta has no provision for private maternity care. Women giving birth in Wangaratta are cared for under the state funded shared-care model comprising of visits to a GP and hospital clinic staffed with midwives, obstetricians and obstetricians in-training. Approximately one third of the women attend a midwife-led continuity of care model available through the hospital. Wangaratta has the subregional hospital where there were approximately 500 births per year at the time of this study. If women require tertiary level care for serious complications they are transferred to the state capital, Melbourne.
Örnsköldsvik
The Swedish cohort came from Örnsköldsvik, a regional municipality of 55,284 (28,000 in the city proper) inhabitants in the county of Väster-norrland in the middle north part of Sweden with a demographic profile similar to the rest of Västernorrland. At the time of our study the top three employment sectors in Örnsköldsvik were manufacturing, health care and trading. The educational status of the inhabitants was similar to that of people aged 16 years or older in other areas of rural and regional Västernorrland. The percentage of women aged 16-44 years with university education was 37 percent (national figures are 42 percent). Mean income for women were the same as national figures while 58 percent of women aged 20-24 and 79 percent of women aged 25-44 years were employed. The percentage of people born outside Sweden was 6 percent in Örnsköldsvik, the national figure is 15 percent. At the time of the study there were approximately 500 births per year at the local hospital where recruitment took place. All women give birth there unless they require tertiary level care for serious complications in which case they are transferred to Umeå. Antenatal care follows the same model as most of Sweden (175) with community based maternity clinics staffed by midwives and a hospital clinic for obstetric support if required.

Participants

Inclusion and Exclusion
The Swedish group was recruited at routine ultra-sound screening in pregnancy week 17-19 in the year 2007. Almost all women undertake this examination in Sweden (176), making it an ideal time to access potential participants. A letter with information about the study was sent two weeks prior to the examination. Swedish speaking, reading and writing women with a normal ultrasound were approached by a recruiting midwife and asked if they wanted to participate in the study. The questionnaire was either filled out at the ultrasound ward, or completed at home and returned by a paid postal envelope.

In the Australian setting of this study, all women who give birth at the local hospital attend a booking appointment with a midwife at the hospital between 18-20 weeks gestation. This visit is the first time most women encounter the midwife and it is here that they book into the antenatal clinic and childbirth education classes. They receive a variety of health promotion information on diet, smoking cessation and lifestyle. Additionally the women are given information on other screening tests and take with them request slips to attend for routine blood tests.

During a one year period spanning 2008-2009, those women who were English speaking, reading and writing with a normal 17-19 week ultrasound
result (thus reducing the chances of women with serious foetal anomalies being given a questionnaire) were invited to take part in the study by the booking midwife. Those who agreed received written information, signed a consent form, and were given a questionnaire to either complete on the spot, or take home and return in a reply paid postal envelope. Reminder letters were posted on two occasions to non-responders in both settings.

Data collection instruments
Data was collected prospectively using self-report questionnaires at three time points: 18-20 weeks, 34-36 weeks and two months post-partum. The exceptions were the questions about the actual birth which were administered in the third questionnaire, two months post-partum. The three questionnaires covered a wide range of pregnancy and birth related issues. The majority of the questions came from instruments previously developed in Sweden and Australia (160, 162, 165, 166, 177). The use of previously validated questions ensured semantic equivalence across languages, conceptual equivalence across cultures, and normative equivalence to the source survey (178).

Questionnaire one
At the first time point, in addition to women’s background information, five-point Likert scales were used to determine physical health, emotional health and previous birth experience. Women’s feelings about the approaching birth and the newborn were measured by their response to the questions: “How do you feel about the approaching birth?” and: “How do you feel when thinking about the first weeks with a new-born baby?” Five response alternatives ranged from ‘Very positive’ to ‘Very negative’ with a middle option of ‘both positive and negative’. Responses to all the Likert scales were dichotomised to reflect ‘positive’ or ‘less than positive’. Birth preferences were ascertained by asking the question “If you had the possibility to choose, how would you prefer to give birth”, with the response alternatives ‘Vaginal birth’ and ‘Caesarean’.

Childbirth fear was measured by asking the question: “How do you feel right now about the approaching birth?” Women responded by marking two 100 mm VAS-scales anchored by the words: worried/calm and strong fear/no fear. These two scores were averaged to give a total score. Attitudes and beliefs regarding birth were ascertained by the strength of women’s agreement/disagreement on a six-point rating scale to twelve personal and four general statements which had been used previously in two large studies from the UK (124, 179).
Questionnaire two
Satisfaction with the quality of the content of antenatal care was assessed at pregnancy weeks 34-36 weeks. Specific areas were: support from midwives, support for partner/significant others, the level and quality of information regarding pregnancy, labour and birth, the post-partum period and breastfeeding. Women responded to global items pertaining to overall medical and emotional aspects of their antenatal care.

All other questions relating to the type of care received from the health care professionals were based on the quality assessment model ‘Quality of Care from the Patient’s Perspective’ (QPP) (165, 180, 181). Women responded to twelve questions regarding their antenatal care. Firstly, they evaluated their perceived reality (PR) of the experience. For example:

“So far, I’ve got good/enough emotional/psychological care”
The response categories ranged from ‘do not agree at all’ (1) to ‘totally agree’ (4). The women were then asked how important (subjective importance, SI) this aspect of care was, with response categories ranging from ‘of little importance’ (1) to ‘of very great importance’ (4). Childbirth fear and attitudes to birth were again assessed using the same measures as described above for time point one.

Questionnaire three
Women were asked at two months post-partum about their mode and experiences of birth. They were asked to indicate the length of their labour in hours by answering the question “How many hours did your labour last?” Their perception of labour pain was explored by the questions: “How much pain did you feel during labour?” and “How did you experience this pain?” This was assessed by marking two seven-point scales anchored with the phrases ‘No pain at all (1)’ to ‘Worst pain imaginable (7)’ and ‘Very Negative’ (7) to ‘Very Positive’ (1).

Women’s perceptions of the quality of the midwifery, medical, emotional and physical aspects of care and partner involvement of intra-partum care were assessed using both global and specific questions. As in questionnaire two, all questions relating to the type of care received from the health care professionals were based on the quality assessment model ‘Quality of Care from the Patient’s Perspective’ (QPP) (165, 180, 181). For example “The midwife I met most of the time during labour and birth gave me all the support I needed” with the response categories ranging from ‘do not agree at all’ (1) to ‘totally agree’ (4). The women were then asked how important this aspect of care was, with response categories ranging from ‘of little importance’ (1) to ‘of very great importance’ (4).
Ethical considerations

The research was conducted in accordance with the most recent ‘Declaration of Helsinki’ (182) and the latest Australian statement on ethical conduct in human research by the National Health and Medical Research Council (183). Potential ethical issues concerning the principles of autonomy, the principles of beneficence, the principles of nonmaleficence and the principle of justice (184) were considered in the planning and implementation of this research.

Access to information contained in the questionnaires, or whether women had agreed to participate, was not available to those clinically responsible for the women during pregnancy and labour. Ethics approval was obtained from respective regional ethics committees in northern Sweden and Wangaratta, Australia, as well as from the Mid Sweden University and The University of Melbourne. Participants were not considered to be at risk of harm.

Analysis

Statistical analyses were conducted using Statistical Package for Social Sciences Versions 17-20 (SPSS, Inc., Chicago, IL, USA). An alpha of less than 0.05 was considered significant in all tests.

Paper I

The appropriateness of combining the two VAS items measuring fear of birth to form a scale was assessed using a Spearman correlation coefficient and Cronbach’s alpha coefficient. The two scores were averaged to create a Fear of Birth Scale (FOBS) score ranging from 0 to 100, with high scores indicating higher levels of fear. Following the procedure used by Rouhe et al. (90) a cut-off point of 50 was used to dichotomise scores into two groups of ‘High Fear’ or ‘Not High Fear’. Due to unequal group sizes and non-normal distribution of scores, non-parametric techniques (Kruskal-Wallis test, Mann-Whitney U test) were used to compare scores on the VAS items across levels of each of the socio-demographic, pregnancy and health related factors to identify those factors associated with fear of birth.

Paper II

Percentage agreement was calculated on responses to the birth attitude/belief questions. ‘Strongly agree’ and ‘agree’ were combined to form an ‘agree’ category. The responses ‘no strong feelings’ and ‘not thought about it’ were combined and labelled ‘ambivalent’. ‘Strongly disagree’ and ‘disagree’ were combined into ‘disagree’. Odds ratios were calculated with 95 percent confidence intervals to assess the percentage agreement or disagreement to the attitudes by country of care and by preference for mode of birth.
Factor Analysis

The original set of attitude and belief statements used in ‘The National Sentinel Caesarean Section Audit Report’ (124) had not been previously factor analysed. It was decided therefore to undertake a Principal Components Analysis (PCA) with oblimin rotation to explore the dimensionality underlying the set of sixteen attitude and belief items. The aim was to determine the presence of subscales and assess the appropriateness of adding the scores together to form a total score. Factor analysis is an exploratory tool for representing patterns of relationship between phenomena. It is also a way of reducing a set of redundant variables, and a way of identifying what it is that a set of variables shares in common (185).

The number of factors to be retained was guided by three decision rules: Kaiser’s criterion (eigenvalues above 1), inspection of the screeplot and by the use of Horn’s parallel analysis (186). Parallel analysis is one of the most accurate approaches to estimating the number of components (187, 188). The size of eigenvalues obtained from PCA is compared with those obtained from a randomly generated data set of the same size. Only factors with eigenvalues exceeding the values obtained from the corresponding random dataset are retained for further investigation. Parallel analysis was conducted using the software developed by Watkins (189). Total scores were calculated for each of the derived subscales and internal consistency was measured using a Cronbach alpha coefficient (190). Since the four subscales were short (less than ten items) the internal consistency of the subscales was further assessed using mean inter-item correlations as recommended by Briggs and Cheek (185). These subscales were compared by country of care and birth preference using a Mann–Whitney U test.

Total scores for each subscale were calculated by adding together the scores on each item. High scores indicated strong agreement. The combined subscales generated from the set of attitudinal items were named the Birth Attitudes Profile Scale (BAPS).

Paper III

Cluster Analysis

Cluster analysis is an exploratory data analysis tool for organizing observations (people, things, events, brands, companies) into meaningful taxonomies based on combinations of independent variables. This maximizes the similarity of cases within each cluster while maximizing the dissimilarity between groups that are initially unknown (191).

Cluster analysis is a collection of statistical methods which identifies groups of cases that behave similarly or show similar characteristics. Whereas factor analysis reduces the number of variables by grouping them into a smaller set of factors, cluster analysis reduces the number of observations or cases by grouping them into a smaller set of clusters. Cases with
similar profiles should be in the same cluster; cases with disparate profiles, in different clusters.

Cluster profiles provide a good summary of the data. Examining the profiles provides insight as to what the clusters represent. A cluster’s profile can suggest an interpretation and a name for it. The simplest mechanism is to partition the samples using measurements that capture similarity or distance between samples. The mean profile of a cluster is the centroid, the set of means of the variables, for the individuals in that cluster (191). The centroid method is based on the distance between cluster centroids. The K-means algorithm is a non-hierarchical method which assigns each case to the cluster having the nearest centroid. The process begins by partitioning the cases into \( K \) initial clusters and assigning each case to the cluster whose centroid is nearest. The centroids of the cluster receiving the new case and the cluster losing the case are updated. This is repeated until no more reassignments take place (191).

\( K \)-means clustering is the method of choice for studies which have hypotheses concerning the number of clusters in amongst the cases or variables. Cluster analysis therefore was undertaken after Z standardisation of the variables from the BAPS and the FOBS using the K Means method (192). In general, the \( K \)-means method will produce the exact \( k \) different clusters demanded of greatest possible distinction. This method is a good choice when the researcher has a hypothesised number of cluster groups in mind. The underlying clinical hypothesis in this study was that there would be between two and four attitudinal/fear profiles toward birth.

**Paper IV**

Questions structured according to the QPP index were formulated into seven levels using the protocol described by the index authors Wilde-Larsson et al. (167). For each item a score was calculated combining both subjective importance (SI) and perceived reality (PR). The seven levels were then combined into three categories: 1=Deficient care (1+2), 0=Balanced care (3-5), 2=Excessive care (6+7).

‘Balanced’ care occurs when the quality of the care given reflects the needs identified as important by the woman. ‘Deficient’ care contains aspects judged by the woman as important; however, she views her received care as less than good. ‘Excessive’ care contains aspects assessed as unimportant by the woman but the actual care perceived as beyond her expectations.

The recommendations from the creators of the QPP instrument are that if more than 20 percent of respondents report deficient care for a specific issue, action should be taken to improve care (167). Study II found that belonging to one of the three attitudinal profiles was not associated with country of care therefore a decision was taken to undertake all comparisons focused on the profiles using the combined cohort of Swedish and Australian women.
The three global questions regarding emotional care, medical care and overall care during the antenatal period, labour and birth were dichotomized into satisfied (0) or less than satisfied (1), with the ‘neither satisfied nor dissatisfied’ being treated as less than satisfied.

Proportional comparisons of deficient care were compared across the three profile groups using the chi square statistic. Crude and adjusted odds ratios (OR) were calculated with 95 percent confidence intervals for each deficient aspect of care. Adjustment was made for age, parity, education, previous mode of birth and country of care for the analysis on antenatal care and additionally mode of birth and admission of baby to neonatal care when analysing the intra-partum care.
<table>
<thead>
<tr>
<th>Paper</th>
<th>Design</th>
<th>Purpose</th>
<th>Participants</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Cross-sectional Self-report questionnaire</td>
<td>Descriptive Test internal consistency and validity of proposed new fear measure Compare two independent groups with binary and continuous data.</td>
<td>Pregnant women at 18-20 weeks gestation from two cohorts in Sweden and Australia</td>
<td>Frequency, Mean, median, IQR Chi 2 test of independence Mann Whitney U Kruskall Wallis Test Cronbach Alpha Spearman correlation coefficient</td>
</tr>
<tr>
<td>II</td>
<td>Cross-sectional Self-report questionnaire</td>
<td>Descriptive Test for association between groups and independent variables To determine the dimensionality of the attitude variables</td>
<td>Pregnant women at 18-20 weeks gestation from two cohorts in Sweden and Australia</td>
<td>Mann Whitney U Kruskall Wallis Test Chi 2 test of independence Logistic regression Principal Components Analysis Cronbach Alpha Inter-item correlation</td>
</tr>
<tr>
<td>III</td>
<td>Longitudinal cohort Self-report questionnaire</td>
<td>To explore a clinically feasible profile description of the participants based on attitudes, beliefs and fear data To test for association with pregnancy and birth outcome variables by cluster groups</td>
<td>Women at 18-20 weeks gestation and two months after birth from two cohorts in Sweden and Australia</td>
<td>Cluster analysis using K means Chi 2 test of independence Multinomial Logistic regression</td>
</tr>
<tr>
<td>IV</td>
<td>Longitudinal cohort Self-report questionnaire</td>
<td>To compare satisfaction with the quality of antenatal and intrapartum care between women based on their attitudinal profile.</td>
<td>Women at 18-20 weeks, 34-36 weeks gestation and two months after birth from two cohorts in Sweden and Australia</td>
<td>Index created from QPP instrument Chi 2 test of independence Multinomial logistic regression</td>
</tr>
</tbody>
</table>
Summary of findings

Participation and response
Of the 530 women who were eligible from the Swedish sample, 519 were recruited (98 percent of those eligible) and 386 women returned the first questionnaire giving a response rate of 74 percent. The Australian sample had 413 women eligible, 168 recruited (41 percent of those eligible) and 123 returns, making a response rate of 74 percent for the first questionnaire.

Questionnaire two was sent to the 123 Australian women and 386 Swedish women who completed the first questionnaire. In the Australian cohort 72 percent (n=89) of the women responded. Of the 386 women in the Swedish cohort who were sent the questionnaire, 84 percent (n=323) responded.

At two months post-partum a follow-up questionnaire was sent to 386 Swedish women, after exclusion of two foetal deaths, one very sick baby, two who withdrew participation and 127 who did not respond to the first questionnaire. Three hundred (78 percent) post-partum questionnaires were completed by the Swedish women. In the Australian cohort the post-partum questionnaire was sent to 121 women after the exclusion of 45 women who did not respond to the first questionnaire, one foetal death and one participation withdrawal, leaving 91 (75 percent) women who responded.

Dropouts
There was a 27 percent drop-out rate from time point one to time point three in the Australian cohort. When the demographics of these women were compared to the women who did not drop out there were no statistical differences in age, education, country of birth, parity, previous caesarean or level of fear. There were more single women who dropped out than women who were living with their partner.

In the Swedish cohort the drop-out rate was 22 percent. There were more women of low education who dropped out when compared to those who completed the study questionnaires. There were no other demographic or maternal differences in previous caesarean, parity, age, level of fear, civil status and country of birth.
Figure 3. Participation and response

Australia: 18 - 20 weeks Questionnaire
Eligible: 413
Agreed to participate: 168

Response
123 /168 (74%)
45 non responders
1 participation withdrawal
1 foetal death

32 - 34 Weeks Questionnaire
n= 89/168 (53%)
n= 89/123 (72%)

2 mths after birth Questionnaire
n= 91/168 (57%)
n= 91/123 (74%)

Sweden: 18 - 20 weeks Questionnaire
Eligible: 530
Agreed to participate: 519

Response
386/519 (74.4%)
128 non responders
2 participation withdrawals
2 fetal deaths
1 sick baby

32-34 weeks Questionnaire
n= 323/519 (62%)
n= 323/386 (84%)

2 mths after birth Questionnaire
n= 300/519 (54%)
n= 300/386 (78%)
Characteristics of the cohorts

Characteristics of the two cohorts are presented in Table 4. There were no statistically significant differences in socio-demographic background variables between the two groups although there were more women in the Swedish cohort who had a previous instrumental vaginal birth ($p=0.006$) while the proportion of women who had a previous elective ($p <0.001$) and emergency ($p <0.001$) caesarean was higher in the Australian sample.

**Australia**

When compared to the maternal characteristics of women who had given birth across the whole state of Victoria in 2009 (193) (Table 5), the women from Wangaratta who agreed to participate in this study were slightly younger and more likely to be married or cohabiting. There was no difference in parity. For those who had previously given birth, the Wangaratta cohort had fewer women who had previously had a vaginal birth than for multiparous women in the state wide data set. Educational status could not be compared between the groups since this information was not available from the state maternal statistics.

**Sweden**

The demographic and maternal characteristic data of the Örnsköldsvik cohort was compared to similar data from Västernorrland County and the Swedish national data. The Örnsköldsvik cohort had a higher level of education when compared with all women in the age group 18-42 years in Västernorrland. Only 5.4 percent of the participants were born outside of Sweden compared to the national average of 23 percent. There were more women in the 25-35 year age group from Örnsköldsvik when compared to Västernorrland and all of Sweden (Table 6).
Table 4. Characteristics of women from the two cohorts in Sweden and Australia at 18-20 weeks gestation

<table>
<thead>
<tr>
<th></th>
<th>Australia n=123</th>
<th>Sweden n=386</th>
<th>X²</th>
<th>DF</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;25 years</td>
<td>24 (19.4)</td>
<td>66 (17.1)</td>
<td>0.53</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>25-35 years</td>
<td>85 (68.5)</td>
<td>270 (69.9)</td>
<td>1.2</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>&gt;35 years</td>
<td>15 (12.1)</td>
<td>50 (13.0)</td>
<td>1.5</td>
<td>1</td>
<td>0.29</td>
</tr>
<tr>
<td><strong>Married or cohabiting</strong></td>
<td>116 (95.9)</td>
<td>376 (97.7)</td>
<td>1.2</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Not living with a partner</td>
<td>5 (4.2)</td>
<td>9 (2.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary school/high school</td>
<td>61 (51.7)</td>
<td>173 (46.3)</td>
<td>1.5</td>
<td>1</td>
<td>0.29</td>
</tr>
<tr>
<td>Higher education/university</td>
<td>57 (48.3)</td>
<td>201 (53.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Previous Infertility &gt;1 year prior to pregnancy</strong></td>
<td>17 (13.9)</td>
<td>42 (11)</td>
<td>0.79</td>
<td>1</td>
<td>0.37</td>
</tr>
<tr>
<td><strong>Primiparas</strong></td>
<td>46 (37.1)</td>
<td>168 (43.5)</td>
<td>1.28</td>
<td>1</td>
<td>0.25</td>
</tr>
<tr>
<td>Multiparas</td>
<td>76 (62.3)</td>
<td>218 (56.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Previous Mode of Childbirth (Multiparous)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal Birth (one or more)</td>
<td>47 (44.6)</td>
<td>172 (36.9)</td>
<td>2.2</td>
<td>1</td>
<td>0.11</td>
</tr>
<tr>
<td>Instrumental Vaginal (one or more)</td>
<td>3 (2.5)</td>
<td>39 (10.1)</td>
<td>7.14</td>
<td>1</td>
<td>0.008</td>
</tr>
<tr>
<td>Elective caesarean (one or more)</td>
<td>14 (11.5)</td>
<td>19 (4.9)</td>
<td>6.5</td>
<td>1</td>
<td>0.01</td>
</tr>
<tr>
<td>Emergency caesarean (one or more)</td>
<td>24 (19.7)</td>
<td>26 (6.7)</td>
<td>17.48</td>
<td>1</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Table 5. *Characteristics of Australian study participants compared to state wide characteristics*

<table>
<thead>
<tr>
<th></th>
<th>Wangaratta</th>
<th>State of Victoria (^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n 123</td>
<td>n 71572</td>
</tr>
<tr>
<td>Age</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Mean</td>
<td>30.3</td>
<td>31.2</td>
</tr>
<tr>
<td>Median</td>
<td>31.1</td>
<td>31.4</td>
</tr>
<tr>
<td>Married or cohabiting</td>
<td>116 (95.9)</td>
<td>61434 (88)</td>
</tr>
<tr>
<td>Not married or cohabiting</td>
<td>5 (4.1)</td>
<td>8582 (12)</td>
</tr>
<tr>
<td>Primigravida</td>
<td>46 (38)</td>
<td>30814 (43)</td>
</tr>
<tr>
<td>Multigravida</td>
<td>76 (62)</td>
<td>40730 (57)</td>
</tr>
<tr>
<td>Previous CS (Multiparas only)</td>
<td>50 (57)</td>
<td>11286 (28)</td>
</tr>
<tr>
<td>Previous vaginal birth (Multiparas only)</td>
<td>38 (43)</td>
<td>29444 (72)</td>
</tr>
</tbody>
</table>

Table 6. Maternal characteristics of Swedish study participants compared to Västernorrland and national maternal characteristics

<table>
<thead>
<tr>
<th></th>
<th>Örnsköldsvik</th>
<th>Västernorrland</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n 388</td>
<td>n 2936</td>
<td>n 108343</td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
</tbody>
</table>

**Parity**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Nulliparous</td>
<td>169 (43.6)</td>
<td>1014 (42%)</td>
<td>49,187 (45.4%)</td>
</tr>
<tr>
<td>Multiparous</td>
<td>219 (56.4)</td>
<td>1398 (58%)</td>
<td>59,156 (54.6%)</td>
</tr>
</tbody>
</table>

**Age group**

<p>| | | | |</p>
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<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>&lt; 25 yr</td>
<td>52 (13.7)</td>
<td>407 (17.2)</td>
<td>15445 (14.5)</td>
</tr>
<tr>
<td>25-35 yr</td>
<td>272 (70.1)</td>
<td>1497 (63.3)</td>
<td>66569 (62.7)</td>
</tr>
<tr>
<td>&gt; 35 yr</td>
<td>63 (16.2)</td>
<td>459 (19.4)</td>
<td>22695 (21.4)</td>
</tr>
</tbody>
</table>

**Not co-habiting**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-habiting</td>
<td>378 (97.4)</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

**Education**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>11 (2.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>163 (43.4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Higher Education/ University**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>202 (43.7)</td>
<td>36%</td>
<td>Unavailable</td>
</tr>
</tbody>
</table>

**Country of Birth**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>367 (94.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>21 (5.4)</td>
<td></td>
<td>23%</td>
</tr>
</tbody>
</table>

---

*a* 2008 Births, Statistics Sweden  
*b* All women  
18-42 yr
Paper I


Measurement of fear: The Fear of Birth Scale (FOBS)
The Fear of Birth Scale tested in this study supported previous research regarding the clinical utility of a VAS based instrument to identify women with a high fear of birth. The two visual analogue items measuring fear and worry were strongly correlated, supporting their combination to form a combined score with strong internal consistency. The validity of the FOBS was supported by the finding that women who reported positive or very positive feelings about the approaching birth recorded significantly lower FOBS scores than women with negative or mixed feelings. Women who had received counselling as part of the Aurora program also recorded significantly higher FOBS scores than those who were not referred for counselling. The cut-point of 50 clearly distinguished these two groups of women. Over 85 percent of the women receiving counselling recorded a FOBS score over 50.

Prevalence
High levels of fear (FOBS >50) were found in 31.1 percent of Swedish women and 29.5 percent of Australian women. There was no statistically significant difference in prevalence of high fear between the two cohorts. The FOBS scores in the Swedish group were: median=38, mean=41, SD=21 and the Australian group was: median=37, mean=38.2, SD=24.1.

Factors associated with levels of childbirth related fear
In the Swedish cohort significantly higher FOBS scores were identified for primiparous women, and for those who had a previous emergency caesarean section. Although Australian primiparous women recorded higher FOBS scores (median=41) than multiparous women (median =33.8), the difference did not reach statistical significance.

Preferred Mode of Birth and FOBS score
When compared with the Swedish sample, a significantly higher proportion of the Australian women indicated that they would prefer an elective caesarean section, 19 percent (n=23) compared to 8.8 percent (n= 33). There was no significant difference in FOBS scores for these Australian women preferring a caesarean section (median=34) compared to the women who preferred a vaginal birth (median=36). The women from Sweden who preferred an elective caesarean section recorded significantly higher FOBS scores (median=55) than women who preferred a vaginal birth (median=39). Of the Australian cohort who had experienced a previous caesarean (planned or
emergency), 74.3 percent reported a preference for an elective caesarean for this birth compared with only 48.6 percent in the Swedish group.

**Paper II**


**Attitudes and beliefs**

The focus of this study was to compare the attitudes and beliefs about birth from the women in the two cohorts and to determine if there associations between particular attitudes and preferred mode of birth. The women from both cohorts answered questions regarding the type of birth that they wanted based on a range of attitudinal and belief statements. This study aimed to firstly look at the attitudes individually and then to reduce the number of attitudinal statements into a clinically manageable set of key attitudes.

The sixteen attitudes and beliefs were found to have four components or subscales after Principal Components Analysis was conducted. The components were given descriptive labels: ‘safety concerns’, ‘personal impact of birth’, ‘freedom of choice’, ‘birth as a natural event’. This four-component scale was subsequently named the Birth Attitudes Profile Scale (BAPS). The individual attitudinal items and internal consistency statistics that make up each subscale can be seen in Table 4.

The Swedish women were more likely than the Australian women to express attitudes and beliefs regarding the impact of pregnancy and birth on their body, the right to determine the type of birth they want and to value the natural process of birth. Importantly, women from both countries who preferred caesarean were less likely to agree with attitudes related to birth as a natural event.
Table 4. *Birth Attitudes Profile Scale (BAPS)*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Mean inter-item correlation and Cronbach α</th>
<th>‘I would like a birth that…’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety concerns</td>
<td>0.31</td>
<td>is the safest option for me</td>
</tr>
<tr>
<td></td>
<td>α 0.41</td>
<td>is the safest option for my baby</td>
</tr>
<tr>
<td></td>
<td></td>
<td>is the least stressful option for my baby</td>
</tr>
<tr>
<td>Personal impact of birth</td>
<td>0.34</td>
<td>is as pain free as possible</td>
</tr>
<tr>
<td></td>
<td>α 0.80</td>
<td>is the least stressful option for me</td>
</tr>
<tr>
<td></td>
<td></td>
<td>will reduce the chances of ‘stress’ or ‘cough’ incontinence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>will allow me to feel fit and well sooner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>will least affect my future sex life</td>
</tr>
<tr>
<td></td>
<td></td>
<td>will allow me to plan the date my baby is born</td>
</tr>
<tr>
<td></td>
<td></td>
<td>will allow me to feel more in control</td>
</tr>
<tr>
<td>Freedom of choice</td>
<td>0.40</td>
<td>If a woman wants to have a caesarean she should be able to have one under any circumstances</td>
</tr>
<tr>
<td></td>
<td>α 0.48</td>
<td>If a woman wants to have a vaginal birth she should be able to have one under any circumstances</td>
</tr>
<tr>
<td>Birth as a natural event</td>
<td>0.39</td>
<td>Giving birth is a natural process that should not be interfered with unless necessary</td>
</tr>
<tr>
<td></td>
<td>α 0.67</td>
<td>…is as natural as possible</td>
</tr>
</tbody>
</table>
Profiles of pregnant women
This study used cluster analysis to group women according to their attitudes, beliefs and levels of fear with the aim of describing clinically recognisable profiles. These profiles were then compared to determine if belonging to a certain profile was associated with specific outcomes such as mode and experience of birth. Three clusters of women were identified:

Cluster 1 Self determiners, were characterised by low fear and strong levels of agreement with the attitudes relating to the personal impact of birth, safety concerns, the natural process of birth and freedom of choice.

Cluster 2 Take it as it comes, also had low fear. They had low levels of agreement on all the attitude and belief items.

Cluster 3 Fearful, scored high on childbirth fear and showed moderate agreement to the items regarding the personal impact of birth and safety concerns. This group had low levels of agreement with the items relating to the natural process of birth and to exercising free choice regarding mode of birth (See figure 4).

Characteristics of clusters
The numbers of women in the Australian cohort were evenly spread across the Self determiners, Take it as it comes and Fearful clusters (32 percent (n=37), 35 percent (n=40), 33 percent (n=38) respectively. The Swedish cohort had a comparatively less balanced membership: Self determiners 42 percent (n=155), Take it as it comes 25 percent (n=90) and Fearful 33 percent (n=121). While there was a trend toward the Swedish cohort having more Self determiners, this did not reach statistical significance. Given that cluster membership was not affected by country of care a decision was made to conduct all further analysis on the three profiles as a combined Swedish/Australian cohort.

The socio-demographic and personal characteristics of each cluster were compared with no differences detected in age, marital status, parity or previous infertility. There was a greater proportion of women with a lower level of education in the Self determiners cluster. There were also fewer women who had experienced a previous caesarean in this group. More women from the Fearful cluster reported a previous negative experience of birth.
Antenatal self reported health and feelings toward birth

After adjustment for age, country of care, education, and parity, the Fearful cluster at 18-20 weeks gestation was more likely to have poorer self rated emotional health than the women in the Self determiners cluster. They were more likely to prefer a caesarean and more likely to have negative feelings about being pregnant. They were seven times more likely to have negative feelings about the approaching birth and twice as likely to have negative feelings about the first weeks with a newborn.

Birth Outcomes

The women classified in the Self determiners cluster had the highest percentage of unassisted vaginal births. When compared to the Self determiners, the Take it as it comes reported three times the likelihood of elective caesarean. The Fearful cluster had five times the likelihood of having an elective caesarean and higher odds of having an epidural if they laboured. Fearful women reported a higher likelihood of having received counselling during pregnancy for their fear of birth when compared with the women in the Self determiners cluster. Additionally, their likelihood of a negative birth experience was higher.

After excluding women who had an elective caesarean, the Take it as it comes cluster reported a shorter length of labour than women in the other two clusters. The Fearful reported their experience of labour pain as more intense than women in the other clusters.
Figure 4. Clusters identified from z-score transformed responses to four attitudinal subscales and FOBS mean score.
Paper IV

Haines H, Hildingsson I, Pallant JF, Rubertsson C. The role of women’s attitudinal profiles in their satisfaction with the quality of their antenatal and intra-partum care. (Submitted manuscript).

This paper identified deficiencies in antenatal and intra-partum care as perceived by women grouped by their attitudinal profile. Care was defined as deficient when women rated that aspect as something important to them and then subsequently rated the quality of the delivery of that aspect of care as unsatisfactory. As a guide for health services, action should be taken to improve care when 20 percent of more respondents perceive an aspect of care as deficient.

The Self determiners reported the best outcomes. Considerable numbers of women in all three profiles perceived deficiencies in the quality of several aspects of antenatal and intra-partum care. The Fearful were the most likely to perceive the quality of their care as deficient in both the antenatal and intra-partum period.

Perceived deficiencies in antenatal care

At 34-36 weeks gestation when asked to reflect upon their overall antenatal care, women in all profile groups reported that their satisfaction was high - ranging from 81.2 percent to 91 percent. When specific aspects of care were examined a more negative picture emerged, particularly for women classified in the Fearful profile.

Of the Fearful, 31 percent (n=32) perceived that the midwife/doctor’s understanding of their situation was deficient. This was the highest proportion of the three profiles. The Fearful were also the largest group to report that the midwives or doctors did not take them seriously and that there was insufficient time given to talk about ailments or concerns they may have. There was also a significantly higher proportion of Fearful women reporting a perception of deficient general medical care (33 percent, n=32) and emotional care (34 percent, n=33). When compared to the Self determiners, the Fearful were two times more likely to report deficient medical care and three times more likely to perceive their emotional care as deficient.

More than 20 percent of women across all of the three profiles reported deficiencies with the quality of the information they received about breastfeeding, labour and delivery and the period following the birth of the baby. These women rated information as very important to them and subsequently reported the delivery of that information as unsatisfactory. More than 20 percent of women in all three groups were also dissatisfied with the quality of the support they received from either the midwife or doctor.
Further to this, more than 20 percent of women in the *Take it as it comes profile* perceived that the medical care and the emotional/psychological care were deficient.

*Perceived deficiencies in the quality of intra-partum care*

Satisfaction was high on the global questions regarding intra-partum medical, emotional and overall care with results ranging from 83 percent to 99 percent of all women being satisfied.

When specific aspects of intra-partum care were analysed for the three groups, it was the *Fearful* who were twice as likely to report deficient care in two aspects of their experience: ‘control of the body’ and ‘support from the midwife’ when compared to the *Self determiners*.

More than 20 percent of women from all cluster groups perceived that they were not adequately involved in decision making during labour and birth, nor did they feel adequately in control. More than 20 percent of all women went on to report that they got insufficient opportunity to meet with the attending midwife after the birth and that there was inadequate assistance with the first breast-feeding experience.

Additionally more than 20 percent of both the *Fearful* and the *Self determiners* reported deficient care in relation to the involvement of their partner during the birth. Further to this 24 percent (n=24) of the *Take it as it comes* cluster were dissatisfied with the quality of their medical care.
Methodological considerations

The four studies conducted in this thesis came from two cohorts with the same inclusion and exclusion criteria: a normal ultrasound at 17-19 weeks gestation and competence in the Swedish or English language depending on which cohort the participants came from. The 17-19 week ultrasound is almost universal for women in both settings (6, 194). Including only women with a normal result prevented those with seriously abnormal pregnancies from an inappropriate invitation into the study.

It is important to consider the procedure used to select participants in a study and the factors that influence study participation. Consideration of the characteristics of the people studied and those who were not studied is important in terms of the generalisability of findings to a wider population. Rothman, Greenland and Lash (195) explain that

Because estimates of effect are conditioned upon participation, the associations observed in a study represent a mix of forces that determine participation and the forces that determine disease occurrence (p.134)

Recruitment and participation

The participation rates were quite different in the two settings and warrant some explanation. The procedure for recruiting women at the Swedish site was that all women attending for an ultrasound at 17-19 weeks gestation at the recruiting hospital were invited to participate if their ultrasound results were normal. In the Swedish setting, specially trained midwives undertake the ultrasound examination and the determination of ‘normal ultrasound’ is made at the time of the examination. In the Australian setting, obstetric ultrasound is not conducted by midwives but by radiographers with the results determined by medical radiologists, who then report the findings back to the woman’s referring GP in the following week. As discussed previously, shared antenatal care between the GP, hospital midwives and obstetricians is common in Australia and was the model in this setting. Recruitment therefore, could not take place until the women presented with a normal ultrasound result for what is a routine booking visit with a midwife at the recruiting hospital. The women are encouraged to attend the booking visit with their ultrasound result.
Some women did not present until well after the 20th gestational week and were not eligible to participate. Some women attended the booking visit prior to having an ultrasound and were also not eligible to participate. For those women who attended the booking visit with a normal scan result another barrier to recruitment occurred. The booking visit is extremely busy for both the midwife and the woman. It is potentially an overwhelming encounter for many women as they receive a great deal of information, blood tests and further appointment times for the antenatal clinic where they will meet new midwives and doctors. The burden of completing a questionnaire on top of this may have been too much for some women. The midwife is time pressured and it is possible that the effort required to explain the study and recruit women was not sufficient. Many women may simply have decided not to bother.

An alternative recruiting strategy might have been to ask the GPs to invite women to participate in the study, however this was even more problematic. There are numerous GP practices that undertake shared antenatal care for women birthing in Wangaratta both within the city itself and in some of the little towns close by. Engaging each of these GPs in the recruitment of participants was not feasible. The time lapse between a woman having her scan and next seeing her GP varies between these practices with the potential to create a further barrier to recruitment.

Selection bias
The women from Örnsköldsvik who consented to participate in the study represented 98 percent of all eligible women in contrast to the consented women from Wangaratta who represented 41 percent of those eligible. This has the potential to produce a selection bias in the Wangaratta cohort. The Australian cohort was slightly younger, with fewer single women and more women with a previous caesarean birth than the state average. There was no difference in parity. Logistic regression techniques were used in the project to control for the potential confounders of age, parity and previous mode of birth.

The Swedish cohort had more pregnant women in the 25-35 year age group than in the maternal statistics from Västernorrland. This cohort also had a higher level of education when compared with all women in the age group 18-42 years from Västernorrland. Again logistic regression analysis ensured that these factors were controlled.

This study excluded women who were unable to speak the native language of their respective country of care and therefore limited the study’s capacity to assess a more diverse set of beliefs and attitudes. Both regional centres were characterised by low numbers of foreign-born women. We would suggest that the findings of this work are generalisable to the wider population of Västernorrland and regional Victoria. Any cultural meanings
attached to subjects such as fear, attitudes and beliefs would limit its applicability in populations with greater proportions of foreign-born women.

**Cross-cultural cohort comparison**

Both study sites were well matched for the demographic features of the participants, the national political and economic situation and the resources of the respective health services. This allowed for the possibility of other salient differences to be identified between the two groups. A potential limitation of the comparison may have been the higher proportion of women with a previous caesarean in the Australian cohort. This was also higher than the regional average. Women who have had a previous caesarean birth are more likely to have a fear of birth than parous women who have not had a caesarean (90). Further to this, fear of birth is a common characteristic of women who request or prefer a caesarean (9, 196). Australian women proportionally have a high rate of repeat caesarean in the next pregnancy (197). This may have had an effect of overestimating the prevalence of fear and preference for repeat caesarean in the Australian cohort (Paper I). The higher number of women with previous caesarean was reflective in general that the caesarean rate in Australia is much higher than in Sweden. When analyses were undertaken comparing *Fearful* women to the other women for all outcome variables, adjustment was made to control for previous mode of birth.

**Prospective longitudinal design**

The strength of the prospective longitudinal design used in this study is the capacity to establish the relationship between antecedent events and outcomes by following the group over time. Three time points allowed us to follow the participants from early pregnancy through until after the birth. The prospective design ensured that the responses were considered at the time the women were experiencing the phenomenon being considered, rather than recalled (as in retrospective design) which can lead to both under and overestimation of responses as influenced by poor memory or by recent positive or adverse outcomes (198).

**Sample size**

The sample size in this study was relatively small (n=123 Australia, n=386 Sweden). This was an exploratory study and further research is now needed on larger samples in other settings to test the stability of the developed profiles and to further estimate the prevalence of fear particularly in Australian populations.

**Response bias**

One of the challenges of a longitudinal design is loss to follow-up. The first questionnaire in this study was returned by 74 percent of consented women in both cohorts. Of those who agreed to participate, 54 percent of the origi-
nal Australian cohort and 58 percent of the Swedish cohort returned the third questionnaire. These response rates are quite favourable when compared to other self-report questionnaire studies on psychosocial aspects of birth using cross-national samples (89, 199).

In the Australian cohort there were more single women in the group who dropped out of the study than remained in the study. Given that lack of social support is a known characteristic of women with fear of birth, it is possible that our findings could have underestimated the effects of childbirth fear on the outcome variables in the Australian sample. In the Swedish cohort there were more women of low education who dropped out when compared to those who completed the study questionnaires. There were no other demographic or maternal differences in previous caesarean, parity, age, level of fear, civil status and country of birth for either cohort.

The return of de-identified questionnaires to a research team external to the clinical team should have reduced any gratitude or social desirability bias. This study did not control for a potential social acceptability bias of self-report. Socially desirable answers should have been decreased by the respondents returning the questionnaires in closed envelopes with no possibility for midwives or doctors involved in the care to know who was participating in the study and what their responses were.

Recall bias
The prospective design of this study ensured that attitudes, beliefs and fear were measured during pregnancy, thereby avoiding the potential problem with recall bias or problems with overestimation of severity influenced by any recent adverse outcomes (74). Study IV was the exception to this with women’s responses to the quality of their intra-partum care relying on their recollection of the birth two months afterwards. Previous work has demonstrated that this period is short enough to reduce problems with recall and long enough to eliminate an overestimation of severity (200).

Construct validity
The questions used in the three survey instruments were drawn from prior Australian, British and Swedish studies of the pregnancy and birth experiences of women. Most of the questions had been used in both the Swedish and English language previously: KUB study (201), Survey of Recent mothers (148) and the National Sentinel Report on Caesarean Section (124). The questionnaires were piloted in both settings with minor wording modifications made to ensure semantic equivalence. The use of questions which had been used from prior English and Swedish language studies strengthened the project’s capacity to measure the same construct in two different language groups.
Reliability and Internal consistency

The FOBS used in these studies built on the earlier results of the use of a VAS instrument reported by Rouhe et al. (90) as a simple means of identifying women who come to the antenatal encounter with a fear of birth. The reliability of the FOBS has been discussed previously in this thesis. The findings from our work however, now call for validation of the FOBS against the widely accepted W-DEQ A (75). In particular more testing is required to determine the most accurate cut-point for determining serious fear. The cut-point chosen in our study followed that suggested by Rouhe et al. (90). Our study measured fear at 18-20 weeks. It is not clear if fear of birth increases as the pregnancy progresses. When measured over the course of the pregnancy both an increase in fear (202) and no change has been reported (203). Given that the prevalence of fear from our findings was comparatively higher than what is generally reported in the literature at the later time-point of 36 weeks gestation, the cut-point chosen may have been set too low. The cut-point of 50 did however accurately classify 85 percent of all the Swedish women with fear of birth who were referred to the ‘Aurora’ program.

Confounding

Consideration of possible confounding factors is an important issue to consider when conducting observational studies such as the cohort study undertaken for this thesis. To be classified as a confounder a particular variable must be an extraneous risk factor for the outcome (195). It must be associated with the exposure under study in the source population and it must not be affected by the exposure (it is not a step in the causal path between exposure and outcome) (195). In our analyses we tested associations between the independent and dependent variables using logistic regression to calculate odds ratios. The use of logistic regression as a statistical technique allowed us to control for known confounders in obstetric outcomes such as age, previous mode of birth, parity, admission of baby to an intensive care unit and finally in the analyses that combined the cohorts from Australia and Sweden; country of care.

Statistical conclusions

All statistical tests in this thesis used an alpha value of 0.05 as the significance level. This study was exploratory and hypothesis generating rather than hypothesis driven. Although in study IV a large number of statistical analyses were undertaken it was decided not to adjust for multiple testing and therefore the alpha level remained at \( p < 0.05 \). This follows the recommendation of Bendera and Lang (204) who reviewed the procedures used to adjust for multiple testing and recommended that no multiple test adjustment be made for exploratory analyses. Now that the results from this preliminary
work have been reported, further confirmatory studies are required which should adjust for the effects of multiple testing.
Discussion

Four findings stand out from these studies. Firstly, the Fear of Birth Scale (FOBS) showed promise as a clinically practical way for midwives and doctors to identify women early in pregnancy who may have significant fears. Using this scale, this thesis has identified a similar prevalence of fear of birth in the Australian and Swedish cohorts. Secondly, some important differences were identified between the Australian and Swedish women’s beliefs and attitudes about birth. The Swedish women were more likely to have attitudes that indicated a greater concern for the personal impacts of birth and a belief system that positioned birth as a natural event when compared to the Australian women. Women in both countries whose preferred mode of birth was caesarean were less likely to hold the belief that birth was a natural event. Finally, when women’s attitudes and levels of fear were combined, three profiles were identified: Self determiners, Take it as it comes and Fearful. Belonging to the Fearful profile had the most negative outcomes for women including how they perceived the quality of their care.

Fear of Birth

The mounting interest in fear of birth from countries outside of Scandinavia has been situated very much within the discourse on the growing rates of caesarean in general and ‘caesarean on demand’ in particular (76, 125). The results of Paper III confirmed that belonging to a profile characterised by fear significantly increased a woman’s odds of having an elective caesarean. The desire to define, describe and measure fear of, and attitudes to birth is just one form of epistemology - a positivist scientific approach to which this thesis has adhered. This approach has allowed the concept of fear and attitudes to be measured in the same way in two different cultural settings. It is acknowledged that prior studies using both using qualitative and quantitative methods of enquiry have informed much of the understanding upon which this present work is built. We have seen from our current study that fear of birth is a reality for both Swedish and Australian women and that the impact of fear on women’s experiences of pregnancy and birth crosses cultural boundaries.

Fear of birth is not only an individual dilemma but a wider societal dilemma. If fear of birth increases the prevalence of elective caesareans then this will have organisational implications for the health service and those who work in it (205). More broadly than that, when fear of birth becomes
established in a society it has a transformative effect on the way birth is imagined and constructed (206). Ultimately fear can change a society’s values and beliefs. When the societal belief is that childbirth is a fearful and risky business we see a society respond to that belief. Risk mitigation is big business in health care. The response is to seek ‘experts’ and technology to take responsibility for, and to control, that risk. This has seen maternity care embrace foetal monitoring, chemical induction of labour and sophisticated anaesthetic-led methods of pain relief (207, 208). With this expertise in technology there comes a reciprocal transference of midwifery and medical focus away from the very personal and emotional experience that birth is for an individual woman and her family. Despite higher rates of elective caesarean and higher rates of epidural (for the women who laboured), fearful women in this study were more likely to report dissatisfaction with the quality of their care (Paper IV). For fearful women, being blanketed in technology may be a poor substitute for being surrounded by emotionally supportive care.

Identifying fear

The format of the FOBS scale (Paper I) was modified from the single item VAS used by Rouhe et al. (90) to include two items. The inclusion of two items allowed an estimate of the scale’s reliability. The scale showed very high levels of internal consistency. There was also some preliminary support for the construct and ‘known groups’ validity of the measure. The FOBS is simple to use and potentially easily interpretable by a midwife or doctor. This practical functionality has been supported by Storksen et al. (77) who showed that a numeric rating scale used in their study had a correlation of 0.57 (Spearman) with the W-DEQ. Further to this they proposed that a simple numeric scale for identifying fear of birth may hold better clinical efficacy than the more complex W-DEQ (77).

Based on the FOBS cut-point of 50 the prevalence of high fear at 18-20 weeks gestation was approximately 30 percent for both cohorts. There are only two prior studies from Australia which have focused on fear of birth. Fisher et al. reported a qualitative study focusing on the social context of women’s fear (92) followed by a later study from Fenwick et al. which measured fear of birth using the W-DEQ A (91). The Fenwick study reported a prevalence of 26 percent of high levels of fear in a cohort of 401 women at 36 weeks gestation. The authors suggested that the prevalence of fear in the Australian context at the time was largely unknown and that Australian levels of fear may be higher than the better understood prevalence of fear in the Nordic countries. The findings of this thesis suggests that fear of birth is at least as prevalent in an Australian cohort as in a Swedish cohort.
Differences in characteristics of fearful Swedish women compared with Australian women

The characteristics of fearful Swedish women in our study supports previously reported work from Scandinavian populations (82,90). There were higher FOBS scores for primiparous women and for those who had previously had an emergency caesarean section. A previous negative birth experience was also found to be associated with greater fear in the current pregnancy, with those women reporting a less than positive previous experience recording significantly higher FOBS scores.

The characteristics of fearful women in the Australian group did not reflect the same pattern. Women who preferred a caesarean in the current pregnancy did not have significantly higher FOBS scores than those preferring vaginal birth. This was an interesting finding which could reflect the higher number of women in the Australian group who have had a prior caesarean and feel some degree of comfort in planning another caesarean birth (209). Alternatively, it could be a reflection of the underlying attitudes and beliefs held by both groups towards highly medicalised birth, a hypothesis which gained some support from the findings of Paper II.

The importance of believing birth is a natural life event

The factor analysis undertaken on the attitudes and beliefs statements adapted from Thomas and Paranjothy (124) supported the formation of an integrated set of items, consisting of four subscales. The Birth Attitudes Profile Scale (BAPS) could assist further research in progressing understanding of how women think about birth, and the relationship that attitudes have with birth outcome. This tool provides a practical means to assess large numbers of women and make measurable comparisons.

The proportion of the Australian women agreeing with the attitudes and beliefs concerning birth as a natural event was significantly less than in the Swedish sample (Paper II). This is an important finding. Differences in how childbirth is conceptualised in Sweden and Australia may be behind this attitude regarding birth as a natural process. Concerns around keeping birth normal is consistent with the Swedish model of health care that values solidarity and where the power of professional groups outside of medicine have historically had greater influence in policy decisions (31). The Swedish women showed a stronger agency in having decisive attitudes particularly in regard to the items in the subscale ‘Personal impact of birth’. This finding is in accordance with the social values of Sweden as illustrated in the world values survey discussed at the beginning of this thesis. While authors such as Beckett (210) refute the idea that some women’s preference or acceptance for ‘high-tech’ obstetrics is the result of a passive ‘socialisation’ into ‘dominant values’ as ‘theoretically inadequate’, our findings challenge this view.
Australia has twice the rate of caesarean births compared with Sweden, with a much greater role played by the medical profession in the antenatal period. Importantly, women in both countries who indicated that they would prefer a caesarean showed less agreement with attitudes associated with the concept of birth as a natural life event than women who prefer a vaginal birth, something that was also seen in British (124) and Canadian populations (134). The belief that childbirth is either a natural event or a medical event appears to be a key belief system which impacts on behaviours, decision making and satisfaction for women. Beliefs are formed by knowledge and information (130) thus providing an opportunity for midwives or doctors to act as influential messengers. It follows that the messages given to women will be informed either explicitly or implicitly by the attitudes and beliefs of these midwives and doctors.

The prospect of repeat caesarean becoming a cultural norm for Australian women is reflected in the latest national report on birthing which indicates that 83.6 percent of women with a history of caesarean gave birth by caesarean again in their next pregnancy (197). In Sweden, this figure is estimated to be 48 percent (5). One Australian study (92) found that women who had experienced prior caesarean and who had a preference for another caesarean section in a subsequent pregnancy were not actively encouraged to choose a VBAC. The medical discourse that followed their caesarean contributed to the fear and anxiety these women felt and led to them ‘reframing’ caesarean section as a safe, certain, low-risk birth. Additionally, the organisation of antenatal care in Australia can create a situation where women find a doctor in the public clinic who is supportive of VBAC only to return at the next visit to meet another doctor who is not so encouraging (209).

The concept of women receiving clear evidence to exercise autonomous decision making regarding mode of birth was also challenged in the findings from Bryant et al. (211). The authors contended that from a western consumer perspective, success for both mothers and babies meant that women are obliged to choose what is set up as the most obvious and sensible option: safe, ordered, caesareans. The broader influences of expert opinion, community notions of ‘good’ mothering and ‘bad’ mothering, lead women to a construction of risk and safety that favourably positions the medical perspective of repeat caesarean (211).

**Three profiles of pregnant women**

When women’s fear, attitudes and beliefs were examined as a whole (Paper III), three clinically recognisable profiles were constructed: the Self determiners, the Take it as it comes and the Fearful. The presence of fear had the most negative impact on women’s emotional health, feelings about pregnancy and parenting, experience of birth and perceptions of the quality of care (Paper IV).
Belonging to the *Fearful* cluster increased a woman’s likelihood of preferring, and actually having, an elective caesarean. *Fearful* women did not see birth as a natural event. This finding was consistent with the results of the United Kingdom Sentinel Report on Caesarean (124) which described women who preferred a caesarean as more likely to place a high priority on their own safety and being as pain-free as possible and disagree that birth was a natural process. The *Fearful* cluster contained significantly more women with a previous caesarean and a previous negative birth experience. These are well known determinants of childbirth fear (82, 89). By belonging to the *Fearful* cluster women increased their likelihood of actualising a preference for an elective caesarean. This higher prevalence of elective caesarean is in accordance with prior literature on childbirth related fear from the Nordic populations (20, 82, 156).

Women in the *Fearful* cluster reported more negative birth experience than the other clusters. Possibly inherent in their negative experience of birth was the finding that the *Fearful* cluster of women perceived their labour pain as more intense than the women in the other clusters. The findings demonstrated that the *Fearful* cluster had a higher use of epidural than the other women. Pain in labour is a complex issue. Despite widespread use of powerful analgesics and modern anaesthetic techniques, many women report high levels of pain with some describing it as the ‘worst pain imaginable’ (18). Alleviating pain does not guarantee an improvement in a fearful woman’s experience of labour or their longer-term recollections of pain (99, 212, 213).

The women in the *Take it as it comes* cluster were not afraid of childbirth and appeared to have no firm attitudinal preferences concerning birth. They were no more likely to have a preference for either vaginal or caesarean birth than the *Self determiners*, however when actual mode of birth was compared, the *Take it as it comes* group had an increased likelihood of elective caesarean. This is an important and interesting result. We might postulate that these women will just ‘go with the flow’ as described by Edwards rather than truly engaging in an informed choice (214). This cluster of women show some characteristics in common with Raphael-Leff’s ‘Reciprocator’ orientation who do not have a precise birth plan, instead holding a ‘wait-and-see’ attitude regarding the childbirth (142, 144). These women may be highly amenable to the influential opinions of midwives or doctors. The *Take it as it comes* cluster is a very important group to consider when counselling around decisions such as vaginal birth after caesarean or in presenting information on mode of birth in the case of breech presentation.

Overall the *Self determiners* cluster contained the highest proportion of women. They had the highest percentage of unassisted vaginal birth of the three profiles. These women showed firm opinions on the range of attitudes and beliefs. They were not afraid of childbirth and importantly they were the only group who showed strong agreement that birth was a natural event. Of
the three profiles, this group has features in common with Raphael-Leff’s ‘Facilitator’ (144). There were proportionally more Self determiners in the Swedish cohort but when cluster membership was compared by country of care this difference did not reach statistically significant difference. The trend towards the Swedish cohort having more Self determiners compared to the Australian cohort fits the theoretical proposition of Swedish birthing mothers reflecting Sweden’s place at the extreme high end of the secular rational and self expression values as shown in the World Values Surveys (31).

The Self determiners were less educated than women in the other two clusters. This finding does not confer with the media image of the savvy, assertive, highly educated woman holding clear views and a detailed birth-plan regarding the type of birth she wants (215). Likewise, it contrasts with the generalisations created by some healthcare professionals who perceive lower educated women as being less informed and less interested in making choices regarding their care. Green et al. (140) reported that contrary to the stereotypes of pregnant women generated by caregivers, the less educated women did not want to hand over all control to the staff and had the highest expectations for a fulfilling birth experience. Our findings are commensurate with this. When midwives or doctors encounter women who seem determined to direct the mode of birth towards technological intervention, they are most likely meeting women who are afraid, not women who simply want ease and convenience. It is important to consider how easily a midwife or doctor could think that a woman requesting a caesarean is a Self determiner when in fact she is Fearful. Sensitive questioning about fear and eliciting a woman’s attitude to birth as either a natural event or a medical event will help distinguish these women from each other and assist midwives or doctors to tailor their care accordingly.

Women’s satisfaction with the quality of their care

High global satisfaction with antenatal and intra-partum care was not reflective of women’s perception of the quality of the specific aspects of care. Fearful women reported the most problems with the care they received in both the antenatal and intra-partum periods.

Both the medical and emotional/psychological aspects of antenatal care (Paper IV) were perceived as deficient by the Fearful. ‘Routine’ antenatal care such as measuring of blood pressure, screening tests such as ultrasound, blood tests, fundal height, fetal movements and fetal heart rate could reinforce a Fearful woman’s sense of the riskiness of pregnancy and birth. While this degree of medical observation is generally acceptable to women and could be reassuring (216), the focus on fetal and maternal risk factors may increase the anxiety of women in the Fearful profile if trusted caregivers do not give sensitive and unambiguous explanations particularly about risk. These women clearly want and need emotionally supportive care.

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Take it as it comes women also identified deficient medical and emotional/psychological aspects of their antenatal care and were the only profile to perceive that their intra-partum medical care was deficient. To the midwife or doctor, these women probably seem compliant and ‘easy to manage’. These women may be reflecting their dissatisfaction with care in ways that Zadoroznyj (217) described when she found some women had a ‘faceless commitment’ or trust in abstract systems but then felt let down by the social interaction they had with these ‘trusted’ professionals. The Take it as it comes may be indicating that the caregivers are not directive enough for them or, they may be see-sawing between what Lupton (218) describes as the ideal-type ‘consumerist’ and the ‘passive patient’. Given the Self determiners low levels of agreement on the attitudes relating to freedom of choice, this dissatisfaction with medical care could be a reflection of the broad trust they place in the system and their subsequent disappointment. This is an important finding in the sense that this dissatisfaction with the quality of care may lead to women having some changed attitudes to their next birth. A woman who fitted the Take it as it comes profile in her first birth may move into the Fearful cluster in her subsequent pregnancy. Likewise, a positive experience may move her attitudes to that of the Self determiner.

The preparation for birth was particularly problematic for a considerable number of women across the three profiles. All profiles reported deficient information about labour and delivery at levels beyond the 20 percent trigger-point for system improvement. This may indicate insufficient time spent with women in the antenatal encounter discussing the possible scenarios of labour and post-natal period and/or inadequate or poorly framed antenatal education programs (219). Women expect that the health professional will supply them with the information they need about pregnancy, labour and parenting (220).

The Fearful group was at greatest risk of being dissatisfied with two important aspects of intra-partum care. This group was twice as likely to report deficient quality in the support they received from the midwife and deficiencies in care related to control. Qualitative studies have revealed that women with fear of birth feel extreme loneliness; they doubt themselves and feel uncertain of their ability to give birth to a child (100). These women desperately need a supportive midwife in the delivery room. Midwife support has been consistently associated with childbirth satisfaction. Almost 20 years ago a significant Australian study found that a woman’s relationship with caregivers was one of the most important predictors of overall satisfaction with intra-partum care (157). This was further supported by Hodnett (163), who concluded that the influence of age, socioeconomic status, ethnicity, childbirth preparation, the physical birth environment, pain, immobility, medical interventions and continuity of care are completely overridden when compared to the importance of the caregiver’s attitudes, support and rela-
tionship to the birthing woman. It seems that this most fundamental aspect of intra-partum care needs continued vigilance from midwives for women who are afraid of birth. Fisher et al’s (92) interview study with Australian women who were afraid of birth revealed two central factors that mediated against childbirth fear: positive relationships formed with midwives, and the support women received from their informal network.

Our finding that women in the Fearful cluster were more likely to indicate deficiencies with the item relating to control of their body during birth aligns with several other studies identifying childbirth fear as a correlate with feelings of low control in labour (13, 156, 221). Studies from Canada also indicate that maintaining control during childbirth for all women is important with perceived personal control a key predictor of childbirth satisfaction (173). High levels of psychological vulnerability from perceived risks or lack of control can possibly result in an obstetrically ‘normal’ birth being subjectively experienced as a traumatic experience (222). In responding to the needs of this group, Bewley et al. (120) challenged midwives and doctors to offer authentic emotional support in labour rather than relying only on ‘treating’ the fear with offers of an epidural or an elective caesarean to ‘solve’ the problem.

Whilst a focus for midwives or doctors is of course the individual woman, it cannot go unsaid that responding to fear needs to be situated in a wider ecological context including the manner in which antenatal and intra-partum care is conducted. In the Australian setting of this study women were likely to meet many midwives or doctors in the antenatal and intra-partum period. This increases the likelihood of being exposed to conflicting points of view and to reduce the capacity to form a trusting relationship with a key caregiver. In the Swedish setting there was a greater likelihood of care from one midwife in the antenatal period but no capacity to know the midwife or doctors in the intra-partum experience.

Fear, attitudes, beliefs about childbirth and the ecological model of health

A significant focus of this work has been on women who have a fear of birth. Childbirth fear has been acknowledged and discussed widely in Swedish populations (17); less so in Australian populations. This study has shown that childbirth fear was as much of a reality for the Australian women studied as it was for the Swedish women. This is the first time to the author’s knowledge that two such geographically remote cultural groups were examined simultaneously for childbirth attitudes, beliefs and fear.

The evidence is clear from prior research that multiparous women who have had a preceding negative experience of childbirth are more likely to be fearful when confronting their next birth (13). This is clinically intuitive. Personal experience is a powerful informant to the development of beliefs and attitudes. The nulliparous woman who is afraid beyond a reasonable
level of fear of the unknown may be at risk of childbirth fear because of some pre-existing anxiety (88, 105) or because of the potent influence of the society she is embedded in. Her attitudes and beliefs about birth are shaped by the implicit or explicit information she has received from her family, friends, media and health professionals she may have encountered. The system of care that she enters when pregnant for the first time will potentially reinforce those fears or allay them.

This study has shown some interesting cultural differences in attitudes and beliefs when women in Sweden and Australia are compared. These respective differences in attitudes are consistent with the extremely strong national cultural values of self expression in Sweden (31) and with the medically focused Australian system of maternity care. By placing the pregnant women from this study into the paradigm of the ecological model of health, one can perceive the wider influences of the organisation of care and national values on individual attitudes and outcomes. It follows that if there is a desire to effect change in individual women’s levels of fear and beliefs about birth, national changes to the way childbirth is constructed in conversation and policy is required.

The Swedish and Australian models of maternity care are very successful on many levels. Both systems produce universal equity of access to advanced health care for mothers and babies. They have some of the lowest levels of infant and maternal mortality and morbidity in the world. Neither system, however, offers universal access to known carers throughout the pregnancy, labour and post-partum, nor universal access to home-birth nor free choice regarding caesarean without medical indication. For some women this may be in direct conflict with their beliefs, their need for control and desire to feel at ease with the place, the carer and the mode of birth that is important to them.

The findings of this research project are suggestive that both these Swedish and Australian models of maternity care may have systemic deficits in the provision of adequate emotional support to fearful women. The Fearful women themselves have reported (Paper IV) that emotional support from midwives and doctors is important to them and they are not receiving it in an adequate way. The organisation of care in both settings may be inhibiting these therapeutic relationships. It does not require large investments of technology nor money however, to recalibrate the focus for individual midwives and doctors towards offering authentic support to women. What it takes is awareness that this is what women urgently need.
Conclusions

Fear of birth has been recognised in Sweden for some time. The ‘no worries’ approach to this issue in Australia has underestimated the needs of a considerable number of pregnant women. This thesis has described a similar prevalence of women with high fear in two cohorts from Sweden and Australia (Paper I). The Fear of Birth Scale used in this study shows promise as a simple clinical approach to identify fearful women. A simultaneous comparison of fear of childbirth in an Australian and Swedish setting provides new knowledge regarding the cultural generalisability of the construct ‘fear of birth’. Having a fear of birth negatively impacted on women’s pregnancy and birth.

This thesis has identified that a key attitude influencing preference for mode of birth is the belief that birth is a natural event (Paper II, Paper III). The cross-cultural comparison showed that the Australian women were less likely than the Swedish women to hold this belief. This may be an important indicator of the wider ecological influences in the Australian society and system of care that contributes to the higher overall rates of caesarean birth when compared to Sweden.

The clustering of women according to their attitudes, beliefs and fears has shown that belonging to the Self determiners profile may have a positive effect on pregnancy and birth; while reinforcing our knowledge of the negative impact of fear on childbearing women (Paper III and IV). Further to fear being a vital distinguishing feature in the cluster groups, the attitudes and beliefs relating to birth as a natural event was also a clear distinguisher in recognising which group a woman belonged. An important finding from Paper III was that women who are not afraid of birth but do not believe that birth is a natural event were at higher risk of elective caesarean.

Describing women in these three clusters at 18-20 weeks gestation and then following them through until two months after birth has provided some new insights into the psychosocial aspects of childbirth. The dissatisfaction (Paper IV) reported by women (especially the Fearful) in regard to the emotional aspects of care should prompt midwives or doctors and maternity policy makers to reconsider the structure and content of the antenatal and intrapartum encounter.
Clinical implications

The FOBS tool shows promise as an initial simple means for midwives or doctors to identify women who are afraid. This facilitates a starting point for a dialogue in determining the components and seriousness of childbirth fear. Early identification of women’s fears is important in responding to women with truly emotionally supportive care. Discussing fear with women at the 18-20 week check provides an opportunity to provide this support early.

Reconstructing birth as a natural event, rather than a medical event, is a pivotal belief for midwives and doctors to promote. It appears to be a very important belief in respect to elective caesarean. Women in the Take it as it comes group particularly could benefit from clear information and direction from caregivers about positioning birth as a natural part of a woman’s life rather than a technical medical event. This is especially important in the Australian setting where the prevalence of caesarean birth is high.

Women want to engage with midwives and doctors in an authentic manner both in the antenatal and intra-partum period. Midwives and doctors need to respond to this by listening carefully to women’s concerns and by showing women that they take these concerns seriously. This is especially important if a woman is afraid of birth.

Policy makers need to consider systems of care that optimise a woman’s chances of forming trusting relationships with midwives and doctors. Models of maternity care, which offer one-to-one continuity of care, may facilitate sensitive discussions and responses regarding fears, attitudes and beliefs.
This thesis comprises four exploratory studies. More research is now needed in the following areas:

- **The cut-point of the FOBS at which high fear is accurately classified needs further refinement. Validation of the FOBS against the W-DEQ A is an important next step in its development as a reliable tool to identify fear of birth in the antenatal period.**

- **Additional research is needed via population-based studies of women in Sweden and Australia to detect if there are systematic differences in attitudes between the two countries. The BAPS is a useful tool to achieve this.**

- **Further replication of the cluster analysis of this study across other populations is needed to confirm the stability of the groups, particularly given the exploratory and subjective nature of cluster analysis.**

- **Much more work is needed to find an effective therapeutic response to fear of birth. Given women’s strong need for emotional support, a large randomised control trial of a continuity of midwifery care model for women with fear of birth is required. Levels of fear at the end of pregnancy and post-partum, and preferred mode of birth, actual mode of birth and birth experience as outcome measures are recommended.**
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A doctoral dissertation from the Faculty of Medicine, Uppsala University, is usually a summary of a number of papers. A few copies of the complete dissertation are kept at major Swedish research libraries, while the summary alone is distributed internationally through the series Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine.