Birthing and the development of trauma symptoms: Incidence and contributing factors

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Forward

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Statement of originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

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Synopsis

Little is known about the relationship between women's birthing experiences and the development of trauma symptoms. A small pilot study during which seven women were interviewed about their birthing experiences found an unexpected level of trauma responses in relation to birthing. The pilot study also revealed a number of possible contributing factors that prompted the trauma responses. These contributing factors included the experience of certain obstetric interventions, the perception of inadequate care during labour and delivery and few opportunities to discuss and process the birth experience.

Using a prospective design with a large sample (n = 592), the main study of the thesis aimed to determine the incidence of acute and chronic trauma symptoms and posttraumatic stress disorder (PTSD) in women following childbirth. The study also aimed to identify factors that contribute to the development of acute and chronic trauma symptoms. PTSD was assessed according to the criteria and timeframe outlined in the Diagnostic and Statistical Manual of Mental Disorders (*DSM-IV*: American Psychiatric Association, 1994).

There were three phases of the main study. During Phase 1 women who were in their last trimester of pregnancy and received public antenatal clinic care were asked to participate in the study. In addition to obtaining demographic details, a questionnaire addressed the antenatal factors under investigation. These included level of preparation for birthing, previous obstetric/ gynaecological events, anticipation of adverse birthing events, anticipatory anxiety, and perceived level of partner support. Anxiety was also measured by responses on the State-Trait Anxiety Inventory (STAI - State version).

Phase 2 consisted of a telephone interview conducted four to six weeks postpartum. Participants (n = 499) gave details of the birth including positive and

negative birthing experiences, and completed the Perception of Care Questionnaire (PCQ) and the Impact of Events Scale (IES). If a woman nominated a stressful birthing event and reported three or more trauma symptoms (according to the IES) then the Posttraumatic Symptom Scale - Interview version (PSS) was administered. The PSS comprises all the *DSM-IV* symptoms and criteria of PTSD. In line with the *DSM-IV* criteria to determine chronic PTSD, a second telephone interview was conducted three to four months postpartum (Phase 3). Women who reported a minimum of three trauma symptoms during Phase 2 (n = 164) completed the PCQ, IES and PSS again.

Over thirty percent of participants (33%, n = 164 out of 499) reported a stressful birthing event and the presence of at least three trauma symptoms at four weeks postpartum. Twenty-eight women (5.6%) met the diagnostic criteria for acute PTSD. Antenatal variables were not found to contribute to the development of acute trauma symptoms following childbirth. There was a strong association between the level of obstetric intervention and the development of acute trauma symptoms (β = .351, $\underline{p}$ <.0001). In particular, five key obstetric events were consistently associated with the development of acute trauma symptoms. These were the experience of an emergency Caesarean section, forceps delivery, postpartum pain, vacuum delivery and serious concern about the baby's life

There was a strong association between the perception of inadequate care during childbirth and the development of acute trauma symptoms (β = .319, $\underline{p}$ <.0001). A regression analysis on the PCQ factors indicated that a woman's perception of the technical / communication aspects of care ($\underline{p}$ <.0001) and the partner response dimension ($\underline{p}$ <.0001) were inversely associated with the development of acute trauma symptoms. The PCQ factors of emotional care and midwifery care were not statistically significant.

Further analysis was undertaken to determine if the perception of care mediated the effects of obstetric intervention on the development of acute trauma

symptoms. The perception of care was found however, to have an additive effect rather than a mediation role. That is, women who experienced a high level of obstetric intervention, and perceived poor intrapartum care were more likely to develop trauma symptoms than women who received a high level of obstetric intervention or women who perceived their care to be inadequate. This model accounted for 22% of the total sample variance in the prediction of acute trauma symptoms.

At three to four months postpartum, three women met the diagnostic criteria for chronic PTSD. Disturbingly, twenty-two women (15.6%, n = 22 out of 141) continued to report trauma symptoms that constituted subclinical chronic PTSD. Factors contributing to the presence of chronic trauma symptoms were the perception of poor antenatal preparation (p <. 02) and the perception of inadequate care (p <.0001). The five key obstetric events were not statistically significant, however, a weak association was identified in relation to the total level of obstetric intervention (β = -.161, p <. 05). Women's perception of their care was found to be strongly associated with the development of chronic trauma symptoms (β = .416, p <.0001). These factors accounted for 24.5% of the total sample variance in the prediction of chronic trauma symptoms.

PTSD following childbirth is an under-recognised phenomenon and no other similar research has been conducted in Australia to date. The identification of the range and severity of acute and chronic trauma symptoms following childbirth gives an indication of the level of distress suffered by women. This research is also distinctive in identifying the antenatal, obstetric and care factors that contribute to the development of acute and chronic trauma symptoms. Such findings should prompt a serious review of intrusive obstetric intervention during labour and delivery, encourage an increased awareness for developing sensitive and individualised approaches to the care of women during childbirth, and support the needs of women to discuss this significant life event.

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CHAPTER 1

Birthing and trauma: The emerging evidence

This thesis is concerned with the relationship between birthing events and maternal distress. Childbirth occupies a unique position among the common stresses in the lives of women. Even when the labour and delivery are free of complications, it is hard and perhaps frightening work. Following childbirth, women can have complicated feelings, including joy over the arrival of their babies but also distaste for the birth experience itself. The negative experiences of birthing women have been viewed by some researchers as related to invasive procedures during labour and delivery (Fisher, 1994; Jebali, 1993; Wagner, 1994a). The increasing use of technology during childbirth has resulted in the extent to which the actual process, and indeed the pace, of labour are controlled by the medical profession. Arguably, the use of some obstetric interventions may be injurious to the mental, as well as physical, health of the women who are subjected to them.

The stress invoked by the experience of interventions during childbirth has only recently been acknowledged as sufficiently overwhelming to challenge a woman's existing coping mechanisms and contribute to the development of trauma symptoms and long-term psychological changes (Fisher, Astbury & Smith, 1997). Some researchers consider trauma experienced at, or around the time of birth, to result in a type of posttraumatic stress disorder (PTSD) (Ballard, Stanley & Brockington, 1995; Moleman, Van der Hart & Van der Kolk, 1992; Wijma, Soderquist & Wijma, 1997).

There is also growing acknowledgement of the relationship between maternal distress and the care received during childbirth. Thune-Larsen and Moller-Pedersen (1988) suggest that from a woman's perspective, traumatic births are

related to dissatisfaction with the experience of childbirth, inadequate support by medical and midwifery staff and loss of control. To date, no Australian study has reported on the incidence of trauma symptoms following childbirth, and there has not been a systematic exploration of the connection between birthing experiences and trauma.

This thesis will begin with a discussion of PTSD and the extension of this diagnostic entity into birthing experience. There is a dearth of available literature on the emergence of trauma symptoms following childbirth. The small number of available case studies will be reviewed and emerging empirical and theoretical evidence will be discussed.

Existing studies in the area of birth and trauma have predominantly been concerned with the identification and description of trauma symptoms from a medical perspective. In contrast to this approach, it was seen as important that a large-scale study in the area should be grounded in the experiences of women. The first study of the thesis is presented in Chapter 2 and outlines interviews undertaken with a small community sample of women who had recently given birth. This pilot study identified the presence of trauma symptoms and identified some perceived contributing factors in the development of trauma responses. In particular, women described the experience of obstetric interventions and some aspects of intrapartum care as distressing.

In light of the findings from the pilot study and existing research, Chapter 3 critiques the possible contribution of factors that may be related to women's experience of trauma during childbirth. Firstly, some studies suggest that predisposing factors increase a woman's vulnerability to trauma. These include previous psychiatric history, anxiety about childbirth, and a history of significant reproductive events (e.g., miscarriage). Secondly, the experience of certain obstetric interventions has been identified as traumatic for some women. For example, procedures such as a forceps delivery or episiotomy can prompt stress

responses in women. Thirdly, a poor relationship between health care providers and birthing women can also engender trauma. Factors such as feelings of powerlessness during procedures, paucity of information, and perceived unsympathetic attitude by the health professionals were identified as stress-provoking. This chapter concludes by outlining the rationale, purposes and hypotheses of the major study.

The methodological considerations for the major study are outlined in Chapter 4. The timeframe and criteria for the identification of acute and chronic trauma responses and PTSD adhered to guidelines established in the Diagnostic and Statistical Manual of Mental Disorders (*DSM-IV*: American Psychiatric Association, 1994). The main study included three phases that occurred during the last trimester of pregnancy, four to six weeks postpartum, and three to four months postpartum. The large sample used in this research study allowed for a range of statistical analyses in determining the contribution of antenatal, obstetric, and care factors to the development of trauma symptoms.

Chapter 5 presents the initial analysis of results and has three main aims. Firstly, the representative nature of the sample is established, and data in relation to the antenatal variables are outlined. Secondly, the chapter identifies the incidence of obstetric events during labour and delivery for this sample in comparison with population data. Thirdly, the reliability and validity of measures used in the study are discussed.

Chapter 6 presents further analysis of the data to determine: (1) the incidence of acute trauma reactions and acute PTSD following childbirth; (2) the identification of contributing factors in the development of acute trauma reactions; (3) the incidence of chronic (long-term) trauma reactions and PTSD; and (4) the identification of contributing factors in the development of chronic trauma reactions in the present study.

Chapter 7 discusses the research results within the context of the contemporary literature on obstetric interventions, intrapartum practices, and trauma. The outcomes of the study are discussed and factors contributing to the development of trauma symptoms are explicated. The limitations of this research are discussed and future research directions are suggested.

The thesis concludes with a discussion in Chapter 8 of the emerging issues from this research. In particular, there is little support for the notion that psychological abnormalities within women contribute to adverse obstetric outcomes. Rather, women's experience of obstetric interventions and perceived poor intrapartum care are consistently associated with the development of trauma symptoms. The direct relationship between perceived quality of care and the development of trauma symptoms has not been previously reported in the literature.

Posttraumatic stress disorder

Trauma may arise from a variety of events that can occur throughout the human life cycle and result in physical and/or psychic injury. It is estimated that four out of ten people in the United States have experienced major trauma (Davidson & Foa, 1993). Reported incidences of PTSD vary considerably with reported lifetime rates of 6.3% (Helzer, Robins & McEvoy, 1987) to 30.9% (Kulka et al., 1990). The wide variation in rates is probably attributable to different populations (e.g., male combat veterans), diagnostic methods and diagnostic thresholds. In comparison to North American figures, a survey of 10,000 Australians selected from a random sample of households, identified the lifetime prevalence of PTSD for women to be 4.2% (Australian Institute of Health and Welfare, 1998).

PTSD is an increasingly widely and well-recognised concept that has been defined by the American Psychiatric Association (APA) (1994) as an anxiety disorder. PTSD refers to the state of an individual experiencing a sustained emotional, mental or physiological response to unexpected extraordinary life

events (O'Brien, 1998). According to the APA (1994), there are explicit criteria that must be fulfilled for a specific time period in determining PTSD. The development of these criteria is discussed in the following section.

The development of the PTSD category

In 1980, PTSD was formally acknowledged by the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) (American Psychiatric Association [APA], 1980) as a distinct diagnostic classification. The *DSM-III* classification probably reflected the catastrophic effects of the Vietnam War on many U.S. servicemen in particular. Supplanting the term "traumatic neurosis", the signs and symptoms were described in terms of an anxiety disorder. Diagnosis was made from evidence of (1) a severe trauma; (2) self-report of re-experiencing the incident; (3) numbing and unresponsive reactions; (4) changes in sleep patterns, loss of memory and hyper-alertness; (5) guilt responses; and (6) avoidance of activities reminiscent of the trauma (APA, 1980).

The definition of PTSD was modified in the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R) (APA, 1987). The revision incorporated an increased emphasis on avoidance behaviour, such as when the individual makes deliberate efforts to avoid thoughts or feelings, activities or situations associated with the trauma. This inclusion reflected the importance of avoidance related symptoms in the growing understanding of PTSD (Turnbull, 1997).

While the *DSM-III-R* also recognised depression and anxiety as associated features of the disorder, the classification of PTSD continued to diverge in one important way. PTSD included an etiological variable in its criteria; that is, "exposure to a psychologically distressing event that is outside the range of usual human experience" (APA, 1987, p. 247) and would evoke distress in almost anyone. Furthermore, the *DSM-III-R* reflected an increased appreciation that the

subjective interpretation of the trauma was a contributing factor in the development of PTSD.

The definition of the traumatic event in relation to PTSD evolved further in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (APA, 1994). The focus of the stressor criterion continued to move away from the nature of the stressor to the nature of the victim's experience and perception. The current criterion requires two elements. The sufferer must have 'experienced', 'witnessed', or 'been confronted by' a threat to 'physical integrity' or worse. They must also have responded with 'intense fear, helplessness, or horror'. There is no need for the trauma to be of unusual, dramatic, or catastrophic type. As such, an increasingly wide range of events has been accepted as being causal of PTSD (O'Brien, 1998).

In addition to the stressor criterion, the *DSM-IV* (APA, 1994) outlines three characteristic features of PTSD. They include (1) the re-experiencing of elements of the traumatic event in dreams, intrusive and distressing images, and dissociative mental states, (2) emotional constriction such as psychic numbing, loss of normal responsiveness and affect, and a decrease of interest or involvement in relationships and work. These intrusive and numbing features may occur in cycles. (3) The third symptom category for PTSD is increased physiological arousal. This may include hypervigilance, sleep disturbance, outbursts of anger, impaired memory, difficulty concentrating, avoidance of activities associated with the traumatic event and worsening symptoms when exposed to events associated with the traumatic event. The full symptom picture must be present for more than one month, and the disturbance must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. Reactions lasting longer than three months are deemed to be chronic. The diagnostic criteria for PTSD according to the *DSM-IV* are outlined in Table 1.1. The diagnosis of PTSD is made when at least one re-experiencing, three avoidance, and two arousal symptoms are endorsed by

individuals who report a trauma experience at least one month prior to assessment (APA, 1994).

Table 1:1: Diagnostic Criteria for Posttraumatic Stress Disorder

A. The person has been exposed to a traumatic event in which both of the following were present:
(1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or threat to the physical integrity of self or others
(2) the person's response involved intense fear, helplessness, or horror
B. The traumatic event is persistently re-experienced in one (or more) of the following ways:
(1) recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions
(2) recurrent distressing dreams of the event
(3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on wakening or when intoxicated
(4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
(5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three or more of the following:
(1) efforts to avoid thoughts, feelings or conversations associated with the trauma
(2) efforts to avoid activities, places, or people that arouse recollections of the trauma
(3) inability to recall an important aspect of the trauma
(4) markedly diminished interest or participation in significant activities
(5) feeling of detachment or estrangement from others
(6) restricted range of affect (e.g., unable to have loving feelings)
(7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal lifespan)
D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:
(1) difficulty falling or staying asleep
(2) irritability or outbursts of anger
(3) difficulty concentrating
(4) hypervigilance
(5) exaggerated startle response
E. Duration of the disturbance is more than one month.
F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

According to the *DSM-IV* (APA, 1994) the trauma can be re-experienced in various ways. Commonly, the person has recurrent and intrusive recollections of the event or recurrent distressing dreams during which the event is replayed. In some instances the person experiences dissociative states that last from a few seconds to several hours or days. The essential features of dissociation are

“disruption in the usually integrated functions of consciousness, memory, identity, or perception of the environment. The disturbance may be sudden or gradual, transient or chronic” (APA, 1994: 477). During the dissociative state, components of the event are relived and the person behaves as though experiencing the event at that moment. Intense psychological distress or some physiological reaction often occurs when the person is reminded by something that may resemble or symbolize an aspect of the traumatic event (APA, 1994).

PTSD is also characterised by avoidance behaviours. Stimuli associated with the trauma are persistently avoided through deliberate effort (APA, 1994). The avoidance of reminders associated with the trauma may include amnesia for an important aspect of the traumatic event. The traumatised person may also report diminished responsiveness to the external environment. This is known as “emotional numbing” and usually begins soon after the traumatic event (APA, 1994). The person may feel detached or estranged from other people, report having markedly reduced abilities to feel emotions or have decreased interest or pleasure in previously enjoyed activities.

Finally, the individual has persistent symptoms of anxiety or increased arousal following the trauma experience. This increased state of arousal may result in difficulty staying or falling asleep, hypervigilance, or being easily startled (APA, 1994). Similarly, they may report feeling irritable, outbursts of anger, or difficulty concentrating (APA, 1994).

The methods used in the identification of PTSD vary according to the situation. Different techniques can be used in community studies, in diagnostic and aetiological research and clinical situations. While a specific symptom cluster (such as the *DSM-IV*) is used to define the diagnosis for PTSD, a clinical interview, using a well-validated structured format, is also recommended. This is required to not only determine the severity of symptoms, but to establish the extent of disability in occupational, social, or other important areas of functioning

(O'Brien, 1998). Further robust support for the diagnosis may be gained from physiological testing, from prolonged observation, and from information from neutral informants (O'Brien, 1998). Self-report symptoms questionnaires have been found to be sensitive and a useful screening tool (Joseph, Williams & Yule 1997). There is agreement, however, that a multimodal approach using various strategies is most appropriate in determining the presence of PTSD symptoms (O'Brien, 1998).

According to the *DSM-IV* (APA, 1994), exposure to a traumatic event is a necessary aetiological factor in the onset of PTSD. There has been serious debate however, about the necessity for an event to be 'overwhelmingly traumatic' in order for a person to develop PTSD (March 1993). Scott and Stradling (1994) have argued that PTSD can occur in the absence of extreme trauma and has been associated with a range of events that would not be considered extraordinary or particularly severe. These include loss of a job or marital separation (Davidson & Foa, 1991), idiopathic illness (McGorry et al., 1991), apparently 'uncomplicated' gynaecological procedures (Menage, 1993), and 'normal' loss events (Burstein, 1985).

Recently has there been increased interest in the relevance of PTSD to events more prevalent in women's lives than men's lives (Mayou, Bryant & Duthie, 1993). The rapidly growing research literature has confirmed the incidence of PTSD in a wide variety of traumatized female populations such as rape victims, survivors of childhood sexual abuse, and victims of domestic violence (Bohn & Holz, 1996; van der Kolk, 1987). Recent research indicates that PTSD may also follow an event such as childbirth which, on the face of it, does not seem traumatic but has been revealed as being subjectively so when medical procedures and individual perceptions are taken into account (Reynolds, 1997; Wijma et al., 1997).

Birthing as traumatic: The emerging evidence

Posttraumatic stress is not commonly associated with childbirth. The lack of recognition of post-traumatic stress in birthing women may be due in part to the belief that PTSD is in response to extraordinary events, and is hence often overlooked during birthing, which is commonplace. Even though from a medical perspective extraordinary events may not be associated with childbirth, women may experience intense fear, helplessness, and a loss of control. According to Littlewood and McHugh (1997) 'birth trauma' refers to a fundamentally negative birth experience that may be physical and/or psychological in origin. The experience of birth trauma may arouse high levels of anxiety and subsequent trauma symptoms in some women. The presence of trauma symptoms in birthing women has predominantly been presented in case study reports.

Metz, Sichel and Goff (1988) reported the emergence of overwhelming anxiety or panic during the puerperium for eleven women and presented three clinical exemplars. One woman had experienced an outbreak of genital herpes one week before delivery which necessitated a Caesarean section. The woman was reported as feeling "demoralized" as a result. Another woman had a previous "psychiatric history" and was described as having difficulties "adjusting to motherhood". The third woman came from a family with a "history of psychiatric disorder". The authors imply a pre-existing vulnerability to the stress that precipitated postpartum panic attacks. They suggest that it was the women's predisposition to stressful events that resulted in the emergence of trauma symptoms rather than identifying that birthing events can be traumatic. In line with this argument, the authors provided little detail about the births and no detail of the birth from the women's perspective.

Moleman, Van der Hart and Van der Kolk (1992) reported three case studies in which the stress of childbirth itself was sufficiently severe to precipitate post-traumatic symptomatology. The reported cases illustrated how recurrent intrusive

recollections, numbing, dissociation, and other trauma-related symptoms occurred in response to technologically complex deliveries that from a medical perspective involved no direct medical threat to the life of the mother or child. Moleman et al. (1992, p. 271) called this response a “partus stress reaction”.

These researchers reported that all three women had feared that they would lose their babies and had become panic-stricken in anticipation of a catastrophic outcome. The panic ceased when the women dissociated from both their subjective physical experience and from contact with their surroundings. The women continued to experience intrusive recollections about some aspects of the delivery for several months. The authors proposed that the complicated obstetric histories and stress during birthing predisposed the women to extreme anxiety.

Four case study reports by Ballard, Stanley and Brockington (1995) described the clinical picture and course of stress reactions among women after childbirth. The baby of one woman suffered a cardiac arrest on delivery; another woman reported anaesthetic failure; and two women experienced poor pain control. The authors state that the women presented a symptom profile similar to that of PTSD but did not meet Criterion A. This criterion establishes that (1) the person has been exposed to a traumatic event that involved actual or threatened serious injury, or threat to the physical integrity of self or others; and (2) the person’s response involved intense fear, helplessness, or horror (APA, 1994). Trauma symptoms were apparent within 48 hours of delivery and tended to be frequent and persistent. Although the authors were unable to comment on possible causes, they noted that a “long or complicated labour with the feeling of ‘lack of control’ were important to each patient.”

In a single case study report, Fones (1996) described the chronic trauma symptoms reported by a woman following a forceps-assisted delivery. The woman experienced considerable perineal pain, became depressed and irritable, and had difficulty sleeping for a month postpartum. The woman was extremely

fearful of conceiving again and avoided sexual intimacy. Nine years later, the woman still experienced disturbing delivery-related memories and other symptoms consistent with the *DSM-IV* diagnosis of chronic PTSD. She eventually underwent a tubal ligation, after which, it is reported, her distressing symptoms abated.

While these studies serve to highlight the presence of trauma symptoms following childbirth, they are intent on describing the clinical picture, course of disorder, and symptom profile related to PTSD. Although all the studies use a case study approach, little or no attempt is made to understand the factors contributing to the women's experiences. For example, there is disagreement on whether birthing events constitute a traumatic event in accordance to DSM-IV criteria and yet women's subjective perception of the event is not sought. Implicitly, the blame is placed on the woman in terms of personality vulnerability (e.g. anxious), previous psychiatric illness (e.g. depression), high obstetric risk, or "difficult" labour. There is no discussion of the possibility, or reality of, extreme stress being perpetrated by physically invasive obstetric interventions. Only Ballard et al. (1995) describe one woman's excruciating pain during an emergency Caesarean section, however, they also state that this was an operation which took only 10 minutes. This infers that the pain should have been of very short duration, ignores the woman's subjective experience and dismisses the likelihood of extreme and understandable distress in response to unbearable pain and fear.

Only two studies have specifically investigated the incidence of PTSD with large samples of women. In a community-based study in the United Kingdom, five hundred women were surveyed about the psychological stress associated with obstetric and gynaecological procedures (Menage, 1993). Over one hundred (n = 102) respondents gave a history of an obstetric/gynaecological procedure which was "very distressing" or "terrifying" and "still affecting them now". Of these women, 6% (n = 30) satisfied the *DSM-III-R* criteria for PTSD (Menage, 1993).

Significant differences were found between these women and thirty women who rated their experiences from ‘slightly distressing’ to ‘very good’. The groups differed on history of significant reproductive event (e.g., miscarriage), feelings of powerlessness during procedures, amount of information given to the woman, the experience of physical pain, perceived unsympathetic attitude by the health professionals, and clearly understood informed consent by the woman (Menage, 1993).

In addition to rating aspects of the procedures on a seven-point scale, the women were asked to state whether the feelings still affected them. The words and phrases that the women used are reported by Menage (1993: 223) to be “explicit and reminiscent of assault”. Phrases from the women included: “degrading and distressing”, “my opinions were dismissed”, “I felt assaulted and then abandoned” and “I screamed and screamed but no notice was taken”. It would appear that it is not only the medical procedure itself but rather the way health professionals work that may produce trauma for women. The work by Menage reveals a connection between the experience of obstetric and gynaecological procedures and the development of PTSD that had not previously been described. This particular study, however, is limited in that the volunteers were self-selecting and may have recognised the presence of stress for themselves when requesting the questionnaire. The group was also limited to the readership of a particular set of publications and therefore was not a representative sample. There was also no indication of the time lapse between the distressing event and participation in the study.

The best designed study in this area to date is the work by Wijma, Soderquist and Wijma (1997) who conducted a cross-sectional study in an unselected sample of all women (n = 1640) who had given birth over a one year period in Linkoping, Sweden. The PTSD profile was assessed using DSM-IV criteria and the women’s cognitive appraisal of the childbirth was measured using the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ). In this study, 1.7% of

women (28) met the criteria for a PTSD profile. Trauma symptoms were statistically associated with previous psychiatric history, negative cognitive appraisal of the delivery, nulliparity, and rating the contact with delivery staff in negative terms.

While the study by Wijma et al (1997) was well designed, it relied on a mailed questionnaire. As a consequence, women who were particularly traumatized by the birth may not have responded. Furthermore, the time lapse between delivery and completion of the questionnaire varied considerably. The distress experienced by some women may have resolved prior to receiving the questionnaire. It is also unclear if PTSD symptoms were acute or chronic in duration and no follow-up contact was undertaken. A longitudinal design would have enabled the long-term implications of birthing trauma for women to be assessed. Finally, the study did not explore the contribution of obstetric procedures to the women's distress, nor explicate women's perceptions of their care.

Overall, a major weakness of previous studies conducted in this area is the lack of attention to other possible contributing factors to maternal distress. Such factors could include the influence of social psychological variables (such as social support) on the birth experience, interpersonal relationship with staff, the effects of obstetric intervention, the degree of physical pain, and lack of information. As such these reports add little to our understanding of women's distress following childbirth.

There are also a number of methodological weaknesses in the studies under review. All have been retrospective in design, samples have been small or unrepresentative (with one exception), and have not maintained a standard timeframe in the identification of trauma symptoms. The time lapse before the identification of trauma symptoms varied considerably in previous studies. In one study, a woman was seen two years after delivery (Metz et al., 1988). Similarly

the timeframe for assessment in the Wijma et al. (1997) study varied from one to thirteen months. No detail on timeframe between assessment and the event was cited by Menage (1993) although the reported event was to have occurred "more than one month previously". Furthermore, there is a paucity of information on how PTSD is assessed, the identification of the trauma from the woman's perspective, and the processing and/or resolution of the trauma from the women's perspective.

In the main, trauma-focussed birthing research is not woman-centred and does not seek women's views. The study by Moleman et al. (1992), for example, only observed and tested the distressed women rather than engaging with them in order to explore the nature of the birthing experience and the resolution of their trauma. Similarly, Fones (1996) reported unremitting symptoms for a woman nine years after giving birth and indicated that surgery "resolved" her distressing symptoms. It is not reported if any of these woman received any counselling or support during the postpartum period.

The narrow nature of findings in relation to birthing and trauma may be attributed to the focus of these past studies on objective complications or medical circumstances of birth rather than on women's subjective reactions to these events. This focus could be due in part to the lack of a theoretical perspective that may inform the examination of childbirth and trauma.

Emerging theoretical perspectives

In general, various theoretical paradigms have been applied to understanding posttraumatic stress reactions. They stem from such diverse frameworks as biological, psychodynamic, behavioural and information processing perspectives (Black, Newman, Harris-Hendricks, & Mezey, 1997). While some evidence is offered in support of them, none of the models adequately explain the complex nature of PTSD (Joseph et al., 1997).

A commonly cited explanation of trauma symptoms is based on the work of Horowitz (1976). Drawing on cognitive, information processing model and psychodynamic components, Horowitz (1976, 1986, 1990) proposed that individuals have cognitive models, or schemata, of the world and themselves that they use to interpret incoming information. Information from a traumatic event is stored in memory and repeatedly brought to the conscious mind as the individual integrates changes in their schemata in order to achieve internal emotional harmony.

Processing psychological trauma requires individuals to integrate the experiences into their perceptions of the world. According to Horowitz (1976, 1979), individuals process a traumatic event through three stages. The initial “outcry” phase may involve an inability to comprehend the trauma or being ‘swept away’ by strong emotions (Horowitz, 1986). The second stage is characterised by an oscillation between denial of the event and intrusive thoughts about it. Such repeated recollection is associated with powerful negative emotional responses. The final stage is working through the trauma and attempting to find meaning in the event.

For persons processing trauma, the most prominent stages are avoidance and intrusive thoughts. Horowitz (1986) suggests that the avoidant symptom cluster of PTSD includes denial of the event, numbness and efforts to avoid any thing or person connected with the event. Horowitz and Wilner (1980) propose that avoidance is a normal way of coping with the threat of overwhelming emotion. By avoiding reminders of the birth, women will only process the amount of information that they are psychologically able to. Similarly, the emotional numbing seen in trauma sufferers is accounted for as a defense against the breakthrough of these intrusive images into conscious awareness.

At other times, the intrusion symptoms are dominant over the avoidance state. Intrusiveness is manifested through re-enactments of the event such as in flashbacks or intrusive thoughts. Other symptoms include hypervigilance, sleep

disturbances, preoccupation with the baby, and poor decision-making. Women in the intrusive thought phase may experience an increase in the intensity of symptoms when they are exposed to stimuli related to the event, including the hospital, their doctor or other reminders.

In summary, Horowitz (1976, 1979) proposes that intrusive cognitions are a predictable initial response to a sudden traumatic event. The painful nature of such states of mind causes these cognitions to be warded off by avoidant manoeuvers. As the person processes the trauma, the magnitude of the oscillation between intrusive and avoidant states decreases and the implications of the event are worked through.

Horowitz's information-processing approach (1976, 1979) suggests that the mind tends to repeat its representations of the traumatic event causing emotional distress. For example, while some women may be preoccupied with their birth experiences (intrusion), others may avoid reminders of their experience. Although Horowitz's model remains the single most influential perspective in understanding posttraumatic stress reactions, there is an important criticism. Little attention is given to the process of appraisal and how the individual's interpretations may mediate between the traumatic event and adjustment (Folkman & Lazarus, 1988; Joseph et al., 1997). Not surprisingly, there has been very little research into the symptomatology and reactions to trauma of those who do not develop PTSD. There may be aspects of the childbirth experience that may impinge on, or enhance, women's information processing of childbirth as described by Horowitz. It is therefore important to consider women's perceptions of their birthing experiences, the broader context of birthing events (e.g. the interpersonal relationship between care providers and women), and the presence of trauma responses *per se* and not PTSD only.

Kendall-Tackett and Kaufman-Kanter (1993) attempt to describe negative birth experiences in terms of traumatic stress that represents an expansion of the

basic model of PTSD. They developed a conceptual framework that is an adaptation of the *traumagenics model* developed by Finkelhor & Browne (1985). This model was originally developed to describe and understand reactions to child sexual abuse. To adapt the model to birth experiences, Kendall-Tackett and Kaufman-Kanter (1993) reviewed the literature on reactions to birth. The model identifies what Kendall-Tackett and Kaufman-Kanter (1993) see as four main dynamics of birth trauma: physical damage, stigmatization, betrayal, and powerlessness. Each of these is described below.

During labour and delivery, physical damage may be incurred from a variety of sources. For some women, surgical incisions or other types of complications such as haemorrhage, fractures (e.g., coccyx), or infections can cause psychological trauma (Enkin, Keirse, Renfrew & Neilson, 1995). This physical damage in itself may not be traumatising, but the woman's interpretation of the injuries may be the important factor in the subsequent development of trauma symptoms. For example, some women have felt "mutilated" following their Caesarean sections (Goer, 1991).

The scarring and pain associated with surgery during childbirth can also be distressing for some women. In a survey of 228 women who delivered via Caesarean section for the first time, over 25% expressed concern about their scars (Erb, Hill & Houston, 1983). Similarly, women with postpartum infections had more negative perceptions of their birth experiences than did women without infections (Tilden & Lipson, 1981). Damage to the perineum can also be troubling. Oakley (1983) reported that between 15 – 37% of women surveyed who had an episiotomy complained of a "painful" or "very painful" perineum at the end of the first postpartum week.

A sense of physical invasion may also be a component of trauma. Obstetric interventions can involve physical intrusions during examinations and monitoring and result in the experience of having one's body space repeatedly invaded, possibly against one's wishes. The woman may feel unable to protect herself or

stop the procedure thus producing fear, anxiety, and loss of control. In interviews with 39 women who were survivors of childhood sexual abuse, J. Kitzinger (1992) found that over half of the women were reminded of sexual assaults by internal examinations. The experience of childbirth was particularly significant for these women and in some ways reminiscent of previous abuse.

According to Kendall-Tackett and Kaufman-Kanter (1993), stigmatization occurs when a woman feels different from others because of some aspect of her birth experience or embarrassment by events that occurred during labour and delivery. Mothers may feel shame or embarrassment if they are seen naked, swore, or were incontinent (Wertz & Wertz, 1989). These elements may in themselves be distressing or may add to other distressing elements of the experience. As Goffman (1968) indicated, stigma is strongly associated with perceptions of a "spoiled identity" and peer group comparisons. If women feel that they did not meet their own birthing expectations, or the expectations of "others", they are less likely to feel positive about the birth.

Another source of stigmatization is when others discount or minimise the women's negative birth experiences. She may be told to "stop complaining" because she has a healthy baby, or be seen as "ungrateful". Still others may tell her that the pain was "worth it" (Kendall-Tackett & Kaufman-Kanter, 1993). Such comments invalidate a woman's experience and make her feel as if something is wrong with her.

The sense of betrayal can be acute for women who made careful decisions about their deliveries (Kendall-Tackett & Kaufman-Kanter, 1993). Women who expected to have a natural delivery but were monitored and received instrument-assisted and operative deliveries feel particularly betrayed (S. Kitzinger, 1987; Ogier, 1982). Betrayal can also occur when the persons whom a woman relied on to provide her care, in fact, harmed her. Women in labour expect staff to provide support and expert care but are sometimes treated rudely, with insensitivity, or even harshly. These experiences may shatter existing assumptions held by the woman,

assumptions such as “I am safe”. According to Janoff-Bulman (1985) the shattering of assumptions about self, the world, or others can be marked by intense stress and anxiety and thus contribute to negative perceptions of the event.

A woman can also feel betrayed by her own body, especially if she had a Caesarean section because of “failure to progress” during labour (Tilden & Lipson, 1981). Even in cases with serious complications of labour, women may feel inadequate or that their bodies let them down.

Betrayal can also take place when a woman turns to others for comfort following a traumatic experience and is treated indifferently. Following a traumatic birth experience, a woman might turn to her partner, friends or staff for support only to be told to “pull yourself together” (Kendall-Tackett & Kaufman-Kanter, 1993). The negative reactions of trusted individuals can cause as much trauma as the birth experience itself (Chalmers & Chalmers, 1986). According to Finkelhor (1987), the sense of betrayal by a trusted figure may result in depression following a traumatic event.

Powerlessness and the lack of control over labour and delivery are key dynamics in birth-related trauma (Kendall-Tackett & Kaufman-Kanter, 1993). There are two main components to the dynamic of powerlessness: (1) the person’s will, wishes, and sense of efficacy are repeatedly over-ruled (e.g., the invasive nature of repeated internal examinations) and (2) the person experiences the threat of injury or annihilation (Finkelhor, 1987). Many aspects of labour and delivery can contribute to powerlessness. The subsequent fear and anxiety reflect the experience of having been unable to influence or control the event. Medical sociologists (Cartwright, 1967; Roberts, 1985, 1992) suggest that a narrow medical care approach can “depersonalise” and “infantilise” patients who are treated like “objects” while painful and intrusive things are done to their bodies.

Negative birth experiences are consistently associated with lack of control (Green, Copeland & Kitzinger, 1988; Tilden & Lipson, 1981; Trowell, 1982). In a study of women's reactions to Caesarean sections, Marut and Mercer (1979) found women's feelings of control were highly correlated to confidence during labour and delivery, ability to relax, and satisfaction. Lack of control can also diminish a woman's capacity to come to terms with problematic aspects of her birth experience (Affonso & Stichler, 1978).

Hospital routines, by their very nature, socialize women into powerlessness (S. Kitzinger, 1987; Oakley, 1980). Women are stripped of their clothing and other people control their most basic functions, including when and where they eat and drink, and whether they receive pain relief. They are likely to be subjected to a series of internal examinations. Decisions about obstetric interventions are often made unilaterally and women are not encouraged make decisions about their own care. Furthermore, one study demonstrated that women who questioned the decisions of doctors were met with hostility (Graham & Oakley, 1981).

In summary, Kendall-Tackett and Kaufman-Kanter (1993) provide a framework of negative birth experiences that may create traumatic reactions. Although the experiences of birthing women vary widely, the dynamics of physical damage, stigma, betrayal and powerlessness are seen as central in women's perception of trauma. While the Kendall-Tackett and Kaufman-Kanter model is not a substitute for diagnostic criteria, it provides an interpretative lens through which an understanding of women's birth experiences can be gained. Such a perspective has been neglected in the literature to date.

Conclusion

There is a dearth of available literature on the emergence of trauma symptoms following childbirth. Research in relation to birthing and trauma has been based on scant empirical evidence and lacks a theoretical base. In the empirical

literature, PTSD is mostly a syndrome defined by a group of symptoms, rather than an explanation of aspects of birth that result in traumatic reactions. While PTSD provides a clear label and description of a phenomenon that some birthing women may suffer, it does not provide a way of understanding the factors that contribute to women's adverse experiences.

One of the most widely cited and influential theoretical approaches in the trauma literature is the information-processing paradigm. Horowitz (1979) proposed that the experience of a traumatic event leads to sensory overload that must be processed (through avoidance and intrusion mechanisms) and integrated into the psyche. While it is important to understand how people process psychological trauma, there may be characteristics of the birth experience that impinge on the information processing suggested by Horowitz. There is only one theoretical perspective of note that specifically addresses childbirth and trauma. Kendall-Tackett and Kaufman-Kanter (1993) identified the centrality of the mother's perception of her experience as well as the physical and interpersonal aspects of childbirth in the development of trauma symptoms. Women's experience of physical damage, stigma, betrayal and powerlessness during childbirth may adversely influence the perception of trauma and prolong her recovery.

Little is known about the factors that may contribute to birthing women's experience of trauma. The medical focus of the reviewed empirical literature prompts the need for further research to address some of the gaps in our understanding of birthing and trauma and to ground this knowledge in the experiences of birthing women. Against this background, the nature of women's birthing experiences was investigated in a pilot study with a small community sample.

CHAPTER 2

Pilot study

The previous chapter outlined several studies that identified trauma symptoms following childbirth. Researchers with an interest in trauma following childbirth have, in the main, turned to PTSD as a well-established definition of trauma. However, little is known about the factors that determine women's subjective experience of childbirth. There may be more issues involved in maternal distress following childbirth than those covered by the diagnostic criteria associated with PTSD. Drawing on the conceptual framework developed by Kendall-Tackett and Kaufman-Kanter (1993), this chapter outlines the results of the first study of the thesis. The pilot study consisted of retrospective, exploratory interviews with seven multiparous women from a convenience community sample. Each woman described stress-provoking events even though this was not the focus of the interview. The extent to which birthing was perceived as traumatic by some women was surprising. Issues centred on the women's (1) experiences during labour and delivery in terms of medical interventions (such as episiotomy and forceps delivery), (2) psychological responses to stressful birthing experiences, (3) negative interactions with staff, and (4) integration of the experience.

Method

A convenience group of women was sought from a local church organisation in 1994. Through this network women who had recently delivered babies were contacted. Five women were willing to be interviewed. A colleague of the researcher referred another two women to the study. All of the women were multiparous and had uncomplicated obstetric histories.

Each interview commenced with the broad statement: “I would like you to discuss any aspects of your birthing experiences that are important to you.” Through the use of in-depth interviewing skills the researcher attempted to encourage a free range of thoughts and insights. Any questions usually probed for clarification of ideas rather than directing the woman to talk about researcher-generated issues. The interviews were then transcribed verbatim and themes extracted. Themes consisted of recurrent topics spontaneously discussed by the majority of women. A typed transcript of the recorded interview was returned to each woman and validation reached on the emerging themes. After a few weeks women were contacted again to verify the content of the text, asked for further detail where required, and provided opportunities for any questions to be asked. Pseudonyms are used to protect the identity of participants.

Results

The identified themes are discussed in relation to the effects of medical interventions during childbirth, responses to stressful birthing events, negative interactions with staff and the psychological integration of these experiences.

Medical interventions, pain and powerlessness

The women in this study described a number of incidents whereby the use of medical interventions created unanticipated stress. As a consequence of these interventions, women experienced physical trauma, pain, and a sense of powerlessness. Although all the women felt well prepared for labour and delivery, the use of medical intervention was commonly perceived to be sudden or unexpected. The nature of these events disrupted the women’s sense of control and evoked fear and anxiety. According to Kendall-Tackett and Kaufman-Kantor (1993) if a woman feels wounded or damaged by her experience, then these symptoms may be trauma-producing. The experience of physical damage may evoke an immediate psychological response. In circumstances of acute stress, the woman may respond with alarm, fear, an inability to comprehend the trauma,

or panic (Horowitz, 1986). The following section highlights adverse responses to a number of medical interventions.

Electronic fetal monitoring

Commonly the physical state of the mother and fetus is monitored on a regular basis during labour. Monitoring heart rate and blood pressure provides ongoing information on the progress of labour, and level of physiological stress. The information provided by monitoring can allay anxiety, but some of the women in this study expressed fear of medical technology. One woman described a situation where:

> *I was hooked up to all the monitors, there was the drip and I had an internal fetal heart monitor. I've never forgotten the intensity of the pain [of labour] and how difficult it was to handle it especially being in that situation of being tied onto the bed like that (Jenny).*

In this incident the mother was physically restrained, stressed, and unable to move to a position of comfort because of the monitoring equipment. The experience of being tied down enforced Jenny's helplessness and intensified the pain of labour.

Amniotomy

Amniotomy, intentionally breaking the fetal membranes in an effort to start or accelerate labour, seems to be a simple and benign procedure, and is routinely used in Western countries (Wagner, 1994a). Many health professionals believe that, since the bag of waters ruptures spontaneously during labour, an artificial rupture is not much of an intervention. All of the women in this study however, described negative consequences when the birth attendant artificially ruptured the membranes. One woman said,

> *I had painless contractions up until this stage and when they broke my waters everything went 'boom' and I got this pain and I just freaked out (Annette).*

The negative effect of the intervention was immediate. Not only did the level of pain increase, but the woman went from “coping” to “not coping” (that is, ‘freaking out’) and became alarmed as a result of the intervention.

Induction

The labours of two women in the study were induced through the use of intravenous syntocinon (a synthetic form of oxytocin). For one woman, staff assumed control of the labour and the woman had no choice but to proceed.

> *After they put the drip in everyone came in and there were about 10 people in the room, just so many... I didn’t interfere, I just let them do what they wanted to do, let them take control which was really sad... all that I had read and what my mother had told me went out the window. I just couldn’t go up against them (Lea).*

This situation highlights the sense of powerlessness experienced by the woman in the face of increasing staff numbers. The control exerted by staff over the woman in this circumstance, resulted in her responding in a passive way. Hospital procedures are unfamiliar to most people and serve to enhance professional control (Wertz & Wertz, 1989). Despite feeling prepared and informed about childbirth, Lea felt that she had no alternative but to succumb to medical control.

Analgesic drugs

There are a number of drugs that are purported to reduce the pain of labour. Nitrous oxide gas and intramuscular injections such as pethidine are commonly administered. Both drugs result in drowsiness, and pethidine is reported to adversely affect the fetus (Hale, 1998; Howell, 1995). Epidural anaesthesia usually immobilises the woman and is associated with increased length of the first and second stages of labour and instrument deliveries (Howell, 1995). Furthermore, studies of pain in labour suggest that women still have painful labours, even when using the most effective methods of pharmacological pain relief (Howell, 1995).

Carol described a situation where the drugs only served to increase her anxiety, impair her level of consciousness and ability to cope with labour.

> *I used gas and so I was pretty well out of it in some ways. Out of it, but I tried to battle against it and tried to keep in control. It was horrible (Carol).*

Episiotomy

For a number of women, delivery represented a culmination of multiple obstetric interventions. These may have included the use of drugs to induce the labour, narcotic medication administered via an epidural block for pain relief, and an episiotomy prior to delivery. One woman described her pain after delivery and how staff responded to her distress. Lea stated,

> *...they stitched me up, I had an episiotomy because they pulled them [twin boys] out with forceps. That was the most horrific part because the epidural was wearing off and I said to her [the obstetrician] this is really painful and she kept saying 'it's all over now, stop carrying on like this'. It was really demoralising.*

Although Lea had planned and worked towards a spontaneous vaginal delivery, this did not eventuate. She expressed disappointment about the type of delivery, and felt "demoralised" by the harsh treatment she received from the obstetrician. Not only did the obstetrician inflict pain by suturing without adequate anaesthesia, the obstetrician dismissed and belittled Lea when she complained of pain. Kendall-Tackett and Kaufman-Kantor (1993) suggest that a sense of betrayal may arise if women perceive their bodies to have "let them down" or when they turn to others for comfort and are treated with indifference. Both dynamics were evident in the circumstances described by Lea and occurred at a time when she was in pain and vulnerable.

Another woman, Jenny, described an incident whereby,

> *They gave me an episiotomy and I felt it! I think I jumped 6 feet into the air. I can still hear the cut of the scissors.*

Jenny was clearly shocked by the pain of the episiotomy. The intrusive nature of the memory was also vividly described. Brewin, Dalgeish and Joseph (1996)

suggest that the sensory (i.e. auditory) aspects of traumatic experiences are often recreated and re-experienced as it occurred during the original stressful event. The acuity of women's recollections of childbirth are further supported by Simkin (1991, 1992) who found that even with the passage of some twenty years women accurately recall detailed aspects of their labours and deliveries.

Forceps delivery

In this study, two women experienced a forceps delivery when the fetus became distressed. Although women may have some knowledge of such procedures, these two participants reported that they did not recall being given a full explanation of the necessity of the intervention.

When giving birth, Carol described a sequence of events that culminated in distress. Initially, Carol had not anticipated the level of pain associated with labour. She was offered nitrous oxide gas that produced a feeling of heaviness and contributed to her sense of not being in control. At one point, she recalls being told that the baby was in distress and needed to be delivered, although she does not recall the reason for this. Carol was placed in a dorsal position and her legs parted and strapped into stirrups. There was additional pain as the forceps were inserted into her vagina. An episiotomy was performed and the genital area was severely bruised. Carol said,

> *It was absolute agony, nothing at all like I expected, I felt like it wasn't really happening.*

The pain of the forceps was perceived to be sudden and unexpected. This perception of suddenness disrupted her sense of control and beliefs about what would happen during birth. The intense psychological distress challenged her normal ability to cope and resulted in a sense of the birth as "unreal" or "not happening".

The use of medical interventions during labour and delivery contributes to the experience of pain and powerlessness for some women. The emotional consequences of routine procedures such as amniotomy or episiotomy cannot be underestimated. The experience of intervention during childbirth resulted in some women feeling that they "failed" during labour, or that the birth was not as they expected. Furthermore, the experience of interventions during stressful events (e.g. emergency Caesarean or forceps deliveries) resulted in physical and emotional trauma. Women's bodies were invaded, cut, and bruised at a time when they were fearful for their own safety and the lives of their babies.

Responses to trauma

As women process their traumatic experiences, the most prominent stages are avoidance (denial) and intrusive thoughts (Horowitz, 1986). Some characteristics of the denial phase include avoidance of anything connected with the event, numbness, and reduced emotional response (Horowitz & Kaltreider, 1979). Denial might also explain why women who may have been traumatised by birth appear to be asymptomatic in the immediate postpartum period, but distressed weeks or months later (Kitzinger, 1987; Marut & Mercer, 1979). The women in the present study described a number of trauma responses. Avoidance symptoms included numbing, detachment, and dissociation. Intrusive thoughts about the delivery and expressed distress were also evident. These responses will be discussed in the following sections.

Numbing

The stressful events of labor and delivery may be so demanding that a woman feels overwhelmed. In order to cope with perceived demands, a woman may become emotionally 'numb' to reduce the sensory overload being experienced. Numbness is a blunting of emotions associated with a narrowing of focus and diminished awareness of bodily sensations (Horowitz, 1986). In this way, the perceptual field is dramatically reduced and only limited information registers

(Horowitz, 1986). Four women in this study expressed feelings of numbness during labour particularly when a medical emergency arose. One woman described this feeling as,

> *I got to the point of being fully dilated, ready to go, and the baby had a bit of distress... The doctor said he needed to use forceps. It was like 'here are the forceps, lets get on with it'. I really felt nothing at the time, looking back afterwards I thought why didn't I feel anything. I felt like I cut myself off emotionally. (Beth)*

Detachment

One woman, Peta, had endured a long and painful labour for over 24 hours. Continuous electronic fetal monitoring identified fetal distress, and as Peta was not fully dilated an emergency Caesarean was ordered. On the way to theatre, Peta stated she was in "extreme" pain and had a strong urge to push. Staff told her "not to push". It was her husband who pointed out to staff that the baby's head had emerged and Peta delivered on the trolley. Peta described her immediate response as,

> *I was overwhelmed, I felt it was too quick... She didn't feel like she was my baby when they gave her to me… I was like a zombie. My husband took photos the next day and I still looked like a zombie. (Peta).*

Some women expressed surprise at their feelings of detachment from their babies and from their own bodies. In coping with the stressful event, there was a sense of the birth as 'unreal'. The experience of detachment represents a form of denial and allows the woman time to come to terms with the overwhelming nature of the event.

Dissociation

During a traumatic event, a high level of anxiety may trigger dissociation in some individuals. Moleman et al. (1992) reported on the general relationship between high arousal and dissociation during childbirth when women were fearful of a catastrophic outcome. Dissociative reactions are therefore more likely to occur when the woman experiences high subjective levels of perceived threat during the labour and delivery.

Four women in the pilot study described dissociative responses during anxiety provoking events. In coping with labour pain, one woman said,

> *They were talking around me, it was like they were right at the end of a tunnel... I couldn't answer them because they wouldn't hear me anyway (Lea).*

Another woman commented,

> *I switched off ... I remember being out of my body, I used to go out...(pause) watch the labour and then go back in between contractions (Annette).*

The dissociative reaction appeared to be a response to extreme duress. Lea felt powerless as staff took control of her labour and her pain was intense. Similarly, Annette recalls an 'out of body' experience in response to pain. Under circumstances of perceived threat, the dissociative response assisted short-term survival on a physical, mental, and emotional level particularly where the woman perceived herself to be powerless.

Intrusion

Intrusiveness is manifested through re-enactments of the event and is usually cognitive in nature (intrusive thoughts). Intrusiveness is also characterised by several classic symptoms including hypervigilance, inability to concentrate on other topics, preoccupation with the baby or birth experience, and disorganisation (Horowitz, 1976). One woman found herself asking the same questions over and over, and being preoccupied with the birth. Beth said,

> *I needed to talk about the birth. I talked to my husband a lot, I needed to know what happened, and what happened after that. I had to go through that process quite a few times. Even up to months later I was still needing to talk about it, but it got to the point where he didn't want to do it anymore, 'just put it to rest' he said. (Beth)*

Horowitz (1976) suggests that the memories of the event remain active and have a tendency to interrupt other functioning. Other studies with trauma victims have suggested that intrusive phenomena may be a marker for distress after exposure to

a traumatic event (Creamer, Burgess & Pattison, 1990; McFarlane, 1992). Similarly, Affonso and Arizmendi (1986) described how women who have frequent and recurrent thoughts about childbirth are less likely to make a successful postpartum adjustment.

Expressed distress

All the women expressed some anxiety during labour but when given the opportunity to identify and work through these issues, effective coping behaviours were employed. This process was best achieved by providing adequate and timely information. Unfortunately, some women were not offered the opportunity to express their fears nor receive information to allay their anxiety. According to Figley (1986) events are troubling to the extent that they are sudden and overwhelming. Many procedures during labour occur in sudden succession and a woman can feel uninformed and powerless to influence the events. One woman said,

> *...because they told me she [baby] was in stress I just panicked. Mike and I were in tears, not hysterical but I just couldn't control myself anymore. It scared me (Peta).*

In the period immediately after the event a person may experience and express ideas and emotions in response to the stressful event. This outcry phase may involve an inability to comprehend the trauma or being swept away by strong emotions (Horowitz, 1986). One woman said,

> *Everyone said how lucky I was to have a short labour, but it was actually more intense and more painful than a longer labour. I didn't have my body and my mind worked up to it. After the delivery, I cried every day for a week. I was feeling really sore and I just couldn't believe that this had all happened to me. (Carol).*

After delivery another woman said,

> *I was 'choofed' back to my room and basically, the place shut down and I cried all night. I felt like I had had this really traumatic experience happen to me but it wasn't real. I'm fairly stable, but I honestly don't know if I could ever do that again, it was too much. (Beth).*

The denial of any opportunity to talk about her experiences contributed to Beth's post-delivery distress. Both Beth and Carol were left wondering if something was "wrong" with them for feeling overwhelmed.

Negative interpersonal interactions

All of the women discussed the important role played by staff during the birth. Although some participants described birthing incidents that had a positive mediating effect during stressful events, sometimes the women's distress was related to perceptions of staff as uncaring. Such experiences adversely affected the women's sense of safety and self-confidence. Incidents that exacerbated stress responses are outlined below and resulted in the women feeling discounted, stigmatized, and betrayed.

The women in this study described negative aspects of care that occurred when they felt discounted by staff. Beth said,

> *I said to the doctor who was stitching me up, how many stitches? And he said 'I've counted 300, don't worry about it'. I had a lot of bruising, every nurse who came in said 'Wow, look at that!' and I said that's bruising... it was a very traumatic first birth.*

Beth had relied upon staff to provide her care, but had been harmed in the process. In response to her request for information, the doctor discounted the extent of damage and the midwives could not contain their horror. Beth was afforded little comfort, the extent of her physical damage was trivialised by the doctor and she felt stigmatised by the reactions of staff to her physical injuries. Chalmers and Chalmers (1986) have suggested that negative reactions from trusted individuals can cause as much trauma as the actual negative experience itself. For Beth, the lack of support from staff exacerbated the negative impact of the experience.

At times women were excluded from the decision-making process. In so doing, staff failed to acknowledge and support the women's need for information,

particularly at crucial times of high anxiety and fear. Beth described the following incident when she said,

> *I was in the delivery room and the baby was taken away. I knew where he was being taken to but I felt quite alienated. My husband didn't say anything. I think we were pretty shocked*

Beth's sense of alienation reflects the lack of connectedness between herself, her baby and the staff. Even though information was provided about the baby's whereabouts, staff demonstrated little understanding of the associated stress and worry about the baby's life for the mother.

In another interaction with staff, Helen described a sense of betrayal by staff during her delivery. Helen described birth events over which she had very little control when she said,

> *I remember uncomfortable feelings, irritation and that it was quite a violent situation. I was so keen and positive that at the time I tended to ignore all the negative things like the shaving, the enema and being trolleyed out to the labour ward. They gave me drugs without even asking me, they absolutely did not ask... I had an episiotomy and when the doctor was sewing me up he was rude and said 'I have to make you pretty for your husband.'*

Helen felt that her wishes in relation to the delivery were discounted. Her experiences reflect unilateral decision-making and the routine execution of obstetric interventions without due consideration for her needs and wishes.

Psychological integration

One phase of working through trauma is characterised by progress on thinking and feeling, communicating and relating to others about the distress (Horowitz, 1993). The work of integrating the experience includes revising or forming new schemas to accommodate the understanding of the event and its sequelae. Horowitz (1993) suggests that there is a gradual restoration of equilibrium and movement into a phase of acceptance and understanding.

During the postpartum period, the woman needs to undertake important psychological work in order to re-establish her assumptions about self, and her view of the world as predictable and safe. This requires attempting to gain some understanding of the events in a meaningful way and developing a sense of resolution.

Anger

In some cases it was years before the women in this study were able to come to terms with the strong emotions associated with birthing incidents. Acknowledging feelings such as anger and resentment, and working through birthing events required time, thought, communication, and support of others.

> *It took me a long time to process this experience, it was well after the birth of my second child that I got in touch with a lot of the anger that I had felt about the [first] birth. (Beth)*
>
> *I've only felt a lot of anguish about this recently. I felt really cheated. I was like this spectacle up in stirrups being stitched, I had both shifts there coming in and they were talking about their Friday night out, they were so impersonal. (Jenny)*
>
> *After my last birth I had to go through all this anger - why did that happen, why didn't I do this, why didn't I know this? (Lea)*

Each woman approached the task of integration from a different perspective. While Beth reflected on the inherent emotions of the event over time, Jenny expressed anger and indignation at the poor care provided. Lea on the other hand, appeared to blame herself for not knowing or acting differently during labour and delivery. Her expressed anger motivated her to be well informed and investigate alternative approaches to childbirth for a subsequent pregnancy. Despite the different approaches, the tasks of psychological integration promoted the gradual restoration of equilibrium for the women. This process was marked by movement into a relative completion of processing the meaning of the event to the self.

Despair

Two women identified feeling long-term despair in the postpartum period. In one case, a woman was diagnosed with "depression" by her general practitioner, but another woman attempted to work through these feelings alone. Without adequate support, however, the distress was debilitating and long lasting.

> *I became very depressed afterwards, I never had it diagnosed because you can look at these things yourself... I did get some Serapax which is for anxiety... I just isolated myself more and more and I didn't dare talk about it to anyone... (Helen)*

Clearly each woman feels unique stresses and conflicts during labour and delivery and feelings of self-doubt and guilt were described by some women. According to Finklehor (1987), the depression that follows a traumatic event could be a result of betrayal and victimisation. Accounts from victims often stress the degree to which they blame themselves for having been unable to control the event. As victims, they have a low sense of efficacy that translates into generalised despair. These feelings however, reflect progress in coming to terms with a serious acute traumatic experience rather than a pathological reaction.

Conclusion

This pilot study with a small community sample of women highlighted the emergence of trauma symptoms during and following childbirth. In particular, women described feeling 'overwhelmed' by their experiences and symptoms of numbness, detachment, dissociation and intrusion were present. Trauma was associated with (1) medical intervention, (2) pain, and (3) interpersonal disrespect.

Oakley (1980) argues that the medicalisation of childbirth is stressful for mothers, associated with feelings of low control, and more likely to be followed by postnatal distress. The women in this study did not initially question the necessity of the procedures or the level of informed consent, but it was clear that the use of medical interventions was distressing. Although Green et al. (1988) indicate that wellbeing may not be related to the number or types of intervention but to the woman's

perception of the event, some women in this study reported trauma reactions as a direct result of obstetric intervention during childbirth. J. Kitzinger (1992) and Menage (1993) have reported that women sometimes feel violated by obstetric procedures. The findings of the present study confirm this view. Women described situations where they were treated like “objects” while painful things were done to their bodies.

The experience of pain as distressing was twofold. Firstly, some women found the pain of labour to be overwhelming and resulted in dissociative responses. While factors such as level of preparation, emotional and personality factors, cultural and situational factors and modification of pain-related thoughts and cognitions can affect the amount of pain experienced (Sherr, 1995), these were not specifically discussed in this study but may warrant further investigation. Secondly, some women described the experience of intense pain as a result of medical intervention. The pain associated with the use of medical intervention was described as unanticipated and perceived as intense and painful. This was especially true in relation to forceps and episiotomy. The perception of pain during a forceps delivery could also be exacerbated by fear and anguish about the life of the baby.

The physical harm inflicted by staff was at times compounded by insensitive care. On occasion, staff did very little to help women maintain a sense of control, remain relaxed and be able to cope with the pain of labour and/or the pain of intervention. The women further described their exclusion from the decision-making process and being denied a voice during childbirth. Negative emotional reactions by women after childbirth are related to situations where the woman lacked control and felt uninformed. This finding confirms the outcomes of previous studies by Green et al. (1990) and Thune-Larson and Moller-Pedersen (1988) who conclude that information and feeling in control were consistently associated with positive psychological outcomes. Similarly, disregard of women’s psychosocial needs (e.g., trust, safety, respect) during childbirth have resulted in women feeling powerless (Loos & Julius, 1989).

At times, women were fearful for the baby's life. The experience of an instrument-assisted delivery during an emergency situation resulted in both physical and psychological trauma. For example, one woman reported emotional numbing and detachment reactions during delivery and the immediate postpartum period when she thought the baby was going to die. Her distress was not recognised by staff. Indeed, her interactions with staff exacerbated her sense of trauma.

This study also highlighted the need for women to integrate the childbirth event into their lives. In processing the birth experience, the women focused on their beliefs and expectations about themselves and others. Issues in relation to safety, trust, and power needed to be explored. To process or work through traumatic birth experiences, the women needed to acknowledge their trauma, express intense emotions (e.g., anger), and gain an understanding or make sense of the events in order to move forward. As the women reported, this was a long process. Trying to "just forget it" was not an effective strategy. Trauma that is not acknowledged and dealt with will manifest itself in a variety of destructive and negative behaviours. Women who have not processed the trauma associated with childbirth may experience depression, helplessness, self-destructive behaviours, marital difficulties, anger and hostility (Kendall-Tackett & Kaufman-Kanter, 1993).

There are inherent limitations with a small descriptive study. The findings are also called into question due to the unrepresentative nature of the sample and the retrospective nature of the women's experiences. It is also possible that some women were attracted to the study because of their unresolved distress. Despite these limitations, the findings appear to be consistent with the emerging literature in the area.

There are a number of implications of this study for further research. Firstly, this study highlights the stress experienced by women during labour and delivery and the development of trauma symptoms. Only one study to date (Wijma et al., 1997)

has aimed to identify the incidence of PTSD in a sample of birthing women. In order to determine the incidence of birthing trauma, research is required with a large representative sample of women. Secondly, although participants in the pilot study were well informed about birthing, had low obstetric risk and eagerly anticipated the event, each described at least one aspect of the birth that was distressing. A prospective design would determine the antecedents of trauma symptoms from childbirth, including the antenatal factors. Thirdly, the identification of trauma responses in relation to the pain of obstetric interventions and the stress in anticipation of a catastrophic outcome requires further examination. No study has explicitly investigated the relationship between obstetric intervention and trauma symptoms. Finally, the women in the pilot study described the stress engendered by inadequate care. The importance of the interpersonal relationship between birthing women and staff in mitigating negative birthing events can not be underestimated. Further research is therefore required to assess women's perceptions of their care received during labour and delivery and the association to the development of trauma symptoms.

CHAPTER 3

Contributing factors to birth trauma

The literature reviewed in Chapter 1 and the findings of the pilot study suggest that certain factors may contribute to a woman's experience of trauma at or around the time of delivery. Firstly, existing studies have indicated that predisposing factors may increase a woman's vulnerability to trauma. These include previous psychiatric history, anxiety about childbirth, and a history of significant reproductive events (e.g., miscarriage). Secondly, there is a link between specific obstetric interventions and the development of trauma symptoms. Thirdly, the relationship between health care providers and women can also engender trauma. Women's dissatisfaction with care was related to a lack of involvement in decisions, paucity of information, and perceived unsympathetic attitude of staff. These three issues will be explored in the following sections and will lead to the rationale, purposes and hypotheses of the main study.

Vulnerability and the experience of trauma

The work by Ballard et al. (1995), Moleman et al. (1992) and Wijma et al. (1997) implied that women who experienced a stressful childbirth may be more vulnerable to the experience of trauma because of a pre-existing mental illness or anxious personality traits. These studies however, were retrospective in design and there are no existing studies in the area of birthing and trauma that may confirm or refute the argument of prior vulnerability. Different conclusions may be drawn by future prospective studies that may examine the contribution of pre-existing vulnerability to the experience of trauma.

The limitations of retrospective studies also applies in the broader trauma literature where it is not possible to screen for pre-existing psychiatric illness prior to a traumatic experience and researchers must rely on personal accounts. This

difficulty may contribute to the conflicting findings in this area. For example, some studies have suggested that traumatised individuals with a past history of emotional problems are more vulnerable to long term adjustment difficulties (McFarlane, 1988; Atkenson, Calhoun, Resick, & Ellis, 1982). While other studies (e.g. Kilpatrick, Veronen, & Best, 1985) have not found past psychiatric history to be associated with the development of PTSD or other adjustment problems following a trauma.

Conflicting results have also been reported by prospective studies in the related area of postpartum depression. Some researchers have reported that both psychiatric history of the woman and her family, were significantly related to the development of postpartum illness (O'Hara, 1986; Watson, Elliot, Rugg & Brough, 1984;). In contrast, the study by Kumar and Robson (1984) did not find a consistent relationship between psychiatric history and postpartum illness. They found that only four of their 22 'prepartum depressive subjects' were depressed postpartum.

Despite inconclusive findings there is a continued belief in the contribution of emotional factors to obstetric problems and stressful deliveries. Sameroff (1972) suggests that it is not psychiatric illness per se that is the critical factor in determining obstetrical complications, but rather the associated anxiety and emotional upset are the major contributors. The notions of low self esteem, low self-efficacy, and unrealistic expectations have been reported to interact and result in anxiety, obstetric difficulties and a woman's sense of failure (e.g., Affonso & Arizmendi, 1986; Campbell et al., 1992; Cutrona & Troutman, 1986).

Anxiety during pregnancy and childbirth is the most commonly examined emotion (Lobel, 1994). The following section will review the role of anxiety in relation to (1) anticipation of childbirth, (2) labour and delivery, and (3) birth outcomes. Anxiety first emerges in response to the physiological symptoms of early pregnancy and commonly involves concerns about whether the pregnancy and the baby are viable and about the capacity to respond to the reality of parenthood

(Glover, 1997; Sherr, 1995). Janis (1958) believed that 'worrying' in pregnancy was helpful in reducing the harmful impact of traumatic events. Doering et al. (1980) found that women who had worried about childbirth during pregnancy had a more positive birth experience. Such studies refer to normal levels of anxiety as a desirable state. Excessive anxiety, however, is likely to reflect high levels of maternal distress and has been associated with adverse psychological outcomes. Some studies have reported consistent associations between antenatal anxiety and the development of depression (Watson et al., 1984), panic states (Metz et al. 1988; Northcott & Stein, 1994) and obsessive-complusive disorder (Buttolph & Holland, 1990; Sichel et al., 1993) in the postnatal period.

Very few studies have asked women why they may be feeling anxious about childbirth. An exception is the study by Sjogren (1997) who interviewed 100 women to identify their conscious reasons for anxiety about childbirth. The women had been referred from antenatal clinics to a counselling service because of their fear of childbirth. The reasons most commonly cited were related to lack of trust in the obstetrical staff (73%), fear of own incompetence to give birth (65%), fear of a catastrophic outcome (usually death of self and/or the baby) (55%), intolerable pain (44%), or loss of control (43%). The authors conclude that while anxiety about pain was important it was not predominant. Rather, anxiety about childbirth was related to fundamental human feelings of trust and fear of a catastrophic outcome.

The fear of labour and delivery by pregnant women may be related to their experience of previous adverse obstetric/gynaecological events (Littlewood & McHugh, 1997; Shear & Mammen, 1995). A number of researchers (e.g., Beil, 1992; Lee & Slade, 1996; Statham & Green, 1994) have identified that pregnant women who had experienced a previous unsuccessful pregnancy were more anxious, both generally and specifically, about the possibility of something being wrong with the baby or the possibility of another miscarriage.

Events such as miscarriage, and stressful internal examinations have also been associated with the development of trauma symptoms. Menage (1993) found that women with PTSD symptoms had significantly more adverse pregnancy outcomes (miscarriage, termination and still birth) compared to the non-trauma group. Furthermore, women in the PTSD group had experienced a larger number of invasive gynecological procedures than the other women. Menage (1993) suggests that both these factors may be important in the causation of PTSD.

The trauma associated with the process of miscarriage has often been a neglected aspect of research (Lee & Slade, 1996). During a miscarriage, women have often undergone considerable pain, loss of blood and been admitted to hospital. Lee & Slade (1996) found that one week after miscarriage some women were experiencing intrusive experiences related to the process of the miscarriage and not primarily the loss of the baby. For women who have experienced miscarriage, the events during childbirth may in some ways replicate the earlier trauma of pregnancy loss and contribute to the development of postpartum distress.

Effects of anxiety during labour and delivery

Anxiety is also believed to adversely influence a woman's experience of labour and delivery. There is continuing belief that high levels of anxiety increase the experience of pain and likelihood of complications during childbirth (Slade et al., 1993). In a study of anxiety and pain thresholds during labour, Zichella et al. (1977) administered the State Trait Anxiety Inventory (State scale) (Spielberger, 1983) to a sample of 77 women who were in their first or second pregnancies. The scale was given every 60 minutes while the women were in labour. Pain thresholds were also determined during labour using electrical, thermal and pressure measures. Women in their first pregnancy showed higher levels of anxiety than did women in their second or later pregnancy. State anxiety increased in a linear fashion during labour and returned to normal levels after labour. As state anxiety increased the threshold for pain decreased. The authors concluded that the level of anxiety increased the experience of pain during labour and delivery. The methods used in

determining the level of anxiety in this study are open to question. For example, it is possible that the technology associated with measuring pain actually increased the women's anxiety, or the knowledge gained from the constant measurement of pain increased anxiety. It is also possible that the researchers' attributes and behaviours interfered with the women's wellbeing and labour and contributed to their anxiety.

In a prospective study with 61 women, Burstein, Kinch and Stern (1974) found that anxiety did not influence the length of labour or complications for the mother or the neonate. The authors concluded that there was no support for the contention that those mothers who had a complicated labour had been more anxious during pregnancy. In contrast to this earlier work, Ryding, Wijma, Wijma & Rydhstrom (1998) examined the fear of childbirth, general anxiety, and stress coping during the third trimester of pregnancy, and a subsequent delivery by emergency Caesarean section. In their prospective study, the anxiety features of the 97 women who subsequently delivered by emergency Caesarean section were compared with 194 controls, matched for age and parity. The women who underwent a surgical delivery reported greater anxiety, poorer stress coping ability and greater fear of childbirth at 32 weeks gestation than women in the control group. Ryding et al. (1998) concluded that anxiety associated with fear of childbirth increased the risk of subsequent emergency Caesarean section.

Anxiety and birth outcomes

Shear and Mammen (1995) suggest that pregnant women experience a range of anxiety disorders that are often severe and debilitating, and can interfere with obstetric outcome. Excessive anxiety has been associated with a range of adverse birth outcomes including preterm delivery, low birth weight, and neonatal complications (Boyce et al., 1986; Norbeck & Tilden, 1983; Perkin et al., 1993). Virtually all studies investigating the effects of anxiety on birth outcome have used one of three types of measures to represent maternal stress: life events, state anxiety, or trait anxiety.

Life event 'counts' provide a quantitative indicator of the number of stressful events in a person's life. A possible limitation of life event 'counts' is that they do not ascertain whether events are appraised by women as stressful (Lobel, 1994). Some women who report only a few life events may be experiencing a high degree of stress due to chronic life circumstances, or events occurring in the lives of family or friends (Cohen, Karmarck & Mermelstein, 1983). Trait anxiety identifies the extent to which a person is most likely to respond to difficult circumstances by experiencing anxiety (Spielberger, 1983). According to Lobel (1994), trait anxiety is one of the poorest operational definitions of prenatal stress and a very weak predictor of adverse birth outcomes. Knowing that a woman is trait anxious does not indicate whether her current circumstances are appraised as stressful or if she is currently feeling anxious about pregnancy and childbirth. In contrast, state anxiety refers to the anxiety response to a particular environment or set of conditions (Spielberger, 1983). It enables the researcher to determine the extent to which current circumstances are appraised as stressful or if the woman is currently feeling anxious. However, a woman who reports low state anxiety may in fact be experiencing stressful events but is not made anxious by them. State anxiety therefore has a specific research focus and simply implies that the woman is coping and does not feel overtly anxious at present.

There are three well-designed studies of maternal anxiety and birth outcomes that utilise state anxiety measures (Brooke et al., 1989; Norbeck & Anderson, 1989; Pagel et al., 1990). The details of these studies are outlined in Table 3.1.

Table 3:1: Investigation of state anxiety and birth outcome.

Study	Measure	Timing	Birth outcome(s)	Obstetric risk	Parity	(n)
Brooke et al. (1989)	GHQ	17, 28 and 36 weeks	Birth weight	Not reported	Mixed	1513
Norbeck & Anderson (1989)	STAI	2nd trimester	Labour, delivery, infant complications Gestational age Birth weight	Low	Mixed	208
Pagel et al. (1990)	STAI	3rd trimester	Gestational age Birth weight 1 & 5 min Apgar	Mixed	Mixed	100

Of these, two administered the state form of Spielberger's State-Trait Anxiety Inventory (STAI; Spielberger, 1983) once in the second or third trimester. The psychometric quality of the STAI is well established (Spielberger, Gorsuch & Lushene, 1983). The third study by Brooke et al. (1989) employed the General Health Questionnaire (GHQ, Goldberg & Hillier, 1979). A particular strength of these studies is that they consider the contribution of other important predictors of birth outcome. In particular, medical risk and parity are two of the most important biomedical predictors of birth outcome (Cramer, 1987; Lobel, 1994). Initially, Pagel et al. (1990) found significant correlations of state anxiety with gestational age, 1-minute and 5-minute Apgar scores, but not birth weight. After controlling for the effects of demographic and medical risk variables on these birth outcomes, only the effect of anxiety on 5-minute Apgar remained significant. Similarly, Brooke et al.(1989) and Norbeck and Anderson (1989) reported few effects of anxiety after controlling for medical and demographic variables. Perkin et al. (1993) conclude the evidence for effects of maternal anxiety on obstetric outcome is relatively weak.

Childbirth preparation as a mediator of anxiety

While recognising the contribution of anxiety to a woman's birth experience it is also necessary to consider factors that may mediate adverse effects. It has long been suggested that if women perceive themselves to be well prepared for childbirth, they report less anxiety, have more favourable birth experiences, and have less postpartum emotional distress (Crowe & von Baeyer, 1989; Doering and Entwisle, 1975; Hobfoll, 1986; Springer, 1996). Women who participated in the pilot study had perceived themselves to be well prepared for labour and delivery. All had attended antenatal classes, had read widely, and had talked about childbirth to friends and family and yet some aspects of labour and delivery were perceived as unexpected and stressful.

A predominant approach to birthing preparation is through the use of antenatal classes. Some authors however, have questioned the benefits of classes on women's abilities to cope effectively during labour. For example, Slade et al. (1993) suggest that antenatal classes de-emphasise the experience of pain during labour and have minimal impact on women's experiences during childbirth. Similarly, an Australian study of 790 women who did or did not attend childbirth preparation classes found no differences with respect to measures of pain, the use of procedures, interventions and pain relief during childbirth (Lumley & Brown, 1993). There were also no differences found between the groups in their satisfaction with the provision of information through pregnancy, birth and the postnatal period. Lumley and Brown (1993) concluded that attendance at childbirth preparation classes was not associated with differences in birth events, satisfaction with care, or emotional wellbeing among women having their first baby.

Psychological models of preparation for stressful events have emphasised the importance of information, predictability and control (O'Brien, 1998). Given the inconclusive findings as to the benefits of childbirth education classes on reducing anxiety and enhancing women's birth experiences, it is important to consider the breadth of preparation undertaken by pregnant women and their views on how well prepared they perceive themselves to be for labour and delivery.

In summary, there is no clear relationship to suggest that some women may be more vulnerable to birthing stress due to a previous psychiatric history. There is some evidence to suggest that prenatal anxiety influences the birth experience. In particular, the experience of previous pregnancy loss or an adverse gynaecological procedure can contribute to a woman's anxiety about her pending confinement. Conversely, level of preparation may mediate birth anxiety. The methodological difficulties in this area of research, however, may explain the inconclusive nature of the findings to date.

Obstetric intervention and trauma

Several of the women interviewed in the pilot study described trauma symptoms in response to the experience of particular obstetric interventions. This finding is in contrast to the conclusions drawn by Gitlin and Pasnau (1989) in their review of psychiatric syndromes linked to reproductive function in women. They noted that obstetrical difficulties are probably irrelevant in the development of postpartum distress. The acute stress of caring for an infant by a woman who may often feel alone and unsupported was viewed as the precursor of depression. While it is important to acknowledge the significance of factors that are gender-specific and influence women's emotional well-being, the present study aims to specifically investigate the contribution of obstetric interventions to women's distress.

The use of obstetric procedures has risen steadily in western countries over the past three decades (Notzon, Placek & Taffel, 1987). In Australia, rates of continuous electronic fetal monitoring, forewater amniotomy and oxytocin induction of labour continue to be high by Western standards (Wagner, 1994b). Obstetric interventions evolved in response to particular clinical needs, but routine use has tended to develop without adequate scientific evidence.

Doctors, using available birth technologies, increasingly control the actual process and the pace of labour. Indeed, as many authors (e.g. Fisher, 1994; Wagner, 1994a; Inch, 1982) have pointed out, undertaking one intervention tends to be associated with an increased risk of precipitating another intervention, that is, a "cascade of intervention". Figure 1 illustrates this process and is adapted from Inch's (1982) consideration of the cascade of interventions that may follow the induction of labour.

The extent to which the use of invasive and pre-emptive obstetric interventions may be injurious to the mental, as well as physical, health of women is unclear. The following section critiques the use of obstetric interventions during the

commencement and progress of labour, mode of delivery, and events associated with delivery.

Figure 1: Cascade of intervention: an induction (Inch, 1982)

Prevalence of induction is associated with an increased risk of prematurity.
↓
The presence of a drip and fetal monitoring necessarily confines the woman to bed and may increase maternal distress.
↓
A cascade of intervention. An induction may lead to fetal distress and fetal distress may lead to a Caesarean section being performed.
↓
More analgesia may be required to control pain associated with induced labour.
↓
An epidural may be administered to control the pain.
↓
Higher risk of forceps delivery is associated with the use of epidural analgesia.
↓
An episiotomy will then be required.
↓
The baby may need to be removed to a neonatal unit.
↓
The relationship between mother and baby may be affected.

Commencement and progress of labour

Induction

In the late 1960's the induction of labour by intravenous oxytocin was limited to a few conditions such as prolonged pregnancy of 44 weeks gestation (Wagner, 1994a). It soon became apparent that a convenient time for the commencement of labour could be 'chosen', but usually by the obstetrician rather than the child-bearing woman. While the World Health Organisation (WHO) (1996) continues to suggest that the induction of labour should be reserved for specific medical indications, rates remain high. The current rate of induction in Queensland hospitals is 21.6% (Queensland Perinatal Statistics, 1996). Induction procedures in Australia continue at twice the WHO recommended rate and are more related to convenience factors rather than medical factors (Wagner, 1994b).

Following the work of Inch (1982), Wagner (1994a, p.7) concluded that induction was one of the most important interventions in “creating subsequent cascades of interventions”. In support of this contention, Crowley (1989) reported a positive association between oxytocin use and instrument-assisted delivery. Furthermore, oxytocin use has associated risks. The drug can cause uterine hyperstimulation and inadequate placental blood supply which increase the likelihood of neonatal complications (Keirse, 1989). Although rare, uterine rupture has also been associated with the use of oxytocin (Keirse & Chalmers, 1989).

Descriptive studies have suggested that induced labour may be more unpleasant, and may decrease women’s perceptions of control during childbirth (Cartwright, 1979; Vierhout, Out and Wallenberg, 1986). Women who have experienced induction are likely to state a preference for spontaneous labour for future births (Cartwright, 1979). Hodnett et al. (1997) in a randomised controlled study found that women favoured induction of labour. However, women recruited into this study had already experienced spontaneous forewater rupture of membranes without the onset of labour. They were then allocated into an ‘induction group’ or a ‘watchful’ management group. As part of the consent process, participants were informed of the risks associated with delayed commencement of labour in the development of neonatal and maternal infection. The women in the expectant management group had reasonable grounds to worry and may have perceived induction as preferable to a ‘wait and see’ approach.

Hodnett et al. (1997) concluded that it is in fact safe for select women to not be induced immediately following the spontaneous forewater rupture of membranes. The information derived from the Hodnett et al. (1997) study was not available to women in the ‘wait and see’ group. As a result, these women were given information that unduly emphasised the risks of prolonged prelabour rupture of membranes. Therefore, the results of this study may reflect the quality and type

of information provided to the women about waiting rather than a preference for induction per se.

If induction is to occur then vaginal prostaglandin preparations are viewed more favourably by women than intravenous oxytocin according to two small clinical trials (Lyndrup, Legarth, & Dahl, 1990; Kennedy, Stewart & Barlow, 1982). Traditional, non-invasive techniques such as walking around (Read, Miller & Paul, 1981) and nipple stimulation (Salmon et al., 1986) have been found to effectively assist the progress of labour and cause fewer medical complications but seem to be rarely encouraged in practice.

Electronic fetal monitoring

Electronic fetal monitoring (EFM) is valuable for specific complications during high risk labours, and yet it is being used routinely in many western countries and often for extended periods of time during labour (Society of Obstetricians and Gynaecologists of Canada, 1995; WHO, 1996). Significantly, randomised controlled trials have consistently found no improvement in the health of the mother or the baby from routine use of EFM, and there is no scientific evidence that fewer babies die if EFM is used on all women during labour (e.g., Grant, 1989; Ruzek, 1990). Clearly, the hoped for benefits of intrapartum EFM has not been realised.

The use of continuous EFM increases the likelihood of instrument-assisted and operative delivery (Wagner, 1994a). It has been suggested that the fetal monitor cannot always distinguish between fetal stress and distress. Haverkamp (1985) believes that there is a tendency to overcall fetal distress based on fetal heart rate pattern that is not ominous. Even in circumstances of worrying heart rate patterns, infants are actually acidotic (i.e. truly distressed) in only 30 – 40% of cases.

Hathaway (1996) suggests that EFM is “controversial and at best is a harmful, discredited, expensive mistake”. Yet, EFM continues to be used in preference to less invasive and restrictive forms of monitoring (WHO, 1996). The use of continuous EFM severely restricts maternal movement during labour. (Wagner, 1994a). The restrictions and associated stress of EFM were also confirmed in the earlier pilot study where one woman reported being “tied to the bed” and experiencing increased pain and anxiety.

Pain and pain relief during childbirth

Labour and delivery is a physically painful experience for almost all women. A study by Niven and Gijsbers (1984) used the McGill Pain Questionnaire (MPQ) (Melzack, 1975) to assess the intensity and quality of labour pain. Results not only found that levels of labour pain were amongst the most intense ever measured on the MPQ but also showed substantial agreement on pain quality. Labour pain was described as ‘stabbing’, ‘exhausting’ and ‘penetrating’ by more than 50% of women. Descriptors of labour pain do not typically have a high affective component and presumably reflects the positive meaning of labour pain for most women (Niven & Gijsbers, 1996). It is noted however, that some women describe labour pain in strongly negative terms such as ‘frightening’. Some authors suggest that it may be more important to ameliorate these negative affective aspects of labour pain than to reduce the intensity of labour pain overall (Dick-Read, 1933; Harrison, 1991; Niven, 1986). Despite this view a great deal of emphasis is placed on the reduction of pain during labour.

Analgesics have commonly been given to enhance the woman’s efforts to cope with pain. A survey of Victorian women in 1988 reported that 71% received some form of pain relief (Lumley, 1988). Pain relief during labour is often a narcotic given by intramuscular injection at standardised doses and intervals. Pain relief may therefore be inadequate because little allowance is made for patient variability, sensitivity to narcotics, and pain thresholds (Skibsted & Lange, 1992). Reports of narcotic medications causing dizziness, dysphoria, and drowsiness

are common (Hale, 1998; Green et al., 1989). Kitzinger (1987) further observed that analgesia can cause confusion and make a woman feel unable to actively cope with labour.

WHO (1996) report that epidural analgesia is frequently used inappropriately with adverse consequences. For example, the routine administration of analgesic or anaesthetic drugs has been found to influence the type of delivery. Perinatal data from NSW in 1992 indicated that while women without epidural anaesthesia have a 6.8% chance of an instrument-assisted vaginal birth (forceps or vacuum), women with epidural anaesthesia have a 30.4% chance of an instrument-assisted vaginal birth (Wagner, 1994b). It is also well known that epidural analgesia increases the length of labour, length of hospital stay, admission of infants to intensive care nurseries and health care costs (Young, 1997).

The number of undesirable side effects associated with medication to reduce pain during childbirth prompts the need for alternatives. It has been demonstrated that pain can be reduced through close personal support throughout the labour (Keirse et al., 1989). Pain can also be alleviated through a range of methods including massage, the application of heat and cold, reflexology, transcutaneous electrical nerve stimulation, acupuncture and immersion in warm water (Simkin, 1991) but such methods are not routinely encouraged in hospital settings.

Many factors may modify women's experience of pain during delivery and birth. Age, educational level, antenatal preparation, previous experiences of birth and support during labour and delivery by family and staff can modify the experience of pain (Yerby, 1996). Socio-cultural expectations of labour and birth may also influence a woman's wish for a natural birth without pain relief or instrumentation, or her desire for a "painless" birth under epidural analgesia or a Caesarean section.

It is not surprising therefore that researchers have found that expectations of labour pain are highly correlated with the reported experience of pain. Similarly, the expectation of needing pain medication is also highly correlated with its use (Green, 1993). The majority of women have already formed views on pain relief before labour has commenced. It is likely that information provided during antenatal classes may influence women's views on drug taking during labour and delivery. Hathaway (1996) contends that many antenatal educators convey the belief that drugs are "necessary and desirable, unavoidable and safe" and in so doing actively promote the expectation that chemical analgesia is essential.

The use of analgesia / anaesthesia has been shown to be influenced by factors other than individual need. Skibsted and Lange (1992) undertook a comparative study of 125 women who delivered in a birthing centre and 170 women who gave birth in an obstetric ward. They found that pethidine use was four times more frequent among women giving birth in the obstetric ward (18%) than at the birth centre (4.8%). Not only is the level of drug use influenced by the place of delivery, but it is also influenced by whether a woman was receiving public or private obstetric care. King and Flenady (1995) reported a difference between the use of epidural anaesthesia for labour between public and private women as being statistically ($p < .001$) as well as clinically significant. That is, privately insured women were more likely to receive epidural anaesthesia than public patients.

There are numerous documented psychological advantages of an unmedicated birth. Women who have unmedicated births consistently rate their birth experiences as more satisfactory than women who have epidural anaesthesia (Humenick, 1995). It is interesting to note that Morgan et al. (1982) found that women are not necessarily better satisfied by a birth that is pain free. This work calls into question the medical priority attached to the effectiveness of the analgesia with little regard for the potential for harm to the mother and baby. The beneficial effects of perceived, if not actual, self-control over pain are well

recognised in studies that explore women's responses to childbirth (Mander, 1992; Green et al., 1989; Kitzinger, 1987; Wells, 1984).

Mode of Delivery

Some critics have suggested that many routine delivery procedures are unnecessary, or of questionable use (Wagner, 1994a; Chalmers, Enkin & Keirse, 1989). On occasion, a full assessment of needs is overlooked and a procedure is carried out for medical reasons but in such a way as to minimise a woman's understanding, adjustment, and satisfaction with childbirth (Sherr, 1995). The following section therefore explores the use and consequences of Caesarean, instrument-assisted and spontaneous delivery for birthing women.

Caesarean section

Despite the fact that most births are spontaneous vaginal deliveries, there is a small percentage of women who develop complications and may need a Caesarean section. The use of the procedure for conditions such as premature separation of the placenta, eclampsia, placenta praevia has saved the lives of many women and babies. Wagner (1994a) argues however, that obstetricians undertake the decision to operate too quickly. Furthermore, in cases of breech presentation and previous Caesarean section, the use of the procedure has become almost routine despite strong contrary evidence (e.g., American College of Obstetrics and Gynecology, 1989; Stephenson, 1992).

There are associated risks with an operative delivery. Maternal mortality is two to four times higher, and physical damage is both more prevalent and severe following Caesarean delivery than vaginal birth (Enkin, et al., 1995; Marieskind, 1989). Yet despite these statistics, Caesarean delivery rates have risen from approximately 3% of all deliveries in the Western world in the 1960s to between 15% and 20% of deliveries in the 1980s (Notzen, Placek & Taffel, 1987). The overall rate of Caesarean section in Queensland is now 21.1% (Queensland

Perinatal Statistics Data, 1996). In the United States nearly one in four births is by Caesarean section and it is the most common major surgery performed (DiMatteo et al., 1996). The proliferation of Caesarean deliveries over the past 20 years has been attributed to the introduction of electronic fetal monitoring, physicians' preferences, practice patterns, fears of malpractice litigation, financial incentives for obstetricians and hospitals and the personal preference of some women (DiMatteo et al., 1996; Mutryn, 1993).

The single most powerful factor in the increase of unnecessary Caesarean section in Australia is the obstetric practice to deliver women, who have already had a Caesarean section, by this mode again. This factor accounted for 40% of all Caesarean section deliveries at a large hospital in the A.C.T. (Wagner, 1994b) and 31.6 % of all cases in Queensland (Queensland Perinatal Statistics, 1996). Large multi-centre studies have demonstrated clearly that vaginal birth after Caesarean is a safe option (Flamm et al., 1990; Phelan, Clark, Diaz & Paul, 1987; Stephenson, 1992), and yet in practice, a trial of labour is not always encouraged (Flamm, 1997; Stafford, 1991).

There is very little research on the emotional consequences of emergency Caesarean deliveries. These women simultaneously experience all the similar effects of major abdominal surgery and those of any mother recently delivered of a newborn baby. Only recently has there been an awareness that surgical intervention in childbirth is a psychologically traumatic experience for many women, but much of the reported literature is methodologically flawed in that the studies were retrospective and used small sample sizes (Fisher, Stanley & Barrows, 1992).

A well-designed prospective study of 270 nulliparous women found that many first time mothers, who delivered via Caesarean section, experienced adverse emotional consequences (Fisher, 1994). Women who experienced relatively straightforward vaginal deliveries were more likely to experience a heightened

sense of wellbeing, lower feelings of anxiety, depression, tiredness and irritability in the early postpartum period. In contrast, Caesarean-delivered women were significantly more likely to feel worse about themselves after delivery. These women were more likely to recall their experiences as “unexpected and disappointing” (Fisher, 1994, p. 67). Significantly more women who delivered by Caesarean section reported symptoms of anxiety and depression in the postpartum period. In another Australian study, Boyce and Todd (1992) found that women who delivered by emergency Caesarean section had more than six times the risk of developing postnatal depression three months postpartum when compared with women having spontaneous vaginal deliveries.

For over a decade the WHO (1985) has recommended Caesarean rates to be no more than 10 - 15% and yet the incidence of Caesarean section in this study and throughout Australia continues to be around 22%. It is not known the extent to which such procedures are essential in safeguarding the well being of the mother and baby and their continued high rate of use raises questions about the employment of such procedures for unsubstantiated reasons to the detriment of birthing women.

Instrument-assisted delivery

Forceps and vacuum (or ventouse) deliveries are used in instances of fetal distress in the second stage of labour, for maternal ‘exhaustion’ or where prolonged pushing is contraindicated (Enkin et al., 1995). They are also employed for slow progress in the second stage of labour and to rotate the fetal head if the position is not favourable. Queensland Perinatal Statistics Data (1996) reveal that the current incidence of instrument delivery is 5.7% for forceps and 4% for vacuum extraction. The average rates of instrument assistance in vaginal delivery (12%) in Australia is among the highest in the world (Chalmers, 1992).

Forceps and vacuum deliveries carry serious medical risks to both woman and baby. Forceps and vacuum extraction are associated with pelvic injury and greater use of anaesthesia and analgesia for the mother, and lowered Apgar scores, fetal scalp injuries, and intracranial injuries for the baby, (Vacca & Keirse, 1989). Until recently, it was believed that the risks and benefits of the two methods were similar. A review of the scientific work comparing the two, however, concluded that forceps carry significantly higher risk for pain, both during delivery and in the postpartum period. A forceps delivery results in more trauma to the woman's vagina and perineum, and creates greater need for pudendal blocks and other forms of regional anaesthesia for birth (Chalmers & Chalmers, 1989).

Ennis & Vincent (1990) provided a comprehensive overview of the type and nature of obstetric accidents, which may have far reaching implications. A common occurrence was mismanagement of forceps, which can result in neonatal death or brain damage. Furthermore, the use of forceps may affect the appearance of the baby and cause severe bruising. The appearance of physical damage to the baby may repulse some women or contribute to a sense of guilt and failure.

Although many studies have attempted to compare the psychological effects of vaginal and Caesarean deliveries, few have examined the impact of other obstetric procedures such as instrument-assisted deliveries (Mutryn, 1993). Fisher, Astbury and Smith (1997) found that significant psychological effects were associated with mode of delivery. Those women who had an unassisted vaginal delivery were more likely to experience increased self esteem and lighter mood than women who had an instrument delivery. The experience of an instrument delivery was related to lowered self-esteem and depressed mood in women four to six weeks after delivery.

Events associated with delivery and the puerperium

Episiotomy

Except for the cutting and tying of the umbilical cord, episiotomy is the most common surgical procedure in birth care. For example, episiotomy is a routine procedure done on essentially every birthing woman in every hospital in Eastern Europe (Wagner, 1994a). Although the rate of episiotomy in North America has declined from 64% in 1981 to 50.4% in 1993, the convergence of practice with evidence-based recommendations is slow. In Queensland, the use of episiotomy is much lower than North American figures with 19.6% of women receiving an episiotomy (Queensland Perinatal Statistics Unit, 1996).

Wagner (1994a) argues that commonly used obstetric interventions increase the need for episiotomy. The use of interventions such as aminiotomy and augmentation to speed the progress of labour increase the use of epidural analgesia. This in turn slows labour, and increases the likelihood of an instrument delivery and the likelihood of an episiotomy (Enkin, et al., 1995).

The debate on the management of the perineum during birth has focused on how to cut rather than whether, to cut. A well known obstetrical text, *Williams Obstetrics* (Cunningham, MacDonald & Grant, 1989) not only continues to recommend episiotomy but also dismisses the outcomes of recent trials that question the use of the procedure. Between 1984 and 1993 five randomised controlled trials compared the selective use of episiotomy with its routine or liberal use (Argentine Episiotomy Trial Collaborative Group, 1993; Harrison, Brennan & North, 1984; House, Cario & Jones, 1986; Klien et al., 1992; Sleep & Grant, 1987; Sleep, et al., 1984). In each case the trials failed to produce evidence to support the alleged prophylactic benefits of routine use of episiotomy and recommended abandoning this practice. As a result of such evidence, WHO (1996) recommends that the systematic use of episiotomy is not justified.

Some authors suggest that an emerging influence in the decline of episiotomy is the desire by women to have an active role during labour and be upright rather than horizontal for delivery (Gardosi, Hudson & Lynch, 1989; Myrfield, Brook & Creedy, 1997). A recent review of the literature reported that women found the upright position less painful during labour (Enkin, et al., 1995). Upright positions have also been found to decrease the duration of the second stage of labour, decrease abnormal fetal heart patterns and increase efficiency of a woman's expulsion of her baby (Enkin, et al., 1995; Wagner, 1994a) hence minimising the need for an episiotomy to hasten delivery.

The emotional consequences of episiotomy are often not considered by researchers, perhaps because it is perceived to be routine, yet for some of the participants in the pilot study an episiotomy was traumatic. One woman, Jenny, described the pain experienced from an episiotomy in graphic detail and continues to have intrusive thoughts about the procedure. Other women complained of extreme pain associated with inadequate anaesthesia of the perineum when the cut was made or suturing was undertaken. For some women, the episiotomy was performed at a time when they were physically exhausted and worried about the baby's life. Therefore, an episiotomy is not a benign, routine procedure, but one that can evoke a sense of physical damage and emotional anguish.

Neonatal and maternal complications

Some women in the pilot study reported intrapartum complications that prompted emergency procedures. On delivery the baby was often taken from the delivery room for assessment and care. At this time, women described their distress and concern about the baby's life. There are a range of complications associated with childbirth and the puerperium. The average rate of neonatal complications in Queensland (the State in which the study will be conducted) is 22.1% of all births (Queensland Perinatal Statistics Unit, 1996). Neonatal complications include

infection, respiratory distress, medical conditions and injury or birth trauma to the baby. In a recent study, Stuber and Houskamp (1996) examined the stress reported by parents of neonates who required advanced pediatric medical technologies. They concluded that life-threat to the neonate was a psychological source of acute stress for parents.

The most extreme complication associated with childbirth and the puerperium is neonatal death. The Queensland Perinatal Data (Queensland Perinatal Statistics Unit, 1996) reported that in 1996, 562 babies (out of 47,987) were recorded to be either stillbirths or neonatal deaths. High psychiatric morbidity in parents has been reported at the time of neonatal death or soon after (e.g. White, Reynolds, & Evans, 1983). Irrespective of infant outcome, the experience of neonatal complications is often highly stressful, and may have long-term psychological consequences for parents (Sherr, 1995).

The reported rate of maternal complications in Queensland is 6.1% (Queensland Perinatal Statistics Unit, 1996). Maternal complications include poor wound healing, infection, anaemia, postpartum haemorrhage and venous complications. The most extreme complication associated with childbirth and the puerperium is maternal death. The Queensland Perinatal Data (Queensland Perinatal Statistics Unit, 1996) reported that in 1996 three mothers (out of 47,302) died as a result of childbirth. While the incidence of maternal death is low, few studies have reported on the consequences of life threat for birthing women

The experience of life-threat to self and/or others is a traumatic dynamic present in many catastrophic events and is a key dynamic in the PTSD conceptualisation (Joseph et al., 1997). It is highly likely that a woman who unexpectedly suffers physical injury, or fears for her life during childbirth would perceive herself to have been exposed to a traumatic stress. Ballard et al. (1995) reported that two women described delivery as “torture”. In the study by Moleman et al. (1993) the

three women were fearful of a catastrophic outcome and dissociated in response to extreme anxiety.

Life-threat and physical injury have been found to be predictive of PTSD symptoms in rape victims (Epstein, Saunders & Kilpatrick, 1997), survivors of childhood sexual abuse (Finkelhor, 1987) and victims of crime (Kilpatrick et al., 1989). Furthermore, much research has accumulated showing that the extent of physical injury and the degree of life threat significantly influence the course of trauma symptomatology in terms of onset, severity and duration (Ellis, Atkenson & Calhoun, 1981; Green, Grace & Gleser, 1985; Kilpatrick et al., 1989; Resnick et al, 1992). There is a need therefore, to take into account a woman's perception of childbirth as a traumatic event or the reality of life-threat in understanding PTSD responses following childbirth.

Pain after delivery

Childbirth can involve the most intense pain a woman will experience in her lifetime. Sherr (1995) suggests there is so much focus on pain during birth that few writers examine pain after birth. In the immediate postpartum period, women may experience intense pain from a variety of sources including perineal lacerations, uterine contractions, or muscle aches (Kitzinger, 1987; Reading, 1982). Uterine cramps occur intermittently for about five days postnatally, especially for multiparous women. Fifty to seventy-five percent of women who experience cramps complain of 'severe pain' (Skovlund, Fyllingen, Landre & Nesheim, 1991).

The experience of pain may also be as a result of interventions. This can include incisions following Caesarean section, episiotomy pain, and sutures (Kitzinger, 1987; Reading, 1982). Around fifty percent of women with an intact perineum experience mild perineal pain on the first postnatal day (Larsson, Platz-Christensen, Bergman & Wallstersson, 1991). This is compared to 80% of women with a slight perineal tear who suffer mild to moderate pain, and more

than 95% of women who had an episiotomy, 30% of whom experience severe pain (Larsson et al., 1991). Reading (1982) surveyed women three months after an episiotomy, and reported that 10% of women continued to experience perineal pain.

Some women report that they are given an episiotomy without pain relief or sutured after tearing without local anaesthesia (Sherr, 1995). Women in the pilot study described similar experiences. These women also reported that staff dismissed their complaints about pain. Sherr (1995) suggests that post-operative pain following delivery is often not taken seriously by staff, despite the fact that it would be routine in other medical settings.

Even though perinatal pain can be temporary, it can be overwhelming and frightening. The level of pain may be made worse by the demands of a new infant. Furthermore, the experience of pain can lead to a sense of helplessness (Affonso & Walpole, 1979) and has been associated with the subsequent development of anxiety and depression (Snaith, 1983). This is particularly true if a woman feels uninformed about the origins of the pain, and may fear that she will “always” feel this way. Symptoms associated with pain include low energy, disturbed sleep and worry (Von Korff & Simon, 1996). These symptoms then diminish a woman’s sense of coping and mastery in the immediate postpartum period.

In conclusion, it would be unrealistic to suggest that labour is a process during which all women could do without medical help or support. However, the problem is the routine or overuse of interventionist procedures that are technically required in specific circumstances only. In such situations the medical model of childbirth may be at odds with a woman’s wishes concerning labour and delivery, and contrary to available clinical research evidence. Significant associations have been found between technological intervention in childbirth and adverse emotional consequences (Boyce & Todd, 1992; Fisher, Astbury & Smith, 1997).

Thus the indiscriminate use of medical intervention in childbirth is not necessarily in the best interests of women and their babies.

Satisfaction with care during childbirth

Women's satisfaction with the quality of the birth experience is a frequently neglected aspect of birth. The quality of a woman's childbirth experience is vital to her own wellbeing and to her future relationship with her partner and child (Doering, Entwisle & Quinlan, 1980). The women in the pilot study expressed some dissatisfaction in relation to aspects of their care. The nature of the women's negative childbirth experiences varied widely. At times, women felt that they were treated with disrespect, their views were dismissed, and staff did not acknowledge their distress. For example, both Jenny and Helen in the pilot study, described staff as "rude". Beth felt uninformed about what was happening during her forceps delivery and described interactions with staff that were stressful and had adverse emotional consequences for her. The women questioned the skill of staff in performing certain procedures (e.g., episiotomy or forceps), the inadequate provision of information, and an unwillingness to address the emotional aspects of care.

Satisfaction with childbirth is frequently discussed but poorly defined. Bramadat and Driedger (1993) explored conceptual issues involved in measuring satisfaction with childbirth. They suggest that satisfaction is not just an emotional response but an evaluation of an emotion that is determined by stepping back from the situation. Furthermore, they argue that satisfaction (a feeling) and perception (a cognition) are different. For example, a woman might perceive that midwives provided little emotional support during labour and delivery, but feel satisfied because she only expected physical care. As such, recent research has suggested that satisfaction is multidimensional and an overall measure of satisfaction may not accurately represent the woman's total response to childbirth (Bramadat & Driedger, 1993; Brown & Lumley, 1994).

A number of studies have examined overall satisfaction with obstetric care. In a large study of 1900 women one year after delivery, Sullivan and Beeman (1982) found that the majority were satisfied with their care. Even those women who described deficiencies in their care tended to express overall satisfaction. Similarly, Bennett (1985) found that more than 80% of the 398 women she surveyed from five city hospitals reported satisfaction with their obstetric care. Bennett suggested that the joy associated with the birth of a healthy baby generates a positive bias in expressed satisfaction.

These studies attest that, for many women, a single measure of overall satisfaction may be misleading. Women can be satisfied with one aspect of the experience and dissatisfied with another. Different aspects, including context, process, and outcomes, may have an important effect on women's perceptions. This is certainly the case in childbirth where women have expectations both for the outcome (a healthy baby) and for the birth process. Despite these conceptual limitations, some reasonably consistent findings have emerged from the satisfaction with obstetric care research. The following section identifies dimensions of satisfaction that have been found to contribute to women's childbirth experiences.

Dimensions of satisfaction

A number of researchers have attempted to explicate the dimensions of satisfaction with care. Drew, Salmon and Webb (1989) questioned postpartum mothers to identify important features of labour and postnatal care. Midwives and obstetricians were also asked to identify important features of labour and postnatal care and ranked items similarly to the mothers. According to Drew et al. (1989) key needs for mothers in childbirth include explanations of procedures (access to information), involvement in treatment choices, relationships to caregivers (partners and staff), and physical comfort (management of pain). A similar pattern of responses was identified in a large, prospective study by Green

et al. (1990). They found that women were more likely to be satisfied with their care if they were included in the decision-making concerning interventions, provided with strategies for coping with pain, and received emotional care by staff.

There appears to be a number of dimensions that are viewed as central to patient satisfaction. DiMatteo & DiNicola (1981) devised a scale that incorporated the following dimensions. Firstly, a technical component, comprising medical knowledge, assessment and decision-making capacities and technical skills. Secondly, a communicative dimension constituting the capacity to convey information and facilitate patient participation in decision-making. Finally, an affective interpersonal element consisting of the ability to empathise and convey personal concern and interest. DiMatteo and DiNicola (1981) report that ratings of patient satisfaction on each dimension are correlated, suggesting a halo effect whereby a practitioner's competence in one area is more likely to lead to a positive appraisal in another.

Light, Solheim and Hunter (1976) reported that nearly 90% of the women surveyed were satisfied with the technical competence of their treating doctor. Only 68% of these women however, felt that their emotional needs had been adequately understood. Similarly, Zweig, Kruse and LeFevre (1986) reported that 47% of women surveyed wanted their physicians to have listened better, spent more time with them, given more information, been more sensitive to their pain, and to have respected the uniqueness of their delivery. Clearly, the dimensions identified as providing least patient satisfaction in care are communication and empathy.

According to Brown and Lumley (1994), effective communication with women in labour involves providing opportunities to: have an active say during labour and delivery; choose among options; deciding when certain action will be taken; and being given information as to why certain decisions are being made. Brown and

Lumley (1994) found that women who had recently given birth were much more likely to be dissatisfied if they thought midwives and doctors had given insufficient information. Lack of information was associated with a fourfold to sixfold increase in dissatisfaction. Cartwright (1967) in her landmark study of women's experiences of induction suggests a number of reasons for women's dissatisfaction with the standard of communication. She concluded that doctors tend to underestimate women's need for explanations or desire for information and were inadequately trained to impart these.

Communication is adversely affected by power dynamics within the woman-doctor relationship. There is an unequal relationship between the two, in which doctors still hold the power advantage. Evidence suggests that women are often still expected to be passive in labour and may not be given sufficient information to make choices about their care (Perez, 1989). Traditionally, doctors expect patients to comply with medical procedures and treatment. A North American study demonstrated that women who questioned the decisions of doctors were treated with hostility (Graham & Oakley, 1981). This dynamic was also evident in the pilot study whereby women's requests for information were dismissed (e.g. when Beth asked how many sutures were made).

A lack of empathy by staff is the second major source of dissatisfaction for birthing women (Green et al., 1990; Sherr, 1995). From a woman's perspective, childbirth is a major life event with consequences that extend far beyond that of labour. Yet medical sociologists (Cartwright, 1967, 1979; Roberts, 1985, 1992) suggest that staff are sometimes "paternalistic" and that medical institutions "depersonalise" and "infantilise" patients. Birthing women are sometimes treated like children or objects while painful and intrusive things are done to their bodies (S. Kitzinger, 1992). Furthermore, professionals may view childbirth as a non-significant event in their busy work schedule and become insensitive to the uniqueness of the event for birthing women (Barclay, Andre & Glover, 1989).

There is some evidence to suggest that effective communication and support during childbirth increases a women's sense of self-efficacy and satisfaction (Hillan, 1992; Turnbull et al., 1996). Green et al. (1988) propose that the experience of birth-related stress may be mitigated by the provision of sensitive care and the communication of relevant information.

Support during labour and delivery

The role of birthing staff during natural childbirth has long been purported to mean not only helping the mother relax in labour, but also in providing continual emotional and physical support, and otherwise adopting a position of minimal interference (Dick-Read, 1933). Bradley, a follower of Dick-Read, continued an emphasis on creating a supportive environment so that women could make optimum progress through labour (Bradley, 1996). He emphasised the avoidance of all unnecessary intervention, including pain relief, and challenged the validity of a physician-centered birth environment.

Reducing fear and anxiety through support have direct implications on birthing outcomes (Oakley, 1985; 1989). Even when offered under widely varying circumstances by women with varying levels of training, continuous labour support results in lower rates of analgesia and anaesthesia use, shorter labours, fewer episiotomies, and healthier neonate outcomes on delivery (Hodnett, 1997). A Cochrane meta-analysis of 11 labour support trials found that support was also associated with a significant decrease in the Caesarean rate (Hodnett, 1997). Kennell et al. (1991) conducted a randomised control study on the effects of continuous emotional support during labour with 412 nulliparous women. They found that the continuous support of a birth attendant for nulliparous women resulted in an 8% epidural use and an 8% Caesarean rate, even though only 9% of this group had attended childbirth classes. By contrast, the women in the control group (who received normal maternity care) were more likely to have an epidural (55%) and a Caesarean section (18%) even though 23% had completed antenatal classes.

Support during labour and delivery offers greater intimacy, nurturance, information, and physical help (Anderson, 1996). The experience of positive support during labour and delivery has been found to enhance self-esteem, provide a sense of mastery, and reduce feelings of helplessness (Higgins, Murray & Williams, 1994). In the main, support during labour and delivery can be provided by various sources including partners, birth companions and staff. Consideration of the various sources of support during childbirth therefore needs to be given in research studies.

There is a long held assumption that the active participation of expectant fathers during labour and delivery enhances the couple's relationship, fosters maturity in their father role, and nurtures the father's relationship to the infant (Bradley, 1962; Palkovitz, 1987). Several reports have identified a positive association between mothers' psychological well being and the level of emotional support provided by their partners (Gjerdingen & Chaloner, 1994; Paykel et al., 1980). However, one study suggests that an intimate partner can be both the source and antagonist of social support (Callaghan & Morrissey, 1993). If a labouring woman's expectations of support differ from her partner's, she may perceive a lack of support (Coffman, Levitt & Brown, 1994). Not only may the birthing woman be disappointed by her partner's response during childbirth, but the partner may also struggle to define their role and cope with their own reactions to the birth experience.

Berry (1988) reported that expectant fathers viewed labour and delivery as a stressful event. The expectant fathers were concerned about their partner's wellbeing and their own abilities to coach and support during labour. Chapman (1991) suggests that some expectant fathers search for a place in labour and may adopt the role of 'coach', 'team mate' or 'witness'. Each role encompasses various degrees of physical and mental engagement that may fluctuate during the course of childbirth according to events.

During labour and delivery the expectant father may be confronted with the woman's pain and suffering, and have to cope with their own reactions in some way. Furthermore, their stress may be exacerbated in circumstances where the life of the woman and/or baby are threatened. It is likely, that expectant fathers are also affected by traumatic birth events and may be unable to provide the emotional support necessary to their partner.

Nursing and midwifery care

Although there is a strong obstetric and medical presence in hospital childbirth, most care during labour and delivery is provided by nurses or midwives. In contrast to the dominant medical model, the midwifery model of care approaches birth as a normal and healthy process in which the midwife is "with" the woman (Barton, 1994). Australian midwifery standards include statements about client/family centered nursing, beliefs about the woman's right to participate in decision-making, the importance of understanding the childbirth experience from the maternal perspective, and the role of midwife as patient advocate (Australian College of Midwives, 1998). Hence, the nurse or midwife is not only meant to provide physical assistance, but to provide support and encouragement in ways that increase the likelihood of spontaneous vaginal delivery, and conversely decrease the reliance on medical procedures and drugs. As well, there needs to be a demonstrated commitment to individual and cultural awareness, encouraging the woman's active participation, providing education and information, building confidence, reducing anxiety, and offering choices (Young, 1994).

Responsive care by midwives has been shown to enhance a women's coping efforts and positive feelings about their labour experiences (Brown & Lumley, 1994; Bryanton, Fraser-Davey & Sullivan, 1993; Page, 1993; Stamp & Crowther, 1994). Some research has focussed on identifying which midwifery characteristics are most valued by women. For example, Simkin (1991) found that key nursing

behaviours include the ability to accurately assess and meet the woman's needs, provide information, and enhance control. Midwives are required to create a balance between competent and effective clinical care, and sensitivity to the birth as a significant life event. The midwife should work within her relationship with the woman and make clinical judgements to comfort, alleviate pain and distress, to counsel, advise, teach and provide hands-on care only as required.

Despite the benefits of midwifery support, some studies have found that nurses or midwives spend only a small percentage of their time engaged in labour support (Gagnon & Waghorn, 1996; McKay & Yager-Smith, 1993; McNiven, Hodnett & O'Brien-Pallas, 1992; Morris, 1989). Hodnett (1997) suggests that technology-dominated, risk-oriented systems place many constraints on nurses as well as labouring women. In a technical environment, support, caring and "connectedness" between individuals are not emphasised.

Some studies have been critical of the poor intrapartum and postpartum care provided by midwives. Hillan (1992:267) reported that 'inadequate and under-qualified care' resulted in communication failure, conflicting advice, confusion, and lack of maternal satisfaction. Hillan (1992) considers that midwives should be available to allow the woman to discuss the events of labour and the reasons for any operative intervention: in effect a debrief after delivery (Hillan, 1992).

In a qualitative study in Britain, Hutton (1988) asked over 200 mothers about their memories of midwifery practice. While many women reported positively on the care provided by midwives, Hutton drew attention to the comments by those women who were dissatisfied with their care. She reported that many women found it difficult to believe that someone to whom they had turned for professional support and understanding had "failed" them. In trying to come to terms with negative memories, the mothers attempted to rationalise the behaviour of the midwife with such statements as "they were very busy that night" or "they were badly under staffed". The findings of researchers such as Hutton (1988), Hillan

(1992) and Hodnett (1997) identify inadequacies in the provision of care that have direct implications for birthing women. These studies also highlight the need for rigour in the evaluation of satisfaction so that a range of views about different aspects of care can emerge.

Evaluation of satisfaction

The evaluation of satisfaction with childbirth experiences and obstetric practices has been hampered by debate about relevant dimensions requiring examination and the related lack of standardised research instruments. Lumley (1985) in reviewing the issue identified five important considerations. The first consideration is where the assessment of satisfaction is conducted. Women interviewed while in hospital are more likely to be constrained in their responses. They may seek to avoid hostility from staff and comment more favourably on their treatment than those who are no longer dependent on inpatient care. The second consideration is the time interval after delivery at which the research is done. Lumley (1985) and Shearer (1983) have noted the marked mood changes associated with the early postpartum weeks significantly influence interpretation of events surrounding delivery and that quite different perceptions are reported six to twelve months later. The third consideration is who conducts the research. If research interviews are conducted by hospital staff, especially those who may have provided some of the care, rather than independent personnel, critical comment is much less likely to be elicited. The fourth consideration concerns sampling issues that can be problematic. One Australian study carefully documented recruitment losses, refusals and exclusions of a large, random sample of nulliparous women (Bennett, Hewson, Booker & Holliday, 1985). The researchers found significant differences between the research group and the original sample. Furthermore, women who experience complications in childbirth are commonly excluded from research populations (Bennett, 1985; Lind & Hoel, 1989) and so may skew results. Finally, there are differences in how the judgement of satisfaction is made. Various methods include, an absence of formal complaints, choice of care for subsequent delivery (Kirke, 1980),

responses to postal surveys (Lumley & Brown, 1994), fixed choice questionnaires (Bramadat, 1990) and semi-structured interviews (Driedger, 1991). All have been applied and led to a variety of conclusions.

A further consideration in satisfaction research is an “acquiescent response set”. Ware (1978) found that patients demonstrated a significant inclination to agree with statements on questionnaires regardless of their content. Questionnaires containing only positively worded items tend to overestimate the degree of satisfaction whereas those with mixed statements, positive and negative, were not biased by this phenomenon.

In summary, satisfaction is acknowledged to be exceedingly difficult to measure, particularly in women who have recently given birth. It is important to identify components of dissatisfaction and the relationship of the perception of care to postpartum distress. The technical competence, information-giving and caring attitudes of both doctors and midwives are important, not only to women’s experience of birth but also their subsequent emotional wellbeing.

Rationale, purposes and hypotheses for the major study

In the search for an understanding of posttraumatic stress symptoms arising from childbirth, further research is required to determine the incidence, differential severity of symptoms, and the presence of PTSD in birthing women. It is believed that no such study has been conducted in Australia to date. The literature is unclear as to the contribution of antenatal variables in the subsequent development of trauma symptoms. While there is an emerging relationship between obstetric interventions and adverse emotional consequences for women, none of the studies under review have explicitly examined the contribution of obstetric intervention to the development of trauma symptoms. Similarly, few studies have systematically examined the relationship between

women's satisfaction with care during childbirth and the development of trauma symptoms.

First purpose

The first purpose of the major study is to determine the incidence and severity of acute trauma reactions and acute PTSD symptomatology in women following childbirth. Many previous studies (e.g., Ballard et al, 1995; Fones, 1996; Moleman et al., 1992) are based on case exemplars with the exception of the community-based survey by Menage (1993) and the cross-sectional study by Wijma et al. (1997). In contrast to earlier work, the major study of this thesis will utilise a prospective design with a large, representative sample of birthing women to determine the presence of acute trauma symptoms. The study will also employ standardised measures to identify trauma symptomatology and adhere to the *DSM-IV* timeframe for assessment of acute trauma symptoms.

Second purpose

Most of the proposed theories of PTSD do not explain why some people develop PTSD and others do not. In particular, the identification of contributing factors in the development of PTSD symptoms following certain life events requires further exploration. In those studies that reported the presence of PTSD symptoms following childbirth, several factors were retrospectively identified as placing women at risk for PTSD. Briefly, these risk factors included previous obstetric difficulties and pregnancy loss resulting in increased anxiety, difficult labour usually resulting in an emergency Caesarean section, maternal and/or fetal life threat, and the perception of poor intrapartum care.

Thus, the second purpose of this study is to identify and discriminate amongst contributing factors of acute trauma symptoms. Given the psychological complexity of birth and the birth environment, the present study will limit its exploration to (1) antenatal factors, (2) obstetric intervention during labour and

delivery, and (3) perception of care, as possible contributing factors of acute trauma following childbirth.

Firstly, it is hypothesized that the emergence of acute trauma symptoms would be influenced by antenatal factors. For example, women who felt unprepared for childbirth and unsupported during pregnancy may perceive childbirth as a frightening experience and develop acute trauma reactions. Secondly, it is hypothesized that increased obstetric intervention during labour and delivery is positively related to the development of acute trauma symptoms. Thirdly, it is hypothesized that a woman's perception of the care received during labour and delivery would be negatively related to the development of acute trauma symptoms. That is, the less satisfied a woman is with her care, the more likely she is to develop acute trauma symptoms.

No reported study has specifically investigated the relationship between obstetric intervention and intrapartum care in the development of trauma symptoms. The fourth hypothesis is that the relationship between obstetric intervention and trauma will be mediated by the perceived quality of care. For example, a woman who experiences a high level of obstetric intervention but perceives that she received good care is less likely to report acute trauma symptoms.

Third purpose

On the basis of the aforementioned research on birthing trauma, no study has employed a specific timeframe in the collection of data that conforms to *DSM-IV* criteria in the identification of chronic trauma reactions (i.e., greater than three months duration). In the Wijma et al. (1997) study the time interval between delivery and completing the survey questionnaire varied from one to thirteen months. Therefore, the third purpose of this study is to determine the incidence of chronic trauma reactions and chronic PTSD for women three to four months after delivery.

Fourth purpose

The fourth purpose of this study is to identify and discriminate amongst contributing factors of chronic trauma symptoms. The present study will limit its exploration to (1) antenatal factors, (2) obstetric intervention during labour and delivery, and (3) perception of care as possible contributing factors of chronic trauma following childbirth.

Firstly, it is hypothesized that the emergence of chronic trauma symptoms is influenced by antenatal factors. Although many trauma symptoms spontaneously resolve in the first three months (Olasov-Rothbaum & Foa, 1993), it is plausible that continuing symptoms may be associated with antenatal variables (such as, anxiety or level of partner support). Secondly, it is hypothesized that increased obstetric intervention during labour and delivery is positively related to the development of chronic trauma symptoms. Thirdly, it is hypothesized that a woman's perception of the care received during labour and delivery would be negatively related to the development of chronic trauma symptoms. That is, the less satisfied a woman is with her care, the more likely she is to develop chronic trauma symptoms.

CHAPTER 4

Method

The review of the literature identified several methodological weaknesses of other studies in the area of birthing and trauma. One methodological weakness was the retrospective attribution of a psychological state to women who subsequently reported trauma symptoms. Attributions included anxiety, obsessive compulsive personality traits and a history of psychiatric illness (Ballard et al., 1995; Fones, 1996; Moleman, et al., 1992). The timing of the administration of measures has also been problematic. One such practice is to interview women immediately after delivery when up to 80% of women experience transient mood disturbance (Hopkins, Marcus & Campbell, 1984). Furthermore, non-sustainable generalisations have been made from small clinical case studies (e.g., Fones, 1996); samples were non-representative (e.g., Menage, 1993); and research instruments were not standardised (e.g., Davids & DeVault, 1962). A number of principles were therefore considered important in the design of the study to ensure enhanced methodological rigour in addressing the research questions of the study.

1. A representative sample of birthing women is required to determine the incidence of trauma reactions following childbirth.
2. The study needs to be prospective in design to counter arguments regarding pre-existing psychological and social factors impacting on birth outcomes.
3. A longitudinal design over a specified time frame will enable the incidence, severity and duration of trauma symptoms to be identified.
4. Reliable and valid tools employed in the study will be appropriate to the study population, in the identification of antenatal anxiety, perception of care and trauma symptoms.
5. Sampling procedures taken during recruitment need to ensure that the sample is not skewed. In particular, steps need to be taken to minimize the

number of women who are at high obstetric risk. The recruitment of a large sample is also required to allow adequate numbers of women who experienced various modes of delivery for comparative analysis.

Time of data collection

All data for this study were collected between November 1997 and August 1998.

Design of the study

The major study of the research employed a prospective, longitudinal design that involved the collection of both qualitative and quantitative survey data. The study consisted of three phases. Phase 1 occurred during the antenatal period. Women who were in the last trimester of their pregnancy and met the selection criteria were approached to participate in the study. Phase 2 occurred within four to six weeks of delivery to adhere to the *DSM-IV* timeframe for the identification of acute PTSD symptoms. Contact was made through telephone interviews. If women identified a stressful event during birthing and reported at least three trauma symptoms after delivery, they would be contacted again by telephone during Phase 3. The Phase 3 follow-up interview took place three to four months postpartum to accord with the *DSM-IV* timeframe for the identification of chronic PTSD symptoms.

The details of each phase will be outlined in the following sections. This will include participant details, procedures, and data collection tools and data preparation processes used in each phase.

Phase 1

Participants

Recruitment took place at four antenatal clinics in metropolitan teaching hospitals. Antenatal care is typified by a schedule of antenatal clinic visits. These

are either to a high risk clinic or to the general clinics, but increasingly antenatal care is being offered in conjunction with a general practitioner. Women using the public sector usually attend hospital clinics more frequently during the last trimester of pregnancy. Inclusion criteria required that participants could understand English, had no major prenatal complications or underlying medical problems, and were likely to deliver healthy full term infants. A total of 687 women were approached to participate in the study. Of these, 71 women refused to be involved. Twelve women commenced Phase 1 but chose not to continue in the study. Data from these women were not included in the study. The total number of women completing Phase1 was 592. The size of the sample ensured statistical power (1- β = .95 confidence range) (Cohen, 1977).

Several recruitment procedures ensured that women who may be more likely to have a distressing birthing experience did not skew the sample. Antenatal Clinic sessions dedicated to women who were identified as being of a high obstetric risk were not attended. If women in this category attended other clinic sessions, they were not approached to participate in the study. Furthermore, only a small proportion of privately insured women were approached to be in the study. Numerous studies have found that privately insured women are more likely to receive obstetric intervention during delivery and at times experience distress as a result of that intervention (e.g., Fisher, Smith & Astbury, 1995; Fisher, Astbury & Smith, 1997). Having a small number of privately insured women in this study ensured that the sample was not skewed towards women more likely to receive a high level of obstetric intervention during delivery.

Procedure

The researcher conducted the first interview at the antenatal clinic. Registered nurses in each clinic initially identified women who were in the last trimester of pregnancy, and asked if they would be interested in speaking to the researcher. The researcher then approached the woman and provided verbal and written information about the study and gained written consent. A questionnaire was

then left with the woman who completed the form while waiting for her clinic appointment. The forms took approximately 15 minutes to complete and were collected by the researcher.

Antenatal questionnaire data

In order to establish the representative nature of the sample a range of background data was obtained. Participants provided contact details and information on age, length of relationship with the partner and marital status, ethnicity, completed educational level and occupational status, due date of delivery and parity. The Phase 1 antenatal questionnaire is shown in Appendix A.

Age and length of relationship were recorded in number of completed years. Four categories of marital status: married, single, defacto, and other were used. The "single" category was used for those women who described themselves as having no continuing relationship with the father of the baby. Four categories of ethnicity were used: Caucasian/ European, Australian Aboriginal/ Torres Strait Islander, Asian, and Other.

Educational status for the participant was categorised into highest level of completed qualification: postgraduate, degree, diploma / certificate for those who had completed post-secondary education and training, and secondary for all others.

Occupational status for the woman was categorised according to the Australian Standard Classification of Occupations (ASCO) (Commonwealth Department of Employment and Industrial Relations, 1997). The nine ASCO categories were clustered into six areas for the purpose of this study: (1) management and administration, (2) professional/ associate professional, (3) trade persons, (4) clerical, sales and service (5) production and transport and (6) labourers. Also for the purposes of this study the categories of home duties, self-employed,

unemployed, and student were also included to more adequately reflect the activities of childbearing women.

On the questionnaire participants indicated the sources of antenatal information they had accessed. Respondents were also asked to identify which of these sources of information was most useful, and to provide a self-assessment of their level of preparedness for childbirth. This self-assessment was on a 5 point Likert scale that ranged from 1 ‘not at all prepared’ to 5 ‘very well prepared’.

Women were asked to identify any previous obstetric/ gynaecological problems from a checklist provided. A category of “other” was also included where women could nominate an event not included on the list. The woman’s perception of the likelihood of experiencing obstetric complications and specific anxiety about childbirth were also rated on 5 point Likert scale that ranged from 1 ‘not at all likely’ to 5 ‘very likely’.

Participants were asked to rate the perceived level of partner support during pregnancy. This item was rated on a 5 point Likert scale that ranged from 1 ‘strongly disagree’ to 5 ‘strongly agree’.

State -Trait Anxiety Inventory

Lobel (1994) identified three important methodological and design features of birth anxiety studies. Firstly, it is important to use standardised measures. Such measures offer the advantage of norms by which responses can be evaluated and meaningfully compared. Secondly, instruments need to be appropriate to the study population. Instruments are occasionally administered to ethnic, cultural, or age groups dissimilar from those in which the instruments were originally developed. This would limit the validity of the findings from such studies.

A third design consideration is the issue of when to administer the tool, in particular, whether women are queried before or after the birth (Lobel, 1994). In retrospective studies, women are interviewed several days or more into the postpartum period. This procedure poses several problems. Namely, women who have experienced a stressful birth may only recall events that they believe contributed to such an outcome, or their emotional state at the time of the assessment may be different than a woman who experienced no birth complications. Their emotional state may affect the recall and evaluation of events.

In the present prospective study, antenatal anxiety was measured by the State - Trait Anxiety Inventory (STAI) - State version (Spielberger, Gorsuch, Lushene, 1983). State anxiety refers to the anxiety response to a particular environment or set of conditions. Many studies have viewed pregnancy as a state, with attendant demands and new situations that could potentially elicit anxiety in the mother (e.g. Pagel, Smilkstein, Regen & Montano, 1990) and for this reason state anxiety was chosen as the measure in the present study. The STAI – State version (Spielberger, Gorsuch & Lushene, 1983) contains 20 items for state anxiety. While internal consistency for the inventory ranges from .83 to .92, test-retest reliability for state anxiety varies according to an individual's circumstances, and as expected, is low (.40) (Spielberger et al. 1983).

The State-Trait Anxiety Inventory - State version has been widely used in research with childbearing women (Crowe & von Bayer, 1989; Annie & Groer, 1991; Bechelmayr, 1995; Springer, 1996). Furthermore, the Inventory has also been widely used in traumatic stress research and is a well-validated measure with a range of groups (Joseph et al., 1997).

According to the scoring procedure outlined by Spielberger et al. (1983) each STAI item is given a weighted score of 1 to 4. A rating of 4 indicates the presence of a high level of anxiety for the ten state anxiety items (e.g., "I feel

frightened"). A high rating indicates the absence of anxiety for the remaining ten state anxiety items (e.g., "I feel calm"). The scoring weights for the anxiety-present items were entered unchanged. The scoring weights for the anxiety-absent items were reversed, i.e., responses marked 1, 2, 3, or 4 are scored 4, 3, 2, or 1, respectively. The responses on each of the twenty items were added by SPSS to produce a total score. Total scores for state anxiety on the Inventory can vary from a minimum of 20 to a maximum of 80. For respondents who omit one or two items, the pro-rated scale score can be obtained (Spielberger et al., 1983). If three or more items were omitted, however, these questionnaires were excluded as their validity may be questioned.

Phase 2

Participants

The total number of women completing Phase 2 was 499. There were 93 women lost to the research after Phase 1 or excluded from the study (attrition rate of 15.7%). Two women had stillbirths and four women gave birth between 32 and 34 weeks gestation. These cases were excluded from the study due to the high probability of psychiatric morbidity following such events. In most other cases, the women could not be contacted on the telephone number originally given to the researcher during Phase 1 (three women wished to discontinue, and four women did not return calls after the researcher left messages). A minimum of four telephone calls were made at different times of the day or evening as part of the contact protocol after that, the woman was deemed to be lost to follow up.

Procedure

Phase 2 contact occurred between 4 to 6 weeks post-delivery. Women were interviewed over the telephone. The duration of each interview was approximately 20 to 40 minutes depending on the level of detail provided by the woman, and her desire to discuss the birth.

The benefits of telephone interviews outweigh those of questionnaires as a data collection method especially in that the response rate and accuracy of information tends to be higher (Slutske et al., 1998; Weinhart et al., 1998). Low response rates can lead to serious biases. Telephone interviews are less prone to misinterpretation by the respondents because the interviewer is able to determine if questions have been misunderstood and provide clarification. This was particularly important in the present study, as perceptions of the birthing event and any subsequent symptomatology need to be identified. Furthermore, interviews can produce unexpected additional information as the respondent discusses issues more broadly. This kind of information may be useful when analysing responses.

The accuracy of information gathered during telephone interviews was demonstrated by Slutske et al. (1998). Telephone interviews were conducted with a subsample of 146 men on two occasions (15 months apart) to evaluate long-term alcoholism symptoms and diagnoses. Data from the interviews were then compared to patient treatment files. Slutske et al. (1998) reported a 96% agreement rate between the two sources of information and suggested that the reliability and validity of telephone interview assessments of alcoholism are as good as that of an in-person interview. Diagnostic telephone interviews of large samples have also been used to determine suicidal behaviour, depression, panic disorder, and social phobia (Statham et al., 1998). Recently Breslau et al. (1998) conducted telephone interviews with a representative sample of 2,181 persons in the Detroit area to assess the lifetime history of traumatic events and PTSD.

Assessing negative reactions after the birth of a healthy baby may be a methodologic challenge. Shearer (1990) asserts that in the early postpartum women tend to rationalise the use of obstetric procedures in their deliveries. Furthermore, some women may be unwilling to express dissatisfaction with childbirth if their baby arrived safely (Oakley, 1985; Shearer, 1987). The use of telephone interviews in the present study therefore, afforded birthing women the

opportunity to examine their experiences with the researcher who was not part of the health care system and express both their content and discontent about aspects of childbirth.

Postpartum questionnaire data

The questionnaire for Phase 2 is shown in Appendix B. The following sections outline the areas discussed during the interview. The researcher asked about predelivery procedures, onset of labour, length of labour, fetal monitoring, pain relieving drugs, support persons, mode of delivery, associated events with the delivery e.g. stitches, and time interval before holding the baby. The type and duration of post-delivery pain relief, and occurrence of perinatal or postnatal complications for mother or baby were investigated, as was length of stay. The interviewer documented each account.

Labour and delivery

Information about the onset and progress of labour was coded as 0 “not occurring” (e.g. in the case of an elective Caesarean section) or 1 “occurring”. Further questioning asked about the use of predelivery procedures such as insertion of an intravenous line, electronic fetal monitoring, and methods to induce or augment the labour. Types of labour drugs were coded (e.g. nitrous oxide gas = 1, pethidine = 2), and the length of labour was recorded in whole hours.

The mode of delivery was categorised into one of five obstetric groups (1) unassisted vaginal delivery, (2) instrument assisted vaginal delivery by forceps; (3) instrument assisted vaginal delivery by vacuum; (4) Caesarean section - elective procedure and (5) Caesarean section - emergency procedure.

Following the report about the mode of delivery, women were asked about associated events. In the case of a spontaneous vaginal delivery, or instrument

delivery, women were asked if they received an episiotomy or stitches (yes / no), if there were any difficulties in delivering the placenta, if they were prescribed any drugs (type of medication, length of time in days), or experienced any complications.

If women had a Caesarean delivery, they were asked about the reason for the operation. Responses were coded into six categories that were comparable to the *Queensland Perinatal Statistics Data*, of: failure to progress, fetal distress, fetal position (e.g., breech), maternal distress (e.g., hypertension), poor intrauterine growth, previous Caesarean section, and 'other'.

Details of recovery included the use of pain-relieving drugs and length of time before the woman was able to get up and walk. Length of stay in hospital was recorded in whole days.

Women nominated the type(s) of drug(s) received during labour and delivery. Women also reported on the drugs received during the postpartum period and the length of time such drugs were taken (recorded as whole days). Women could nominate more than one type of drug.

Participants reported on complications for themselves and/or the baby. Categories of complications for the baby included infection, respiratory distress, perinatal jaundice, medical condition (e.g., low blood sugar) and injury or birth trauma to the baby (e.g., fractured clavicle). Maternal complications were also categorised and included: infection, poor wound healing, severe pain, medical condition, medical diagnosis and physical trauma.

Obstetric impact score

Several studies have developed formulae to calculate a score to represent the level of obstetric intervention experienced during childbirth (e.g., Elliott, et al., 1984; Fisher, 1994; Oakley, 1980). As a way of example, the scoring formula

devised by Elliot et al. (1984) is summarised in Table 4.1. The overall score takes account of both the number and types of procedures occurring in each woman's labour and birth, with higher weightings assigned for more complex interventions such as epidural (score of 4) or general anaesthetic (score of 6) and Caesarean section (score of 10). A 'technology' score is obtained by adding scores for the thirteen procedures using the allocated weightings. The total score attempts to quantify the total amount of technology received and makes no reference to the reasons for intervention (e.g. life saving) (Elliott et al., 1980).

Table 4.1: Obstetric intervention scoring scheme

Obstetric procedure	Score
Urinary catheter	1
Intravenous line	2
Artificial rupture of membranes	1
Syntocinon	3
Induction of labour	6
Pethidine	1
Epidural	4
Forceps delivery	4
Continuous monitoring	4
Episiotomy	1
Manual removal of placenta	2
General anaesthetic	6
Caesarean section	10
Total	45

The primary limitation of the total score approach adopted by Elliott, et al. (1980) is that little consideration is given to women's views of the intervention. These perceptions fall outside a numerical system and may contribute to contradictory research conclusions. For example, a woman who delivers by elective Caesarean section would be allocated a high obstetric intervention score but may not be distressed by the experience. A second limitation is that scoring systems to date are non-standardised and thus produce variable results. For example, McNeil et al. (1997) applied three obstetric complication scales on the same data set and produced varied outcomes. They strongly recommended that methods for measuring obstetric events should be standardised in order to understand the

contribution of obstetric complications to the later development of psychopathology.

The aim of the present study is to identify the contribution of obstetric events to the development of trauma symptoms. Given the inconclusive nature of obstetric scales to date, all obstetric events (including procedures, analgesia, and complications) surveyed in the present study will be entered in a stepwise multiple regression with the level of posttraumatic stress as the dependent variable. The use of a regression equation in this case will provide a mathematical expression of a causal proposition emerging from the conceptual framework (Burns & Grove, 1987). That is, the regression analysis will identify which obstetric interventions are statistically associated with (or predictive of) trauma symptoms.

Perception of Care Questionnaire

The Perception of Care Questionnaire (PCQ) (Fisher, 1994) was administered during the interview. The PCQ aims to examine the birthing woman's perception of the technical, affective and communicative aspects of care provided by both medical and nursing staff and the adequacy of partner support. The PCQ follows the questionnaire by DiMatteo and Hays (1980). The questions were modified by Fisher (1994) to make it appropriate to obstetric care rather than general medical treatment. The Cronbach alpha reliability coefficient for the scale is 0.90 indicating strong internal consistency (Fisher, 1994). A quarter of the items are phrased in the negative direction and women are asked to respond to statements on a 5 point Likert scale ranging from strongly agree to strongly disagree. Items scored "5" are in the most positive category and "1" are in the most negative category. One quarter of the items are phrased in the negative direction to minimise response bias.

The questionnaire has 22 items; 12 items refer to the technical skills of the person named by the woman as the primary carer during the delivery and their

attention to the emotional aspects of care, 4 items refer specifically to the care provided by midwifery staff, 2 items to overall satisfaction, 2 items on partner or support person response to the birth and 2 items on the woman's particular need to talk about her birth experiences postpartum. In the original questionnaire, the item concerning whether the woman had any desire to discuss their delivery experiences with people other than their partner or medical staff was scored on a single yes/no dimension. In this study, this item was presented on a 5 point Likert scale ranging from 5 - "a lot of the time" to 1 - "not at all".

The questionnaire items load within four identified factors (Fisher, 1994). The first factor comprises 8 items concerning confidence in the technical skills, decision-making and courtesy of the primary care giver (midwife, or doctor/obstetrician) and overall satisfaction. A second factor (6 items) concerns the more clearly emotional aspects of the relationship. These include whether the woman felt her wishes had been acknowledged when decisions were made during labour and delivery, the language and terms used by staff, and the opportunity to ask questions and discuss the experience with staff or other people postpartum. Four items relating specifically to midwifery/ nursing care load within a third factor. The final factor comprises four items relating to partner response and support to debrief postpartum. Factor scores are derived by adding the scores for the individual items for that factor.

Stressful event

In the next section of the interview each woman was asked to nominate the most lasting memory of childbirth, or what she thought about most often. The researcher did not encourage participants to answer in any particular way and did not prompt for negative responses. If the woman asked for clarification, she was asked to describe the aspect of childbirth she thought about most often.

The range of stressful events were categorised into six areas related to, labour pain, pain of intervention (e.g. insertion of an epidural), fear for the baby's

wellbeing, fear for their own wellbeing (e.g., “I thought I was going to die”), stressful interactions with staff, and a category of “other” (e.g. feeling overwhelmed by the birth).

Impact of Events Scale

After the woman described a birth event, either positive or negative, the researcher then proceeded through items on the Impact of Events Scale (IES) (Horowitz, Wilner & Alvarez, 1979). The IES is the most frequently used self-report measure of posttraumatic symptoms (Joseph et al., 1997). The IES correlates well with other PTSD measures (Foa et al., 1993; Schelenger, et al., 1992) and has been used in studies that have investigated trauma responses to various events such as sexual abuse (Rowan, Foy, Rodriguez & Ryan, 1993) and domestic violence (Houskamp & Foy, 1991).

The IES was developed on the basis of Horowitz’s two-factor theory of trauma and can be anchored to any specific life event. The 15 items on the IES were developed from statements most frequently used to describe episodes of distress by people who had experienced recent adverse life events. As such, the IES is a recognised screening questionnaire for PTSD (Thompson, Turner, & Rosser, 1996). The IES taps: (1) intrusively experienced ideas, images, feelings and dreams, and (2) the avoidance of ideas, feelings or situations.

The frequency of each symptom is scored on a four point scale. Items on the IES were entered directly. Resulting sub-scale (intrusion and avoidance) scores and an overall score were computed for each woman. Horowitz et al. (1979) reported split half reliability for the total scale of .86. The Cronbach alpha was .78 for the intrusion scale and .80 for the avoidance scale. Test-retest reliability (1 week) was .87. Other research has largely confirmed these findings and the reliability of the separate intrusion and avoidance factors (Joseph, Yule, Williams & Hodgkinson, 1993; Zilberg, Weiss & Horowitz, 1982).

The IES is useful because it can be anchored to any life event making data comparable across studies. However, the IES pre-dates the *DSM-III* and does not incorporate hyperarousal symptoms, an important component of PTSD. As such, IES does not address all of the *DSM-IV* criteria required for a diagnosis of PTSD to be made. Therefore, the IES was used as a screening tool in this study to detect the level and severity of trauma symptoms. In order to determine the incidence of PTSD a standardised diagnostic tool, the Posttraumatic Stress Symptoms scale (Foa, Riggs, Dancu & Olasov-Rothbaum, 1993) was employed. Therefore, the procedure of the study required that if a woman nominated a stressful event and reported three or more trauma symptoms on the IES further questioning to determine the incidence of posttraumatic stress disorder was pursued.

Posttraumatic Stress Symptoms scale: Interview version

In order to determine the presence of posttraumatic stress disorder in birthing women according to *DSM-IV* criteria, the Posttraumatic Stress Symptoms scale: Interview version (PSS) (Foa et al., 1993) was administered. The interview schedule is presented in Appendix C. The items on the PSS are outlined in Table 4.2.

The interview version of PSS is a 17 item semi-structured interview that can be administered by lay interviewers who are trained to recognize the clinical picture presented by traumatized individuals. Each item corresponds to the 17 *DSM-IV* diagnostic criterion for PTSD. Parallel with the *DSM-IV*, the items on the PSS are clustered into re-experiencing (four items), avoidance (seven items), and arousal (six items) symptoms The instrument can be modified for different trauma populations (Foa et al., 1993).

Table 4.2: Items on Posttraumatic Symptoms Scale - Interview version

Re-experiencing Symptoms (need one)
Recurrent or intrusive thoughts or recollections about the birth
Recurrent bad dreams related to the birth
Experience of suddenly re-living the birth event, or feeling as if it were re-occurring
Intensely emotionally upset when reminded of the birth
Avoidance Symptoms (need three)
Persistently making efforts to avoid thoughts or feelings associated with the birth
Persistently making efforts to avoid activities, situations or places that remind
Important aspects that still cannot be remembered
Markedly lost interest in free time activities
Felt detached or cut off from those others
Ability to experience emotion is less
Future plans or hopes have changed because of the birth
Arousal Symptoms (need two)
Persistent difficulty falling or staying asleep
Continuously irritable or having outbursts of anger
Persistent difficulty concentrating
Overly alert since the birth
Jumpier, more easily startled since the birth
Intense physical reactions when reminded of the birth

For each item on the PSS the wording began: “during or immediately after the incident (inserted the described stressful event)...” and continued with a description of the relevant symptom (e.g., “… did things around you seem unreal as though you were in a dream?” or “did you feel detached from your body, as if you were watching yourself?” The severity of each trauma symptom “over the last two weeks” is also assessed. Based on the description of symptoms reported by the women, the severity of each item on the PSS is rated by the interviewer using a 4-point scale: 0 = not at all, 1 = a little bit, 2 = somewhat, and 3 = very much / almost always.

The total severity score on the PSS is calculated as the sum of the severity ratings for the 17 items. Clustered severity scores are computed as the sum of the severity ratings for the symptoms in each of the three PTSD symptom clusters. The diagnosis of acute PTSD is made when at least one re-experiencing, three avoidance, and two arousal symptoms are endorsed on the scale by individuals who report a trauma experience at least one month prior to

assessment. A symptom is scored as present if the PSS item corresponding to the symptom received a score of 1 or greater.

The concurrent validity of anxiety and PTSD measures is well established in a range of study populations. In a study conducted by Foa et al. (1993) with 118 recent rape victims, the PSS total severity score showed significant correlations with the IES intrusion measure [r (114) = .69, p < .001], IES avoidance measure [r = (114) = .56, p < .001) and STAI state measure [r (112) = .48, p < .001].

Strategies were employed to achieve an acceptable level of inter-rater reliability on the PSS. In the first instance the researcher was extensively trained in the use of the PSS by the research supervisor who has clinical expertise in trauma assessment. Secondly, it was planned to audio tape telephone interviews with participants, however the quality of the recording was poor despite using two different recording devices. Thirdly, it became clear early in the data collection that some women thought this approach (recording the telephone interview) was intrusive and detracted from their sense of anonymity. Therefore the researcher documented statements made by participants in relation to PTSD symptoms. The principal research supervisor then checked these statements and the corresponding ratings for the first five interviews. Agreement between the two raters was reached in these cases. While it is recognised that an audio tape would have facilitated a rigorous approach to inter-rater reliability, reasonable steps were taken to ensure that the researcher adhered to the protocol in the assessment and analysis of trauma symptoms.

Phase 3

Of the 499 women in Phase 2, 164 (33%) described a stressful birthing event and reported at least three trauma symptoms. These women were interviewed during Phase 3 of the study. Previous research has found a substantial reduction in posttraumatic symptomatology over the first three months. In line with *DSM-IV*

criteria for a chronic PTSD diagnosis, the follow up interview was conducted between three to four months after delivery. The total number of women completing Phase 3 was 141 out of 164 (attrition rate of 14%). This telephone interview assessed the presence of PTSD symptoms by repeating the IES and the PSS. The diagnosis of chronic PTSD is made when at least one re-experiencing, three avoidance, and two arousal symptoms are endorsed on the scale by individuals who report a trauma experience at least three month prior to assessment.

The PCQ was also repeated during Phase 3 to determine if the perception of care had altered over time. This was done to address the potential issue that the perception of care (in Phase 2) may have been influenced by the acute trauma and that when the trauma remits the perception of care alters accordingly.

In order to re-establish rapport, questions of general wellbeing were asked. The researcher then referred back to the birthing event and issues raised during the first telephone interview. Responses to items on the IES and the PSS were then sought and each woman reported on her perception of the care received during birthing using the PCQ. These proformas were identical to the ones used during Phase 2 interviews. Similarly, responses were recorded and analysed in the same way as in Phase 2.

Chart Audit

A potential weakness of the present study was the reliance on women's retrospective self-report of obstetric interventions. Therefore, the accuracy of the reported obstetric information was confirmed through a chart audit conducted with a random selection of participants from one site. Thirty medical charts were checked for discrepancies on eleven relevant items of the Perinatal Data Collection Form. The chart audit process investigated a total of 330 separate entries for events during labour, delivery, and postpartum and found agreement on 312 items (94.5%). Information in relation to method of delivery, reason for

Caesarean section, puerperium complications, and postnatal details achieved full agreement. It is concluded that, in general, the women surveyed in this study provided a clinically accurate account of events during labour and delivery.

The chart audit process undertaken in the study confirmed the reliable nature of medical information recalled by consumers of maternity services. Research that compares women's recall of birth events with information documented in the medical records indicates that they remember details of labour and delivery with great accuracy both in the short and longer term (Cartwright & Smith, 1979; Simkin, 1991; 1992). Rofę and Algom (1985) have shown that this accuracy of recollection is independent of education level. The 95% level of agreement achieved in this study confirms the reliability of the perinatal details.

Ethical considerations

Prior to administration of the survey form, participants were given information verbally and in writing about the nature of the study and their right not to participate, to withdraw at any time without explanation, and to not answer any question as they wished. Opportunities were provided for participants to ask questions at any stage. Participants were required to sign a consent form. The information sheet and consent form are presented in Appendix D.

The study did not propose to change or challenge the participants in any way. The purpose was an understanding of women's perceptions of birthing practices and their perceived reactions to birthing. The researcher, who has nursing and clinical psychology experience, conducted all interviews. The ethical code under which this research was conducted had the wellbeing of participants as the paramount consideration. When it was judged that a participant became distressed or indicated that emotional assistance was needed, questions would be asked as to the availability of immediate support and safety, and mechanisms for on-going support and counselling would be offered.

Participants were required to write their names on the personal details sheet only and a coding system was utilised on their particular questionnaires. In this way data did not contain any identifiable names.

The research was approved by the ethics committees at the University and all participating Centres. The four south-east Queensland sites included the Mater Misericodiae Mothers' Hospital, Royal Women's Hospital, Logan Hospital, and Ipswich Hospital.

Statistical procedures

The data were analysed using the Statistical Package for the Social Sciences (SPSS) version 7.5 (1998) personal computer version.

Collected data were reviewed for completeness and consistency within a single data form and among data forms. The accuracy of data coding and computer entry was assured by comparing the computerised data with the original data for a random sample (10%) of the database. Data were re-entered in the few cases where discrepancies occurred. The error rate was .04%.

Initially the distribution of each variable was reviewed by eye and was not found to be meaningfully skewed or kurtotic in distribution. A variety of statistical methods were employed in reviewing the data set. The psychometric properties of the Perception of Care Questionnaire (PCQ), Impact of Events Scale (IES) and Posttraumatic Symptoms Scale (PSS) were assessed using Cronbach's alpha for reliability. The relationships between categorical variables were examined using Chi Square analyses, between continuous variables using Pearson Product-Moment Correlation procedure and between categorical and continuous variables using one-way Analysis of Variance.

To determine the incidence and severity of trauma reactions in birthing women, sub-scale and total scores on the IES and PSS were calculated. An additional step involved the examination of responses on the PSS according to DSM-IV criteria to determine a PTSD profile. A repeated measures analysis of variance was used to examine the change in scores from four weeks postpartum to three months postpartum. A similar procedure was used to examine the change in scores on the PCQ.

To determine the relationship between antenatal variables, obstetric events, and perception of care to the development of birthing trauma a series of simple regression analyses were undertaken. Furthermore, a hierarchical multiple regression (following the technique of Baron and Kenny, 1986) was used to analyse the relationship between obstetric events and the perception of care in the development of postpartum trauma symptoms.

An alpha level of .05 was used for all statistical tests.

CHAPTER 5

Results: Demographics, birthing events and measures

This chapter presents the analysis of some results and has three main aims. Firstly, through the use of descriptive statistics, a comparison of the demographic characteristics of the Phase 1 sample (n = 592) with the State birthing population or national figures will be undertaken to determine the representative nature of the sample. The results of measures in regard to antenatal preparation, level of obstetric risk, anticipatory anxiety, and a measure of state anxiety will also be outlined to establish the pre-existing characteristics of the sample. Secondly, the chapter will outline the birth experiences of women from Phase 2 of the study (n = 499). The incidence of obstetric events during labour, delivery, and the postpartum period will be presented and also compared to *Queensland Perinatal Statistics Data* (Queensland Perinatal Statistics Unit, 1996). The participants' perception of their intrapartum care will be outlined. Thirdly, the reliability and validity of measures used in the study will be established. Therefore, this chapter addresses the sampling, validity, and reliability issues of the study before progressing to the main results in the next chapter.

Characteristics of the sample

Age of participants

The mean age of the women was 27.15 years (range of 17 to 43 years, σ = 5.56 years) and of their partners was 29.99 years (range 17 to 55 years, σ = 6.45 years). Table 5.1 outlines the age of participants in comparison with the State birthing population as outlined in the *Queensland Perinatal Statistics Data* (Queensland Perinatal Statistics Unit, 1996). There is a slight increase in the number of women in the 20 -24 year age group and a slight decrease in the number of women from the 30 - 34 age group in the present sample. 0verall

there is a general consistency between the sample population and statewide information for birthing women.

Table 5:1: Age of Participants

Age group	Research sample % (n)	Queensland Perinatal Statistics Data (1996)
16 – 19	8.2% (49)	6.8%
20 – 24	26.9% (159)	21.2%
25 – 29	33.5%(198)	32.3%
30 – 34	20.1% (119)	27.0%
35 – 39	10.0% (59)	10.9%
40 – 44	1.3% (7)	1.7%

Education

The educational qualifications of participants differed slightly from general population figures for women (Australian Bureau of Statistics, 1993). More women (75.1%) in the sample had achieved part or all of their secondary education compared to the national sample (63%). One quarter of the women had completed some form of tertiary study (25% compared to 37% in the national sample). These differences are understandable given the age range and child-rearing responsibilities of participants in the study. There were no meaningful differences between nulliparous and multiparous women in relation to education level (χ^2 (4) = 7.652, $p > .05$).

Occupation

Although the occupational status of participants reflects trends evident in the general population figures for women (Australian Bureau of Statistics, 1993), the data for this study is more inclusive of the activities of childbearing women (as outlined in Table 5.2).

The largest proportion of participants (39.8%) listed “home duties” as their occupation at the time of the survey. The inclusion of this category in the study may account for the discrepancies in figures for the “clerical / sales and service”

and “production and transport” categories. However, amongst the common categories contained in both data sets, the rates parallel each other.

Table 5:2: Occupational status

Occupational category	Participants % (n)	Australian Bureau of Statistics (1993) %
Management/ Administration.	6.7% (40)	6.7%
Professional/ associate professional	14.6 (85)	20.6%
Trade person	4.8% (28)	3.7 %
Clerical/ sales and service	19.9% (118)	30.6%
Production and transport	3.7 (22)	14.8%
Home duties*	39.8% (232)	-
Unemployed*	6.5% (38)	-
Student*	3.2 (19)	-
Non-response*	1.6%(10)	

* Category not included in ABS data (1993)

Ethnicity

Four categories of ethnicity were used. The majority of the sample were Caucasian/ European (87.4%), with representative proportions of women from Australian Aboriginal/ Torres Strait Islander decent (3.8%), Asian (4.7%), and other (4.2%) categories as outlined in Table 5.3. This data is comparable with the *Queensland Perinatal Statistics Data* (1996) across all categories. However, there are less Aboriginal and Torres Strait Islander women in the present study due to their preponderance outside the south-east corner of Queensland. There were no meaningful differences between nulliparous and multiparous women in regards to ethnicity (χ^2 (4) = 1.273, $p < .05$).

Table 5:3: Ethnicity of participants

Ethnicity	Sample population %	Perinatal Statistics Data (1996)
Caucasian/ European	87.4%	88%
Australian Aboriginal/ Torres Islander	3.8%	5.5%
Asian	4.7%	3.5%
Other	4.2%	2.9%

In summary, there is a high level of comparability for the variables studied between this sample of women and the population as reflected in state and

national data. In particular, data for age, marital status and ethnicity closely reflect the broader population of birthing women.

Marital status

Three categories of marital status: married/defacto, single, and separated/ other (e.g. divorced) were used. The marital status of this sample (contained in Table 5.4) is comparable with the *Queensland Perinatal Statistics Data* (1996) with a slight increase in the number of separated or divorced couples.

Table 5:4: Marital status of participants

Marital status	Sample population %	Perinatal Statistics Data (1996)
Married/ Defacto	85.2%	86.4%
Single	9.1%	12.4%
Separated/ other	5.7%	1.2%

Length of relationship

The length of relationship was entered in number of completed years. The average length of relationship for this sample was 5.51 years, with a range from no ongoing relationship to 22 years (σ = 3.61). These figures are comparable with a similar population of birthing women in another Australian study by Fisher (1994) who reported an average length of relationship of 5.83 years (range was 0 to 21 years) for a sample of 293 women.

Parity

Parity was analysed according to whether the woman was nulliparous (has never given birth to a child) or multiparous (has delivered a child). The sample at Phase 1 consisted of 49% (n = 290) nulliparous women and 51% (n = 300) multiparous women. This is comparable with *Queensland Perinatal Statistics Data* (1996) of 46% nulliparous women and 54% multiparous women.

Antenatal factors

Antenatal preparation

The conclusion to be drawn from earlier literature is that preparation for childbirth may influence levels of anxiety in birthing women and contribute toward reduction of adverse birthing outcomes. Preparation for childbirth was ascertained through two questions in this study.

Firstly, all 592 participants indicated all the information sources they had used in their preparation for childbirth. Information sources comprised: books (86.7%), friends (73.3%), family (74.8%), antenatal and/or parenthood classes (67.2%), discussion with their general practitioner (61.7%), magazines (51.7%), midwife (36.8%), and any other source (9.6%). In the category of 'other' frequent responses included personal experience (e.g. having given birth previously) or professional education. All of the women had undertaken some steps toward seeking information about pregnancy and childbirth with over 87% of participants using three or more sources of antenatal information. Only 2% of women had used staff at the antenatal clinic as their only source of antenatal information. As expected, nulliparous women accessed more sources of information than did experienced mothers (χ^2 (9) = 41.909, p <.0001).

A second question asked women to rate how well prepared they felt for childbirth on a 5 point Likert scale ranging from "1" not at all prepared to "5" very well prepared. A majority of women (76%) reported feeling "satisfied" or "very well prepared" for childbirth as summarised in Table 5.5.

Table 5:5: Preparation for childbirth

Felt prepared for childbirth	% (n)
Not at all	2.6% (15)
A bit, I do not know enough	9.1% (54)
Undecided	12.3% (73)
Satisfied, I know enough	50.3% (298)
Very well prepared	25. 7% (152)

Fewer first time mothers than expected reported being very well prepared for labour and delivery in comparison to multiparous women (χ^2 (5) = 82.33, $\underline{p}$ <.0001). An analysis of variance on the reported level of preparedness in relation to age group revealed a significant difference between older women (35 years and over) and younger women (under 20 years) (F (4) 4.917, $\underline{p}$ <.001). Old women were more likely to rank level of preparedness higher than younger women and may reflect the likelihood that older women have previously given birth and know what to expect.

Level of education was also found to influence preparedness. There was a statistically significant relationship between education level and antenatal preparation (F (4) 6.611, $\underline{p}$ <.0001). Women with a post-secondary education and higher accessed more sources of information ($\overline{X}$ = 6 out of 9) compared to women with a secondary education ($\overline{X}$ = 4.42 out of 9). It is interesting to note however, that more educated women ($\overline{X}$ = 3.60 out of 5) did not report being better prepared for childbirth than less educated women ($\overline{X}$ = 3.88 out of 5). Overall, however, there was no statistically significant relationship between level of education and level of preparedness for childbirth (F (4) .438, $\underline{p}$ > .05).

There was a significant relationship between occupation and antenatal preparation. Women in professional and trade occupations used more sources of information than women in other occupations (F (4) 7.903, $\underline{p}$ < .0001). Women who were self-employed or in unpaid employment reported being better prepared for childbirth than other women in the sample (F (4) 4.073, $\underline{p}$ < .0001).

Marital status did not influence the number of antenatal information sources used (F (4) 2.213, $\underline{p}$ > .05). However, married women were more likely to report higher levels of preparedness ($\overline{X}$ = 3.96 out 5) than single women ($\overline{X}$ = 3.50 out of 5). This difference in level of preparedness was statistically significant (F (4) 3.686, $\underline{p}$ < .05).

Women from non-English speaking backgrounds used fewer sources of antenatal information (e.g. Asian women $\overline{X}$ = 3.30 out of 9) than women of Caucasian decent ($\overline{X}$ = 4.74 out of 9). The influence of ethnicity on the number of sources of antenatal information accessed was statistically significant (F (4) 7.030, p <.0001) and may reflect the lack of available resources for non-English speaking women. However ethnicity did not statistically influence women's perceptions of their level of preparedness (F (4) 1.705, p > .05).

Partner support

The availability of support during pregnancy and childbirth is also recognised as a factor in minimising birth anxiety. Participants' perceptions of partner support throughout the pregnancy were high (n = 587, $\overline{X}$ = 4.3 out of 5, σ = 1.2). Table 5.6 reveals that the majority of women (88.5%) "agreed" or "strongly agreed" that partners had been supportive during pregnancy.

Table 5:6: Perception of partner support

Partner supportive	% (n)
Strongly disagree	4.9% (29)
Disagree	2.5% (15)
Undecided	3.9% (23)
Agree	34.2% (201)
Strongly agree	54.3% (319)

Age influenced the perception of partner support with younger women rating support more highly than older women (χ^2 (4) = 31.38, p < .01). First time mothers tended to rate partner support more highly than multiparous women (χ^2 (4) = 14.13, p < .007). As expected, women who were married or in a defacto relationship reported more support than women who were single or separated/ divorced (χ^2 (12) = 150.529, p <.0001). Caucasian women reported more support than women from other ethnic origins (χ^2 (16) = 31.093, p < .01).

Obstetric risk

Women were not recruited into the study if their pregnancy placed them at a high obstetric risk for birth complications. This level of risk was minimised through the recruitment procedure and confirmed through details about previous obstetric/gynaecological events. On the whole the sample population reported few adverse obstetric/gynaecological experiences (as detailed in Table 5.7).

Table 5:7: Previous obstetric/ gynaecological events

Obstetric / Gynaecological event	% (n)
No previous event	49.9% (295)
Previous miscarriage	28.5% (169)
Worrisome menstrual periods	10.0% (59)
Ovarian Cysts	9.5% (56)
Other event	9.6% (57)
Distressing gynaecological procedure	5.1% (30)
Worrisome vaginal discharge	3.7% (22)
Endometriosis	3.7% (22)
Sexually transmitted disease	3.5% (21)
Ectopic pregnancy	2.2% (13)

A large majority of the sample (82.1%) nominated none or one adverse obstetric/ gynaecological event. There were no differences on the level of obstetric risk between nulliparous and multiparous women (χ^2 (7) = 6.557, p >.05). Age, marital status, education level, and ethnicity were not associated with the level of obstetric risk (p >.05).

Anticipatory birth stress

Participants were asked to rate their level of anxiety about the approaching birth on a 5 point Likert scale (summarised in Table 5.8). Over half of the women (56.6%) “agreed” or “strongly agreed” that they felt anxious about the birth. There were no differences, however, between nulliparous and multiparous women on levels of antenatal anxiety (F (1, 598) = 2.642, p >.05). While there was a consistent negative relationship between level of preparedness and anxiety (χ^2 (16) = 57.131, p < .0001), this was not related to the amount of information sought. Level of anxiety was, however, associated with partner support (χ^2 (16)

= 61.748, p < .0001), in that if a women felt supported, less anxiety was expressed.

Table 5:8: Anticipated anxiety about childbirth

Level of anticipated anxiety	% (n)
Very Anxious	13.0% (77)
Anxious	43.7% (258)
Minimal anxiety	20.3% (120)
No anxiety	8.1% (48)
Do not know	14.9% (80)

Women were asked to indicate the likelihood of experiencing any complications during labour and delivery. While 45% of respondents thought that birth complications would be unlikely, over 40% of women reported that they "did not know" (as summarised in Table 5.9).

Table 5:9: Expectation of complications during labour & delivery

Expectation	% (n)
Very likely	4.1% (24)
Likely	10.2% (60)
Do not know	40.5% (240)
Unlikely	36.2% (213
Not at all likely	8.8% (52)

It was more likely for a first time mother to rate the likelihood of adverse events occurring during labour lower than a woman who had previously delivered (χ^2 (4) = 13.847, p <.008). Overall, however, there is evidence that, in general, participants in the study approached childbirth realistically, with most acknowledging that obstetric complications are difficult to predict and may occur. It is, therefore, reasonable that women report some anxiety about the pending labour and delivery.

State-Trait Anxiety Inventory - State version

Participating women also completed the State version of the State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1983). The inventory results for this sample (n = 591, $\overline{X}$ = 36.95, σ = 11.31, range 20 - 80) are similar to population norms for

women in the 19 - 39 age group (mean = 36.17) as reported by Spielberger et al. (1983). In comparison with the population distribution derived by Spielberger et al. (1983), approximately 84% of this sample did not manifest anxiety at one standard deviation from the mean. It is concluded that there are no statistically significant differences between the study population and established norms for women in the same age group.

In order to identify the nature of any differences between nulliparous and multiparous women on the STAI score, a one-way analysis of variance was conducted. There was no statistically significant difference between the groups ($F (1, 588) = 1.223$, $p > .05$). In other words, when compared with multiparous women ($\bar{X} = 37.46$), first time mothers ($\bar{X} = 36.43$) were found to report similar low levels of anxiety.

As expected, an inverse relationship was found between preparedness and state anxiety ($F (1, 588) = 12.386$, $p < .0001$) in that the more prepared a woman felt the less anxious she was about labour and delivery. In general, the women in this study acknowledged that adverse birth events may occur, but concerns were not reflected on a broad indicator of state anxiety. Furthermore there were no differences between first time mothers and multiparous women in relation to state anxiety or level of obstetric risk.

In summary, the antenatal data revealed no important differences within the group or with the average birthing population. In terms of age, occupation, ethnicity, marital status and length of relationship the sample characteristics are aligned with national and state figures and relevant research findings. The majority of women reported being prepared for childbirth, of low obstetric risk, and perceived their partners as supportive. While participants expressed some anxiety in relation to childbirth, the majority did not know or did not expect complications to occur during labour and delivery. According to the STAI – state version, 84% of women in this sample were not evidently anxious.

Events during labour

The data for Phase 2 commenced with a description of events that occurred during labour and delivery. There were 499 participants in Phase 2 of the study. Descriptive statistics are used to determine the incidence of certain obstetric events for this sample. Where applicable, findings of this study were compared with the *Queensland Perinatal Statistics Data* (Queensland Perinatal Statistics Unit, 1996) as denoted in the following tables.

Type of birth attendant

Birth attendants were clustered into two groups (1) midwife, and (2) doctor/ obstetrician. Midwives were nominated by the women as the primary carer or the "person who was responsible for the delivery" in 60.1% (n = 300) of cases, with doctors/ obstetricians being the primary carer for 39.9% (n = 199) of women.

Support person

A 'support person' during labour and delivery accompanied all participants. These included the woman's partner (81.2%), mother (20.2%), sister (8.4%), friend (5%), aunt (1.6%) and relatives through marriage (4.4%). Every woman had at least one support person available during labour. However, if the woman (3.2%) required a general anaesthetic during delivery then support persons were not admitted to the operating room and could not be present for the actual delivery.

Onset and progress of labour

Obstetric intervention during childbirth was evident from the onset of labour. Although labour commenced spontaneously in 64.1% (n = 320 of cases), the progress of labour without augmentation occurred in only 16% of cases (as summarised in Table 5.10). The rate of labour augmentation was 48.1% with the majority of those incidences being due to the artificial rupture of the membranes

(46.5%). There was a slight increase in the rate of induction (26.5%) when compared to the *Queensland Perinatal Statistics Data* (1996). Labour did not commence for the 9.4% of women who had a planned Caesarean section.

Table 5:10: Progress of labour

Progress	This sample %	Perinatal Statistics %
Spontaneous	16.0%	29.9%
Augmented	48.1%	36.7%
Induced	26.5%	21.6%
Labour did not occur	9.4%	11.8%

These data reflect a moderate trend towards the use of interventions to hasten the progress of labour. In particular, augmentation was used more often with this group of women than was the case in 1996 (Queensland Perinatal Statistics Unit, 1996). This difference may reflect variations in the classification of augmentation of labour. For instance, midwives may not consider that women's labours were augmented if an ARM was performed, therefore the rates of augmentation in the Queensland Perinatal Statistics Data are lower.

Electronic fetal monitoring

In addition to the high rate of intervention to progress labour, a number of obstetric events occurred during the course of labour. Commonly, continuous electronic fetal monitoring was employed for at least some of the time during labour (67.3%, n = 336). This procedure was used more for this group of women than was the case in 1996 (Queensland Perinatal Statistics Unit, 1996) where 50% of women received electronic fetal monitoring. This difference may reflect variations in the classification of electronic fetal monitoring in labour. For instance, midwives may not consider that the women received EFM during labour if she only received an episode of EFM on admission, therefore the rates of EFM in the Queensland Perinatal Statistics Data are lower

Drugs during labour

Drugs for pain relief were commonly used during labour. Only 13.2% of women had a drug-free delivery. The majority of women received some form of pain relief during labour (as outlined in Table 5.11). Nearly forty-seven percent of women (46.7%) received one form of drug during labour while nearly thirty percent (29.7%) received two types of drugs. Over ten percent of women (10.4%) received three or more different drugs during labour. When compared to the *Queensland Perinatal Statistics Data* (1996), there was a decreased use of the analgesic, Nitrous Oxide gas, but similar levels of use for narcotic drugs such as pethidine and epidural anaesthesia for this sample.

Table 5:11: Analgesia/ anaesthesia during labour

Analgesia/ anaesthesia	This sample %	Perinatal Statistics (1996)%
Nitrous Oxide Gas	48.1% (240)	58.8%
Pethidine	40.1% (200)	37.0%
Epidural/ Spinal Block	46.5% (232)	43.0%
General Anaesthetic	3.2% (16)	4.6%
No analgesia	13.2% (66)	

The declining use of Nitrous Oxide gas is surprising given that it is supplied at the bedside and is simply inhaled and does not require an invasive procedure or discomfort to the woman. Perhaps this trend needs to be considered in light of the increasing use amniotomy and the induction of labour reported earlier. By hastening labour, women may have less time to adjust to labour pain or experience more pain, and may therefore require more potent drugs to manage pain. It is also likely that the increased use of epidural analgesia may reduce the use of Nitrous Oxide gas.

Delivery

Mode of delivery was compared to the State average for nulliparous and multiparous women. Surprisingly, there were fewer spontaneous deliveries for multiparous women (38.4%) but slightly more for nulliparous women (as summarised in Table 5.12). There was a mixed finding in relation to the rates of

instrument-assisted deliveries. While the reported use of forceps was around the same as that in 1996, delivery with the use of vacuum extraction for nulliparous women had increased (6.4%). The increased use of vacuum extraction may be related, in part, to an active teaching program on the application of this procedure by Vacca. He was a consultant obstetrician at two of the large teaching hospitals used in the present study. As a result of his influence, more doctors may have opted to use the procedure than was the case in 1996.

Over 20% of women had a Caesarean delivery (21.2%), with 38 women having an elective Caesarean section and 68 women having an emergency procedure. More nulliparous women (n = 44) than multiparous women (n = 24) had an emergency Caesarean delivery. Similarly more multiparous women (n = 32) than nulliparous women (n = 6) had an elective Caesarean delivery.

Table 5:12: Mode of delivery

Mode of delivery	This sample		Perinatal Statistics (1996)	
	Nulliparous	Multiparous	Nulliparous	Multiparous
Spontaneous	29.6% (148)	38.4% (192)	22.6%	45.2%
Instrument Delivery				
Forceps	3.8% (19)	.6% (3)	4.6%	1.3%
Vacuum delivery	6.4% (32)	1.6% (8)	2.8%	1.1%
Total instrument rate	10.2% (51)	2.2% (11)	7.4%	2.4%
Caesarean Section				
Elective	1.2% (6)	6.4% (32)		
Emergency	8.8% (44)	4.8% (24)		
Total Caesarean rate	10% (50)	11.2% (56)	9.29%	13.21%

Reason for Caesarean section

One hundred and six women (106) in this sample delivered via Caesarean section. The reason for the Caesarean section delivery was reported by participants and summarised in Table 5.13. The most frequently reported reason for a Caesarean delivery was “failure to progress in labour” (25.7%). “Fetal position” (e.g. breech) accounted for 23.8% of operative deliveries, while having had a “previous delivery by Caesarean section” accounted for 20% of cases.

Table 5:13: Reason for Caesarean section

Reason for Caesarean	This sample % (n)	Perinatal Statistics (1996) % (n)
Failure to progress	25.7% (27)	20.3%
Fetal position	23.8% (25)	19.1%
Previous Caesarean section	20.0% (21)	31.6%
Fetal distress	8.5% (9)	18.6%
Maternal distress	5.7% (6)	6.0%
Poor intrauterine growth	3.8% (4)	4.7%
Other	12.4% (13)	21.9%

In comparison with the *Queensland Perinatal Statistics Data* (1996) there are two discrepancies of note. Firstly, there is a decline in the number of Caesarean deliveries due to a previous Caesarean delivery for this sample (20% compared to 31.6%). This finding may reflect changing clinical practices in line with research evidence (e.g. Enkin et al., 1995; Stephenson, 1992) that has demonstrated safe birth outcomes following a trial of labour. Secondly, there is a decline in the number of Caesarean deliveries due to fetal distress for this sample (8.5% compared to 18.6%). This finding may reflect a tendency for obstetricians to not rely solely on EFM data in line with research evidence (e.g., Hathaway, 1996; Haverkamp, 1985), and improved perinatal review processes within hospitals (NHMRC, 1996).

An examination of relationships amongst obstetric events reveals a "cascade of intervention" similar to that described by Inch (1982) and Wagner (1994a). That is, the use of certain obstetric procedures increased the likelihood of further intervention. In the present study, the induction of labour was associated with the increased likelihood of a woman having an operative or instrument delivery (χ^2 (4) = 18.893, $\underline{p}$ <.001). Similarly, these women were more likely to have an intravenous line inserted (χ^2 (4) = 127.034, $\underline{p}$ <.001), epidural anaesthesia (χ^2 (4) = 32.428, $\underline{p}$ < .001), and a much longer labour (χ^2 (28) = 434.376, $\underline{p}$ <.0001) than women who were not induced and had a spontaneous vaginal delivery.

In summary, inspection of the data indicates that the use of obstetric interventions during labour in this sample was comparable with those outlined in *Queensland Perinatal Statistics Data* (1996). There was a slight increase in the use of augmentation procedures to progress labour and the use of narcotic drugs during labour. For delivery, there was an increased use of vacuum extraction for nulliparous women but the rate for spontaneous vaginal delivery, instrument delivery using forceps, and Caesarean section remained around the same rate as the 1996 Queensland average. Obstetric interventions at any stage of labour, and the use of epidural analgesia, were strongly associated with the likelihood of a woman experiencing an operative delivery.

Events associated with delivery

There are a number of obstetric interventions associated with delivery. For example, an oxytocic drug is routinely administered intramuscularly to the mother when the baby's shoulders or body are delivered to assist with the delivery of the placenta. However, at times, a woman may not anticipate other procedures associated with delivery. These events included episiotomy, suturing of perineal tears, and manual removal of the placenta (as summarised in Table 5.14).

Table 5:14: Events associated with delivery

Post-delivery events	This sample %	Perinatal Statistics (1996) %
Episiotomy	10.8% (54)	19.0%
Stitches (vaginal delivery)	36.3% (181)	37.0%
Manual removal of placenta	5.2% (26)	1.8%

When compared to 1996 data, there was a decrease in the rate of episiotomy (10.8% compared to 19%), with the rate of insertion of sutures approximately the same. Although episiotomy rates had fallen in line with WHO (1985) recommendations, the associated rate of perineal suturing had not. This finding may reflect an aspect of intrapartum care whereby midwives and doctors are not adequately supporting women through delivery with the aim of reducing perineal

trauma (Renfrew et al., 1998; Myrfield et al., 1997). Alternatively, the insertion of sutures may be unnecessary in some cases. With the decreasing length of inpatient stay and lack of continuity of care, midwives and doctors may have limited opportunity to observe the natural healing capabilities of the perineum and suture in cases where it may not be warranted (Wagner, 1998).

Manual removal of a retained placenta was required for 5.2% (n = 26) of women, three times the 1996 Queensland average. Once again, the likelihood of this sort of maternal complication is increased with the use of induction (Enkin, et al., 1989). A consideration in determining the reasons for this increased incidence is that some women may have reported staff intervention in the delivery of the placenta (e.g. exerting external pressure on the fundus of the uterus to expel the placenta, or pulling on the cord) and interpreted this as a 'manual removal'. In some cases the placenta may have been removed by the birth attendant performing a vaginal examination. This may not have been recorded by staff as a manual removal of placenta whereas the extraction of the placenta under general anaesthesia would be.

Delivery complications

There was a range of complications following delivery. Women reported the presence of complications for the baby in 23.4 % of cases compared to 22.1% for the 1996 Queensland average. Table 5.15 outlines the incidence of complications that included infection, respiratory distress, medical condition (e.g. neonatal hypoglycaemia) and injury or birth trauma to the baby (e.g. fractured clavicle or cranial haematoma from vacuum delivery).

In most cases, the complication required the baby to spend some period of time in the special care nursery. Neonatal jaundice was only included if specified by the mother as requiring the baby to be admitted to the special care nursery for treatment.

Table 5:15: Complications to the baby

Condition	This sample %	Perinatal Statistics (1996) %
Respiratory condition	9.9% (50)	37.5%
Neonatal jaundice	4.2% (21)	4.4%
Infection	4.4% (22)	-*
Medical diagnosis/ abnormality	1.6% (8)	3.9%
Injury / birth trauma	3.3% (16)	0.3%

* Data not available.

Complications to the mother were reported in 14.4% (n = 72 out of 499) of cases. Maternal complications included: post-partum haemorrhage (4.6%, n = 23), medical condition (e.g. anaemia) (4.6%, n = 23), infection (3.4%, n = 17), and severe post-delivery pain (1.8%, n = 9). Although multiparous women were more likely to report post-operative pain than nulliparous women (χ^2 (1) = 8.781, $\underline{p}$ < .003), there were no other statistical differences between the groups.

The reported rate of maternal complications in this sample is more than twice the Queensland average of 6.1%. Several factors may account for this discrepancy. Firstly, it is highly likely that the complications may have arisen after discharge (e.g. anaemia or genitourinary tract infection) and were therefore not included in the perinatal data collection. Secondly, the *Queensland Perinatal Statistics Data* (1996) does not include "severe pain" as a complication and yet women in this study described postpartum pain in debilitating terms.

Another reported maternal complication in this study was postpartum haemorrhage. By way of explanation, it may be possible that some women may have interpreted an episode of heavy postpartum bleeding as 'haemorrhage' but the blood loss may not have exceeded 500 mls and therefore was not recorded in the perinatal data collection form by hospital staff. Nevertheless, some women described the experience of a postpartum haemorrhage in graphic detail. One woman reported, "I began to dry retch and then I felt the blood rushing from me and I could hear the 'splosh' as the blood landed on the floor".

Odent (1998) concluded that postpartum haemorrhage is almost always related to inappropriate interference in the third stage of labour by staff. Interference includes encouraging the woman to sit upright, not providing sufficient warmth, and early clamping of the cord. The present study identified a slight increase in the rate of postpartum haemorrhage following delivery compared to statewide data. Possible explanations for this increase are not apparent as the protocol for the management of the third stage of labour was not specifically addressed in this study. It is known however, that all participating research sites routinely administer an oxytocic once the shoulders or body of the baby have been delivered to hasten the delivery of the placenta with the aim of lowering the incidence of haemorrhage. Despite the routine use of this drug to prevent postpartum haemorrhage, the interference, as suggested by Odent (1998) may be a contributing factor in the continuing prevalence of this complication.

Postpartum Events

Drugs following delivery

Nearly sixty-seven percent of women had no analgesic medication in the days following delivery (66.9%, n = 334) while 19.2% of women (n = 96) reported taking analgesic medication (usually paracetamol) for one to two days following a spontaneous or instrument assisted delivery. A further 13.6% (n = 68) of women took drugs for three to seven days postpartum. An exceptional case was one woman who reported taking panadeine forte for 30 days following delivery by forceps.

Women who delivered by Caesarean section (n = 106) reported taking analgesic medication on average for nearly 4 days postpartum ($\bar{X}$ = 3.8 days, σ = 3.34 days). This group of women required a range of post-operative medication that included panadol (49.1%, n = 52), panadeine (45.3%, n = 48), pethidine (18.9%, n = 20), indocid (13.2%, n = 14) and morphine (8.1%, n = 31) as outlined in Table 5.16.

Table 5:16: Drugs following Caesarean section

Drug	%*
Panadol	49.1% (52)
Panadeine	45.3% (48)
Morphine	29.2% (31)
Pethidine	18.9% (20)
Indocid	13.2% (14)

*Reporting of more than one drug was possible, therefore total exceeds 100%.

As expected, women who experienced a Caesarean delivery required pain relief for longer ($\bar{X}$ = 3.81 days, σ = 3.34) than women who had a spontaneous vaginal delivery ($\bar{X}$ = .87 days, σ = 1.92). Although many women did not require analgesia following childbirth, it appears evident that following a Caesarean or instrument-assisted delivery, some women experience a high degree of pain that requires analgesia for up to a week postpartum. This is of concern given the association between the extent of post-delivery pain and maternal distress in the postpartum period (Von Korff & Simon, 1996).

Perception of care

The woman's perception of the care provided by obstetric and midwifery staff was investigated as a possible mediating factor in the development of trauma symptoms. All participants completed the Perception of Care Questionnaire (PCQ) (Fisher, 1994) on two occasions, four to six weeks postpartum (Phase 2). Women who indicated a stress response to childbirth repeated the measure three to four months after delivery (Phase 3).

The possible score range on the PCQ is from 22 to 110. The mean overall score for this sample was 82.90 (σ = 12.71) indicating that most women were satisfied with the maternity care they received. This total score was slightly lower than the average score of 90.8 reported by women in an earlier Australian study (Fisher, 1994). There was a small difference in the reported perception of care for first time mothers ($\bar{X}$ = 82.86, σ = 11.71) and experienced mothers ($\bar{X}$ = 82.93, σ =

13.58). Multiparous women were more likely to perceive their maternity care positively than first time mothers (F (1, 498) = .004, p < .05).

The response rate on the PCQ (as summarised in Table 5.17) reflects the percentage of women who responded “agree” or “strongly agree” on an item. An examination of the individual PCQ items indicates that women perceived the technical components of care highly. For example, women had confidence in the person delivering their baby (88%), felt that the right decisions were made (84%), and that staff spoke in language that was easily understood (94%).

Table 5:17: Responses on the Perception of Care Questionnaire

PCQ Item	%
Confidence in birth attendant	88% (439)
Birth attendant made the right decisions	84.4% (412)
Birth attendant was gentle	81.4% (406)
Explained procedures clearly	80.0% (389)
Listened closely	74.3% (371)
Asked how the woman wanted to deliver	34.4% (171)
Used terms that were understood	94.6% (472)
Asked how I felt about the delivery	13.8% (69)
Encouraged questions	49.7% (248)
Courteous and polite	92.2% (460)
Birth attendant was kind and considerate	86.6% (432)
Birth attendant talked down to me	9.4% (42)
Overall satisfaction	81.2% (405)
Recommend	82.9% (414)
Midwife kind	95.4% (476)
Midwife skilful and gentle	93.4% (466)
Midwife explained clearly	83.6% (417)
Midwife encouraged questions	54.7% (273)
Partner’s reaction	74.8% (373)
Partner easy to talk to	90.8% (453)
Wanted to talk to others	44.3% (221)
Had every opportunity to discuss birth	65.3% (326)

There was less satisfaction with the emotional aspects of care. Often staff did not ask women how they felt about the birth, with only 13.5% of participants reporting that this occurred. Only half of the sample felt that staff encouraged questions about the birth (49.7%). Furthermore, only one third of women (34.3%) were asked how they wanted to deliver the baby. Midwifery care was rated highly with 95% of women reporting that midwives were kind. The midwives’ skill level and

gentleness was also rated highly (93%). Only half of the women (54%) however, were satisfied with communication aspects of care with midwifery staff. While women found their partners easy to talk to about the birth (90%), only 44% of participants were satisfied with the opportunities to discuss the birth with staff.

PCQ Factor analysis

Factor analysis attempts to identify underlying factors that explain the pattern of correlations within a set of observed variables. The sample size (n = 499 cases of 22 items) afforded sufficient power to conduct a confirmatory factor analysis (Tabachnick & Fiddell, 1989). Initial statistics indicated 4 factors with eigenvalues above 1 (see Table 5.18).

Table 5:18: Initial statistics

Factor	Eigenvalue	% of Variance	Cumulative %
1	9.249	42.040	42.040
2	1.447	6.577	48.617
3	1.380	6.272	54.889
4	1.230	5.591	60.480

The four extracted factors accounted for 60.48% of the total variance and confirm the findings of previous research (Fisher, 1994). Although a significant proportion of the total variance is accounted for by these 4 factors, the remaining variance is presumably accounted for by a combination of more contextually dependent variables and/or measurement error. An item correlation matrix revealed four factors which consisted of a professional / technical, decision-making dimension (Factor 1); emotional or affective care (Factor 2), nursing care (Factor 3); and partner response (Factor 4).

An obliquely rotated pattern matrix is presented in Table 5.19. An asterisk indicates the expected loading pattern of each item. Results indicate that the four factors were reliably similar to the expected factor structure. Nevertheless, there were a few departures from expectation. Two items, “staff listened to me” and

"staff explained clearly what they were doing" loaded on Factor 1 (professional / technical). These two items were expected to load on Factor 2 (affective care).

Table 5:19: Pattern matrix

Items	Components			
	Factor 1 Professional-Technical	Factor 2 Affective care	Factor 3 Nursing care	Factor 4 Partner response
Confidence	.810*			
Decisions	.781*			
Not kind	.753*			
Polite	.750*			
Satisfied	.735*			
Talked down	.727*			
Recommend	.720*			
Gentle	.678*			
Listened	.675	*		
Explained	-.603	*		
Partner react	.535			.382*
Terms	.379	*	.326	
Partner talk				.824*
Debrief				.691*
Talk to others				-.436*
Midwife kind			.886*	
Midwife gentle			.816*	
Midwife explain		-.325	.697*	
Encouraged questions		-.677*		
Midwife encouraged questions		-.662	.352*	
Asked how I felt		-.645*		
Asked about wishes for delivery	.307	-.350*		

* Expected to load on the factor

There were also five items with split loading. In particular, the item "partner reaction" loaded on Factor 1 and 4 which may reflect women's perceptions of their partner's involvement in the decision-making during labour and delivery as well as their partner's response to the event. The item of "staff used terms that I understood" split load on Factor 1 (professional / technical) and Factor 3 (nursing care). This item reflects the ability of staff to use terms or words that are easily understood by the people for whom they are caring. The level of satisfaction with this aspect of care relates more closely to the professional / technical dimension of care and nursing care provided by birthing staff rather than as part of emotional care where it was expected to load. The items that reflected "explanations by nursing staff" and "midwives encouraged me to ask questions"

loaded on Factor 2 and Factor 3 and may reflect the perception by women that information sharing and consultation is a component of emotional care as well as nursing care. Asking women about their 'wishes for delivery' reflected both the collaborative partnership between birth attendant and woman (affective factor) and the technical measures employed during labour and delivery (professional / technical factor).

Cattell's salient similarity index (Cattell, 1966) was calculated for each factor in order to compare the emergent factor structure with expectations (see Table 5.20). Results reveal a satisfactory level of consistency between the structure and expectations for all factors.

Table 5:20: Similarity index for PCQ factors

	Hp	S	F2	F3	F4
F1	18.2%	0.90***	0.16	0.47	-0.39
F2	66.71%	0.60***		0.12	-0.11
F3	25.0%	1.14***			-0.16
F4	0%	2.00***			

***p < 0.001

The strong correlation between technical and affective dimensions of the PCQ (0.638) as outlined in Table 5.21 suggest that these dimensions are not independent and are probably influenced by each other. DiMatteo and Hays (1980) and Fisher (1994) reported a similar correlation of 0.69 between technical and affective dimensions. Furthermore the strong correlation between PCQ factor scores and the total score permits the use of the total score in further calculations.

Table 5:21: PCQ factors and total score for Phase 2

	PCQ Factor 1 Technical	PCQ Factor 2 Affective	PCQ Factor 3 Nursing	PCQ Factor 4 Partner response
PCQ 2	.638**			
PCQ 3	.633**	.615**		
PCQ 4	.554**	.427**	.444**	
PCQ Total	.926**	.810**	.796**	.694**

**p < 0.01

PCQ internal reliability

In this study the reliability coefficients for the Perception of Care Questionnaire were high for both Phase 2 (n = 499, α = .8995) and Phase 3 (n = 141, α =.9556). Furthermore, there is a high correlation between PCQ factors (professional / technical, affective, nursing and partner response) and PCQ total score for Phase 2 and Phase 3 (as outlined in Tables 5.21 and 5.22).

Table 5:22: PCQ factor and total scores for Phase 3

Factor	PCQ1_3	PCQ2_3	PCQ3_3	PCQ4_4
PCQ Factor 1_3				
PCQ Factor 2_3	.931**			
PCQ Factor 3_3	.810**	.814**		
PCQ Factor 4_3	.923**	.906**	.834**	
PCQ Total_3	.972**	.962**	.903**	.961**

** Correlation is significant at the p <.01 level (2-tailed).

Influence of antenatal variables on obstetric intervention and care

There is an extensive body of literature investigating the influence of anxiety on events during labour and delivery and the quality of the birth experience. A multiple regression analysis was therefore undertaken to determine the relationship between the antenatal variables under investigation and (1) the level of obstetric intervention (as measured by the obstetric impact score) and (2) the perception of care.

There was no consistent statistical relationship found between the antenatal variables under investigation and the level of obstetric intervention (R = .146, R^2 = .021. p >.05). Level of preparedness, partner support, anticipatory anxiety, likelihood of complications, obstetric risk and state anxiety were not statistically associated with the level of obstetric intervention.

There was no consistent statistical relationship found between the antenatal variables under investigation and the total score on the PCQ (R = .150, R^2 = .023. p >.05). Level of preparedness, partner support, anticipatory anxiety,

likelihood of complications, obstetric risk and state anxiety were not statistically associated with a woman's perception of care.

Measures of trauma symptoms

Two measures of trauma symptoms were administered during the study, the Impact of Events Scale (IES) (Horowitz, et al., 1978) and the Post-traumatic Symptoms Scale - Interview schedule (PSS) (Foa, et al., 1993). All women completed the IES in Phase 2 of the study and the scale was repeated in Phase 3 with women who had indicated stress responses to birthing. The PSS was only administered to those women who met the screening criteria for trauma on the IES in Phase 2 and was repeated in Phase 3. While the results of these key measures will be presented in Chapter 6, the following section provides information as to the validity and reliability of these measures.

The internal reliability of the IES is well documented (Horowitz, Wilner & Alvarez, 1979). In this study the reliability coefficients for the instrument were high for both Phase 2 (n = 499, α = .9024) and Phase 3 (n = 141, α =.8008). There was a high correlation between IES factors (avoidance and intrusion) and total scores for Phase 2 and Phase 3 as outlined in the matrix presented in Table 5.23.

Table 5:23: IES factors and total scores for Phase 2 and Phase 3

Factor	IES-2 Avoidance	IES-2 Intrusion	IES-2 Total	IES-3 Intrusion	IES-3 Avoidance
IES-2 Avoidance					
IES-2 Intrusion	.789**				
IES-2 Total	.947**	.945**	.552*	.515**	.603**
IES-3 Avoidance	.591**	.402**			
IES-3 Intrusion	.520**	.411**	.556**		
IES-3 Total	.627**	.461**	.867*	.896**	

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

The internal reliability of the PSS is also well documented (Foa et al., 1994). In this study the reliability coefficients for the instrument were high for both Phase 2 (n = 141, α = .7599) and Phase 3 (n = 141, α =.7166).

There was a high correlation between IES factors (avoidance and intrusion) and PSS factors (arousal, avoidance and re-experiencing) as outlined in the correlation matrix presented in Table 5.24.

Table 5:24: Correlation of IES factors and PSS factors

Factor	IES Avoidance	IES Intrusion	PSS Arousal	PSS Avoidance
IES Avoidance				
IES Intrusion	.789**			
PSS Arousal	.567**	.589**		
PSS Avoidance	.703**	.505**	.644**	
PSS Re-experience	.676**	.660**	.650**	.629**

** Correlation is significant at the 0.01 level.

Conclusion

The chapter outlined the characteristics of this sample of birthing women and outcomes in relation to antenatal preparation, antenatal anxiety, birth intervention, and perception of care. The results indicated that the sample of women were representative of the birthing population, well prepared for childbirth, had low obstetric/gynaecological risk, and were no more clinically anxious during the antenatal period than the general population. There was some evidence of greater obstetric intervention at the commencement of labour and a similar increased use of augmentation procedures to progress labour. Similarly, there was an increased use of epidural analgesia as opposed to less invasive approaches such as nitrous oxide gas. The rates for the various modes of delivery were comparable to 1996 perinatal data. While figures for spontaneous delivery and Caesarean section were around the same, there was an increase in the rate of instrument assisted deliveries, but the proportion of cases was low.

The total score on a measure of satisfaction with the care provided by midwifery and obstetric staff was comparable to the outcome reported in another Australian study (Fisher, 1994). An examination of individual items on the PCQ revealed that women were satisfied with the technical aspects of care but staff tended to neglect the emotional aspects of care. For example, many women reported that staff did not ask how they felt about the birth or encourage opportunities to discuss the event.

The range of antenatal variables under investigation were not found to be statistically associated with the level of obstetric intervention during labour and delivery or the quality of care received during childbirth.

The reliability and validity of all measures used in the study were established. The IES is widely used as a screening tool to detect trauma symptoms and there is a high level of correlation between the IES and the PSS (which reflects *DSM-IV* criteria).

CHAPTER 6

Results: Incidence and contributing factors of trauma symptoms following childbirth

Having established the representative nature of the sample and the validity and reliability of the measures, this chapter presents further analysis of the data according to the purposes of the research. Firstly, this chapter will report on the incidence of acute trauma reactions and acute PTSD following childbirth. Secondly, factors that may contribute to the development of acute trauma reactions in the present study will be identified. A series of multiple regression analyses of antenatal, birthing, and care variables on the development of acute trauma symptoms will be outlined. Furthermore, a hierarchical regression analysis will be undertaken to determine if the relationship between obstetric intervention and trauma is mediated by the perceived quality of care. Thirdly, the research will determine the incidence of chronic trauma reactions and chronic PTSD following childbirth. Finally, factors that may contribute to the development of chronic trauma reactions in the present study will be identified.

Incidence of acute trauma symptoms following childbirth

The first purpose of this research was to identify the incidence and severity of trauma symptoms and acute PTSD in women following childbirth. Trauma symptomatology is predicated on the need for the person to have experienced a stressful event. Therefore as a precursor to the administration of the IES, the 499 women in Phase 2 of the study were asked to “describe their lasting memory of the birth, the one thing they thought about most”. Traumatic events were not prompted by the researcher. Over one third of women (37.7%, n = 188 out of 499) nominated a positive lasting memory of labour and delivery. The remainder

of the sample (n = 311 out of 499) nominated stressful events that were categorised into six areas (as summarised in Table 6.1).

Table 6:1: Stressful event during childbirth

Stressful event	% (n)
Labour pain	20.8% (104)
Fear for own life or baby	17.2% (86)
Pain of intervention	13.5% (67)
Lack of care/support from staff	5.6% (28)
Negative other	5.2% (26)

The most common stressful event was the experience of labour pain (20.8%, n = 104 out of 499). Fear for the wellbeing of the baby or themselves was reported by 17.2% (n = 86 out of 499) of participants. Pain as a result of obstetric intervention was distressing for approximately 13% of women (13.4%, n = 67 out of 499) while a perceived lack of care by staff during labour was distressing for 5.6% (n = 28 out of 499) of women. Around 5% (n = 26 out of 499) of women nominated a stressful event that fell outside the major negative categories (e.g., lack of support by the partner during labour).

Incidence of acute trauma symptoms

After nominating a lasting memory in regards to the birth, all participants then answered items on the IES. The responses to each item on the IES were rated according to their frequency including, “0 – not at all”, “1 - rarely”, “2 - sometimes” or “3 - often” (as outlined in Table 6.2).

If participants reported trauma symptoms, these tended to be intrusive in nature. The intrusion subscale consists of items 1, 4, 5, 6, 10, 11, and 14. Examples of intrusive symptoms included “I thought about the birth when I didn’t mean to” (75.1% response rate) and “pictures of the birth popped into mind” (54.5% response rate). The avoidance subscale consists of items 2, 3, 7, 8, 9, 12, 13, and 15. The most frequently reported avoidance symptoms were “I avoided

getting upset about it [the event]" (23% response rate) and "I tried not to think about it" (21.4% response rate).

Table 6:2: Responses on IES items

IES Item	Not at all	Rarely	Sometime	Often
1. I thought about it when I didn't mean to	24.8%	56.7%	14.4%	4%
2. I avoided letting myself get upset when I thought about it or was reminded of it	77.0%	16.4%	6.0%	.6%
3. I tried to remove it from memory	81.2%	14.4%	3.8%	.6%
4. I had trouble falling asleep	97.2%	2.0%	.8%	
5. I had waves of strong feeling about it	69.5%	16.4%	10.6%	3.4%
6. I had dreams about it	98.4%	1.0%	.6%	
7. I stayed away from reminders of it	93.8%	2.4%	2.4%	1.4%
8. I felt as if it hadn't happened or wasn't real	92.6%	4.2%	2.6%	.6%
9. I tried not to talk about it	84.6%	12.4%	2.8%	.2%
10. Pictures about it popped into my mind	45.5%	43.9%	9.0%	1.6%
11. Other things kept making me think about it	87%	8.6%	4.2%	.2%
12. I was aware I still had a lot of feelings about it but didn't deal with them	84.6%	10.2%	4.2%	1%
13. I tried not to think about it	78.6%	17.8%	3.4%	.2%
14. Any reminder brought back feelings about it	93.4%	4.6%	1.8%	.2%
15. My feelings about it were kind of numb	94.6%	3.8%	1.2%	.4%

For the sample as a whole, the average score on the IES for first time mothers was around 5 ($\bar{X}$ = 5.54, σ = 7.88) while the average score for multiparous women was around 4 ($\bar{X}$ = 4.33, σ = 7.03). There were no statistically significant differences between the level of trauma symptoms reported by nulliparous and multiparous women (F (1) = 3.03, $\underline{p}$ >0.05).

Over thirty percent of women (33.5%, n = 167) had a lasting stressful memory of birthing and reported experiencing three or more trauma symptoms as described on the IES ($\bar{X}$ = 4.91, σ = 7.47, range = 0 - 51). This group constituted a sub-sample of women with acute trauma symptoms. This sub-sample of women then completed the Posttraumatic Symptom Scale (PSS). The results of PSS are reported in the following section.

In summary, two out of three women (n = 311 out of 499) reported some aspect of labour and delivery as stressful. There was a high incidence of trauma

symptoms following childbirth with one out of three women (33.4%, n = 167 out of 499) reporting at least three trauma symptoms on the IES. Although it would be reasonable to expect new mothers to express more distress after delivery than multiparous women, this was not the case. Both nulliparous and multiparous women were just as likely to perceive birthing events as stressful.

Incidence of acute PTSD

The incidence of acute PTSD was determined using the *DSM-IV* criteria (APA, 1994). Briefly stated, the criteria require that a person has experienced an event during which they were confronted with threatened death or serious injury, or a threat to the physical integrity of self or others. The person's response involved intense fear, helplessness or horror (criterion A). The person also reports at least one re-experiencing symptom (criterion B), three avoidance symptoms (criterion C), and two arousal symptoms (criterion D), and these symptoms need to be present for more than one month (criterion E) and cause significant distress (criterion F).

The sub-sample of women with acute trauma symptoms (n = 167 out of 499) completed the Posttraumatic Symptom Scale (PSS) during Phase 2. Twenty-eight (28) of these women met the diagnostic criteria for acute PTSD. This represents a 5.6% incidence of women who reported a symptom profile to warrant a diagnosis of acute PTSD. A further 22.6% of women (n = 113) reported some, but not the minimum of six trauma symptoms (in the appropriate category distribution of re-experiencing, avoidance and arousal symptoms) required to meet the diagnostic criteria for PTSD. These women were classified as having subclinical PTSD. 'Subclinical' PTSD refers to the presence of diagnostic symptoms, but the full clinical picture is incomplete (Bryant & Harvey, 1997; Walter et al., 1998). Twelve (12) women met all categories but for one symptom. For example, a woman may have reported one re-experiencing symptom, three avoidance symptoms but only one arousal symptom instead of two. Twenty-nine (29) women met all categories but for two symptoms. For the remainder of the

sample, eighteen women (18) reported four PTSD symptoms, and fifty-five women (55) reported three trauma symptoms on the PSS. The responses for each item on the PSS are outlined in Table 6.3.

When completing the PSS, the majority of participants from the acute trauma group (82.2%) reported having intrusive thoughts about the birth, and feeling emotionally upset when thinking about the birth (57.9%). Many women (67.7%) tried to avoid thoughts and feelings associated with the birth, while some women (29.9%) avoided places or activities associated with the trauma. For example, many women stated that they would not or could not go back to the hospital. Furthermore, some women (31.1%) also reported intense physical reactions when reminded of the trauma in the postpartum period. For example, some women described 'breaking into a cold sweat when driving near the hospital'.

Table 6:3: PSS responses during Phase 2

PSS Item	Not at all	Once a week	2 – 4 times a week	Almost always
Re-experiencing symptoms				
Intrusive thoughts	17.7%	37.2%	28%	17%
Recurrent dreams	95.7%	1.2%	2.4%	.6%
Suddenly reliving the event	95.7%	3.0%	1.2%	-
Emotionally upset	42.1	21.3%	20.1%	16.5%
Avoidance symptoms				
Avoids thoughts and feelings	32.3%	46.3%	20.7%	.6%
Avoids places and activities	70.1%	19.5%	7.9%	2.4%
Can not remember aspects	86.0%	11.0%	2.4%	.6%
Lost interest	97.6%	1.8%	.6%	-
Felt detached	90.2%	9.1%	.6%	-
Experience emotion less	91.5%	7.3%	1.2%	-
Future plans changed	62.8%	27.4%	8.5%	1.2%
Arousal symptoms				
Difficulty sleeping	97.0%	2.4%	.6%	-
Continuously Irritable	84.1%	12.2%	3.7%	-
Difficulty concentrating	93.9%	5.5%	.6%	-
Overly alert	98.9%	1.2%	-	-
Jumpier, startled easily	97.6%	2.4%	-	-
Intense physical reactions	68.9%	26.2%	3.7%	1.2%

The prevalence rate of women who showed sufficient signs of the disorder to warrant a diagnosis of acute PTSD (5.6%, n = 28 out of 499) in this study falls within the range of 1% to 14% reported in community-based studies for PTSD

(APA, 1994). This prevalence rate is also similar to the 6% incidence of PTSD reported in the U.K. based study by Menage (1993) that explored gynaecological and obstetric events. There is a discrepancy however, between the incidence of acute PTSD in the present study and the 1.7% incidence for Swedish women reported by Wijma et al. (1997). Possible reasons for the discrepancy will be discussed in Chapter 7.

Factors contributing to acute trauma symptoms

The second purpose of this study was to identify possible contributing factors of acute trauma symptoms. The following analyses explore the influence of antenatal variables, obstetric interventions, and perception of care on the development of acute trauma reactions in the postpartum period.

Antenatal factors and acute trauma symptoms

A series of simple regressions were undertaken in order to determine any associations between antenatal variables and the development of birthing trauma (as measured by the IES). The results of this analysis are presented in Table 6.4). It is concluded that all six antenatal variables under investigation (preparedness, likelihood of unexpected events, anticipatory anxiety, level of partner support, obstetric risk, and state anxiety) did not have a significant statistical impact on the subsequent development of acute trauma responses. Therefore, the first hypothesis that antenatal factors influence the development of acute trauma symptoms is rejected.

Table 6:4: Regression of antenatal factors on Impact of Events Scale

Antenatal variable	Std Error	β	*T*	Sig *t*
Preparedness	.364	-.026	-.556	.578
Unexpected events	.379	.047	.990	.322
Anticipatory anxiety	.313	.054	1.096	.274
Partner support	.363	-.016	-.331	.741
Obstetric risk	.367	.047	1.645	.101
STAI-S	.035	.053	1.032	.303

Obstetric intervention and acute trauma symptoms

All obstetric events (including procedures, analgesia, and complications) surveyed in the present study were entered in a stepwise multiple regression with the level of trauma symptoms (as measured on the IES) as the dependent variable. This calculation is termed the obstetric impact score. The empirically derived obstetric impact score for this population resulted in a range of scores from 2.96 to 22.16 ($\overline{X}$ = 4.9, σ = 2.6). Of these obstetric events, five factors were found to be consistently associated with the development of acute trauma symptoms and are outlined in Table 6.5. These factors are:

1. Emergency Caesarean section,
2. Forceps delivery,
3. Post-delivery pain (as measured by length of time required for analgesia in the postpartum period)
4. Vacuum extraction, and
5. Diagnosis for the baby - (indicating the diagnosis of a congenital condition or some other medical complication on delivery).

Table 6:5: Association between birthing procedures and stress

Obstetric factor	Standardised Coefficients		
	β	*T*	Significance
Emergency Caesarean section	.196	4.505	.0001
Forceps delivery	.173	4.043	.0001
Post-delivery pain	.164	3.771	.0001
Vacuum delivery	.135	3.102	.002
Diagnosis (baby)	.097	2.264	.024

As outlined in Table 6.5 three of the five factors were statistically significant with the development of acute trauma symptoms at the $\underline{p} < .0001$ level. The other two factors, vacuum delivery ($\underline{p} < .002$) and complications associated with the well being of the baby ($\underline{p} < .05$), were somewhat less consistent than the other three factors, but remained statistically significant. These five events accounted for

approximately 12% (r^2 = .123) of the variability in development of acute trauma symptoms following childbirth found in this sample.

Earlier research by Paykel et al. (1980), Elliott et al. (1984), and O'Hara, (1986) had used cumulative intervention scores as the basis for dismissing an association between obstetric intervention and depression. Based on the strength of the association between mode of delivery and trauma found in the present study, it could be argued that the calculation of obstetric intervention in earlier studies was not sensitive to the crucial impact of delivery mode on psychological wellbeing. For example, a woman with a high obstetric intervention score as the result of an elective Caesarean section may not necessarily become stressed and develop depressive symptoms following delivery.

The obstetric impact score appears to have a number of advantages over the use of a 'standardised' formula (e.g., Elliott et al., 1984) reported in earlier studies. The empirical approach employed in this study identified five key obstetric events that were strongly associated with the development of trauma symptoms for birthing women. The obstetric impact score is meaningful from a woman's perspective as it represents the salience of a particular birthing event as traumatic. Secondly, the identified events are likely to be markers for a range of other obstetric interventions. For example, an emergency Caesarean section is the culmination of a long and possibly stressful labour during which monitoring may have detected maternal or fetal distress. The labour may have involved the insertion of a catheter and intravenous line; epidural or general anaesthesia would have been administered; and resulted in a large abdominal wound and post-operative analgesia. Thirdly, the five key obstetric events appear to be consistent with one another. For example, initial medical concern for the wellbeing of baby may be the prompt for the emergency procedure or result from delivery (for example, subgaleal haemorrhage as a result of vacuum extraction). Similarly, the need for postoperative analgesia is likely to be a direct result of physical injury incurred during the emergency procedure. Therefore, given the

association of the identified events to acute trauma symptoms, any further analysis of the data involving obstetric events utilised the calculated obstetric impact score only.

To determine the contribution obstetric interventions to the development of acute trauma reactions during the postpartum period, a simple regression analysis was undertaken. A consistent relationship between the obstetric impact score and acute trauma reactions was identified ($\beta = .351$, $t = 8.353$, $p < .0001$, $R = .351$, $R^2 = .121$). These results indicate that the higher the level of obstetric intervention during labour and delivery the greater incidence of acute trauma reactions in the postpartum period. The Beta weight of .351 indicates that obstetric intervention is an important predictor of acute trauma symptoms. Therefore the second hypothesis, that increased obstetric intervention during labour and delivery is positively related to the development of trauma symptoms is accepted.

To facilitate a more detailed analysis of the data, participants were categorised according to their reported level of trauma symptomatology and examined in relation to mode of delivery. That is, women who met acute PTSD criteria (n = 28) were distinguished from women who reported acute trauma responses (n = 139), and those women who did not report trauma reactions (n = 332) after delivery. The crosstabulated data of mode of delivery by level of trauma is presented in Table 6.6.

The analysis reveals a significant relationship between the mode of delivery and the development of trauma symptoms (χ^2 (8) = 47.206, $p < .0001$). Women who did not report trauma symptoms were more likely to have a spontaneous delivery than expected while fewer women in the PTSD group delivered by this mode. More women who developed acute trauma symptoms or acute PTSD had a forceps delivery than women in the non-trauma group. More women who developed acute trauma symptoms and acute PTSD had a forceps, vacuum delivery or emergency Caesarean section than expected.

Table 6:6: Mode of delivery by level of trauma symptoms

			Participants		
			Not traumatized	Acute Trauma	Acute PTSD
Mode	Spontaneous	Count	252.0	68.0	9.0
		Expected	230.6	79.0	19.4
	Vacuum	Count	19.0	10.0	3.0
		Expected	22.4	7.7	1.9
	Forceps	Count	5.0	7.0	5.0
		Expected	11.9	4.1	1.0
	Elective Caesarean	Count	26.0	8.0	2.0
		Expected	25.2	8.6	2.1
	Emerg. Caesarean	Count	31.0	21.0	9.0
		Expected	42.8	14.6	3.6

There is consistent relationship between the use of emergency invasive obstetric delivery techniques and the subsequent development of acute PTSD. While an elective Caesarean delivery is also invasive, this procedure is not statistically associated with the same level of stress and anxiety that accompanies an emergency Caesarean section or the use of instruments during labour and delivery at a time of maternal and/or fetal distress.

Perception of care and acute trauma symptoms

The third hypothesis investigated the relationship between the perception of care and the development of acute trauma symptoms. A regression analysis identified a consistent negative relationship between the total scores on the Perception of Care Questionnaire and Impact of Events Scale (β = -.393, p <.0001). Women who ascribed low scores to their care during labour and delivery were more likely to report acute trauma symptoms during the postpartum period. The PCQ accounted for over 15% of variance (R^2 = .154) in the development of trauma symptoms in this sample. The Beta weight of -.393 indicates that perception of care is an important contributing factor to the development of trauma symptoms. This inverse relationship indicates that the lower the perception of care the higher

the risk of acute trauma symptoms. Therefore the third hypothesis that a woman's perception of the care received during labour and delivery would be inversely related to the development of trauma symptoms is accepted.

Dimensions of care and acute trauma symptoms

The four PCQ factors were then examined in relation to the level of trauma symptomatology (as measured by the IES) in a regression analysis. The results of this analysis are outlined in Table 6.7. Factor 1, which encompasses the technical and communication aspects of care, was strongly associated with the subsequent development of acute trauma symptoms (β = -.244, p <.0001). The inverse relationship reveals that the lower a woman rated the technical/ communication aspects of care, the more likely she was to report acute trauma symptoms. Factor 4 which relates to the partner response and opportunities to discuss the birth was also strongly associated with the subsequent development of acute trauma symptoms in an inverse relationship (β = -.186, p <.0001). If a woman perceived that her partner (or support person) did not want to discuss the birth or she lacked opportunities to talk about the birth then trauma symptoms were more likely to ensue. Both Factor 2 (emotional aspects of care) and Factor 3 (midwifery care) were not significant (p >.05) in the development of acute trauma symptoms.

Table 6:7 Regression of PCQ factors on the IES

PCQ factor	Standardised Coefficients		
	β	*T*	Significance
F1. Technical/communication	-.244	-4.601	.0001
F2. Emotional care	-.052	-1.065	.288
F3. Midwifery care	-.048	-.967	.334
F4. Partner response	-.186	-4.084	.0001

In summary, there is a consistent relationship between low perceived satisfaction with maternity care and the development of acute trauma symptoms. Women who experience traumatic birthing events were less likely to be satisfied with the

technical/ communication aspects of care, and perceive themselves to lack the support of partners and others in discussing the labour and delivery. The emotional aspects of care and the perception of midwifery care were not statistically associated with the development of acute trauma symptoms.

A proposed model of birthing trauma

The analysis of the data confirms a consistent relationship between the level of obstetric intervention and trauma symptoms. There is also a statistically significant inverse relationship between a woman's satisfaction with her care and the development of trauma symptoms. Research to date has not specifically investigated the relationship between obstetric intervention and intrapartum care in the development of trauma symptoms. To determine if the relationship between obstetric events and acute trauma reactions is mediated by perception of care a hierarchical regression was undertaken.

Baron and Kenny (1986) state that a variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the outcome. Specifically, Baron and Kenny suggest that for a variable to function as a mediator a number of conditions must be met. Firstly, variations in the independent variable must be associated with variations in the presumed mediator. Secondly, variations in the independent variable must be associated with variations in the dependent variable. Thirdly, variations in the presumed mediator must be associated with variations in the dependent variable. Finally, when the variance due to the presumed mediator is partialled out of the equation, there is no longer a significant relationship between the independent variable and the dependent variable.

In order to test the first condition variations in scores on the obstetric impact measure must be associated with variations in the presumed mediator, that is, perception of care. Examination of Table 6.8 indicates significant association between obstetric impact and perception of care (R^2 = .08, $\underline{p}$ <.0001). Therefore

variation in the PCQ is associated with the level of obstetric intervention during delivery.

Table 6:8: Regression analysis of obstetric impact and PCQ

Variable	B	Beta	T	Sig T
Obstetric impact	-1.369	-.282	-6.560	.0001
	R = .282			
	R^2 = .080			

The second condition requires that variations in obstetric impact must be associated with variations in the dependent variable, that is, the IES score. Table 6.9 outlines a significant association and between obstetric impact and acute trauma symptoms (R^2 = .123, $\underline{p}$ < .0001).

Table 6:9: Regression analysis of obstetric impact and IES

Variable	B	β	*T*	Sig *t*
Obstetric impact	1.000	.351	8.353	.0001
	R = .351			
	R^2 = .123			

The third condition requires that variations in the presumed mediator (PCQ) must be associated with variations in the dependent variable (IES). Table 6.10 demonstrates a significant association between perception of care and acute trauma (R^2 = .154, $\underline{p}$ < .0001).

Table 6:10: Regression analysis of PCQ and obstetric impact

Variable	B	β	*T*	Sig *t*
PCQ	-.188	-.319	-7.709	.0001
	R = .393			
	R^2 = .154			

In order to test the final condition of mediation - that when the variance due to the presumed mediator is controlled for statistically, there is no longer a significant

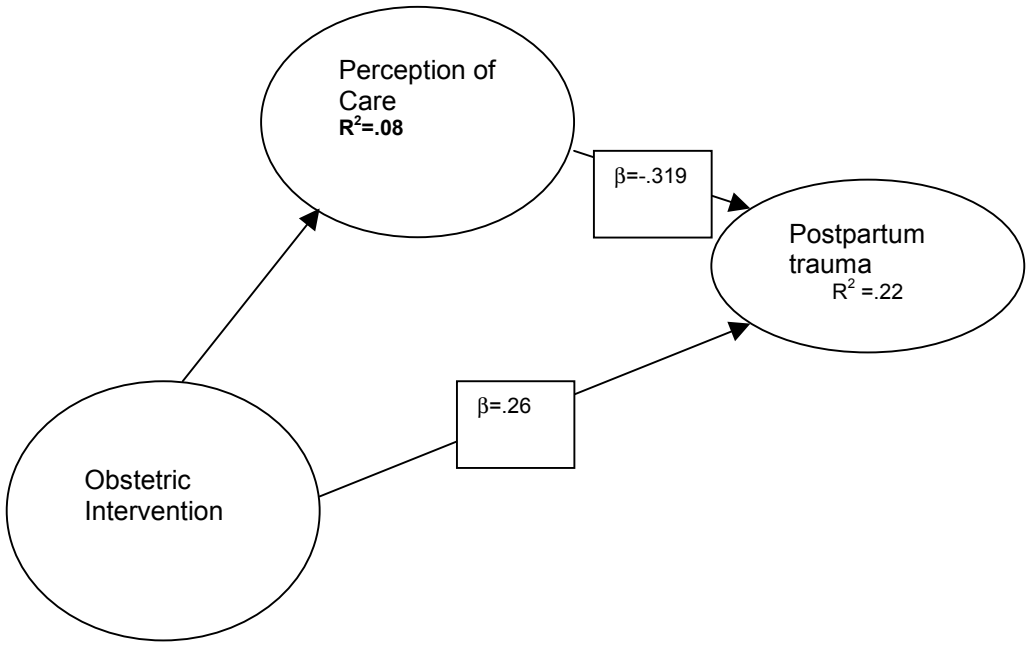
relation between the independent variable and the dependent variable, a hierarchical multiple regression analysis was undertaken. As outlined in Table 6.11 the impact of obstetric events adds nearly 6% of the variance (R^2 = .063, p < .0001). Therefore this model fails to meet the fourth criterion for mediation and perception of care can be seen as having an additive effect rather than acting as a mediator of acute trauma symptoms following childbirth and the fourth hypothesis is rejected.

Table 6:11: Hierarchical Regression with PCQ and obstetric impact

Variable	B	β	*T*	R^2	R^2 change	Sig *t*
PCQ	-.188	-.319	-7.709	.154	.154	.0001
Obstetric impact	.743	.261	6.296	.217	.063	.0001

Although the relationship between obstetric events and acute trauma reactions is not statistically mediated by perception of care, this factor has an additive effect to the development of acute trauma symptoms in the postpartum period (see Figure 2).

Figure 2: Contributing factors to birthing trauma



The model identifies a direct contribution of stressful obstetric events to the development of trauma symptoms following childbirth. The model also identifies a direct contribution of the quality of care to the development of trauma symptoms following childbirth. If a woman experiences stressful obstetric events and poor postpartum care, she is more likely to report acute trauma symptoms than if she had experienced the stressful obstetric events only.

An examination of the Beta weights indicate that while obstetric intervention (β = .26) contributes to the development of trauma symptoms, when a woman receives a high level of obstetric intervention and poor maternity care, the risk of trauma reactions increases (β = .319). Furthermore, as a measure for how well the model fits the data, the amount of variance accounted for increases (R^2 = .22) with the inclusion of the care factor. The model accounts for 22% of the total sample variance in the prediction of acute trauma symptoms following childbirth. This would constitute a medium effect (Cohen, 1977) in the prediction of trauma symptoms.

Incidence of chronic PTSD symptoms following childbirth

The third purpose of this study was to determine the incidence of chronic trauma symptoms and chronic PTSD in birthing women. The sub-sample of women who reported acute trauma symptoms during Phase 2 were interviewed again three to four months after delivery (Phase 3). At this time the PCQ, IES and PSS were repeated. The presence of chronic trauma symptoms (as determined by the repeated IES measure) are reported below while changes in the PCQ and PSS scores will be reported in later sections.

A repeated measure analysis of variance revealed a significant reduction in trauma symptoms between Phase 2 and Phase 3 ($F(1, 140) = 151.77$, $\underline{p} < .0001$) for the sub-set of women who reported acute trauma symptoms. During Phase 2 the average score on the IES was around 12 ($\bar{X}$ = 12.63, σ = 9.45) and

by Phase 3 the average score dropped to around 4 ($\bar{X}$ = 4.43, σ = 3.32). This reveals a dramatic overall decrease in the presence of trauma symptoms for these women three to four months after delivery.

A closer examination of the types of trauma symptoms reveals a decrease in both intrusion and avoidance symptomatology four months after labour and delivery. Table 6.12 outlines the mean factor scores on the IES for Phase 2 and Phase 3.

Table 6:12: IES factor scores over time

	Participants	
	Stress response	PTSD response
Phase 2 IES Intrusion	5.78 (σ = 3.90)	12.67 (σ = 4.88)
Phase 3 IES Intrusion	2.85 (σ = 1.92)	4.33 (σ = 1.79)
Phase 2 IES Avoidance	3.92 (σ = 3.94)	12.33 (σ = 5.88)
Phase 3 IES Avoidance	.99 (σ = 1.55)	2.59 (σ = 2.08)

The reduction in trauma symptoms was most evident for women who met acute PTSD criteria one month after delivery. Despite the overall decrease, trauma symptoms were still present in that 82% (n = 116 out of 141) of women reported two or more intrusive trauma symptoms and 32.6% (n = 46 out of 141) of women reported two or more avoidance symptoms.

During the three to four month follow-up period, twenty-two women (15.6%, n = 22 out of 141) reported symptoms in the subclinical range for chronic PTSD. That is, they met all *DSM-IV* criteria but for one or two symptoms. Three women (n = 3 out of 141) continued to report a range of symptoms that would warrant a diagnosis of chronic PTSD. The experiences of these three women will be briefly described below in a case study format. Pseudonyms are used to protect the identities of the women.

The case of Benita

Benita is married and has twins from a previous pregnancy. The twins were delivered by Caesarean section but a vaginal delivery was planned for this confinement. Benita reported feeling well prepared for the birth, and was not anxious (STAI score = 33 [low range]). Labour commenced spontaneously, admission occurred at 4 pm, ARM was performed, and by 10pm, Benita was fully dilated but unable to deliver. Benita coped with labour pain with nitrous oxide gas. The stressful event reported by Benita involved the experience of intense pain when the doctor made three attempts to obtain a fetal scalp blood sample from the baby. It was the midwife who requested that the medical officer desist. After being fully dilated for 4 hours, fetal distress was assessed and the decision made for an emergency Caesarean section with epidural anaesthesia (obstetric impact score = 7.1[moderate range]). Benita reported feeling unable to hold the baby until the next day. During recovery Benita complained of severe post-operative pain and received pethidine for two days. On one occasion however, a midwife refused to administer the drug and stated that she did not want Benita to "become addicted". Panadeine was taken for seven days. Benita "signed herself out" of hospital after three days and reported being "bitterly disappointed that I didn't have a natural delivery." She reported feeling distressed in hospital and said, "they [hospital staff] should have got someone to talk to me" (PCQ = 67 [low range], IES = 25 [high range]). Benita was subsequently diagnosed with postnatal depression by her general practitioner.

The case of Mandy

Mandy is married and has two children. Mandy felt confident about childbirth and did not report overt anxiety (STAI = 43 [average range]). Labour had commenced at 38 weeks gestation but did not progress, and she was discharged home. At 40 weeks gestation labour commence spontaneously and ARM was conducted when Mandy was 6cm dilated. Pain-relieving drugs were not required during the labour. After three hours of second stage, Mandy was delivered via vacuum

extraction which she described as “extreme agony” and “felt like I was being ripped apart” (obstetric impact score = 6.6 [moderate range]). Mandy described her fear and said, “I knew that the baby would not fit but the doctor said it was okay”. Mandy felt unable to hold the baby after delivery until she had “pulled herself together”. Immediate postpartum recovery was uneventful and she requested discharge the next day as she “had to get out of there”. Mandy expressed anger at staff for ignoring her opinion (PCQ = 54 [low range]). Thoughts of the birth were intrusive and Mandy said, “I just had to block it out and stop thinking about it” (IES = 51 [high range]). Mandy was subsequently diagnosed with postnatal depression by her general practitioner.

The case of Lea

Lea was nulliparous and felt very well prepared for labour but expressed some anxiety about her hypertension (STAI = 55 [above average range]). Labour was induced and augmented by ARM and Lea delivered after six hours. Pethidine was given during labour (obstetric impact score = 3.9 [low range]). The cord was around the baby’s neck resulting in cyanosis and absence of respirations on delivery. Lea thought the baby “was going to die”. The baby was successfully resuscitated. Subsequently, a heart murmur was diagnosed. Lea requested to be discharged from hospital on day 2. She was pleased with the care provided by the doctor who identified early signs of fetal distress and arranged for a paediatrician to stand by. Lea attributes the doctor with saving the baby’s life (PCQ = 93 [high range]). Lea becomes distressed at the thought of the baby nearly dying, has not been back to the hospital, and does not want to have anymore children (IES = 19 [high range]).

There are several commonalties across the three case studies. All women experienced obstetric intervention during delivery. While all women experienced a range of obstetric interventions, two of the women experienced a high level of intervention. Although each woman was delivered by a different mode, the events surrounding the deliveries were marked by a sense of fear, loss, and pain

at a physical and emotional level. Benita was “bitterly disappointed” that she did not have a normal birth, Mandy experienced excruciating pain as her baby was extracted from her, and Lea was fearful of a catastrophic outcome for her baby. While Benita and Mandy were critical of the intrapartum care they received, Lea rated the technical component of care highly in saving the life of her baby, but was also traumatized by the experience. The women reported that their distress was evident immediately after delivery and was not addressed by staff. All women acted to leave hospital (the site of the trauma) as soon as possible, well below the average length of hospital stay.

Two of the women were diagnosed with depression in the postpartum by their general practitioner. Rather than representing a pathological response, however, depressed feelings could be viewed as a normal consequence of unresolved emotions (such as anger, guilt or grief) about aspects of the birth. Kendall-Tackett and Kaufman-Kantor (1993) suggest that women who have not processed their trauma may manifest such symptoms as depression, blunted affect, helplessness and somatic complaints. They also suggest that the lack of social support may play a part in the persistence of trauma symptoms.

Factors contributing to chronic trauma symptoms

The fourth purpose of this study was to identify contributing factors of chronic trauma symptoms. This included an analysis of (1) antenatal variables, (2) obstetric events, and (3) the perception of care.

Antenatal factors

In constructing an understanding of the factors that may contribute to the development of chronic trauma symptoms, the antenatal variables under investigation were entered in a multiple regression analysis with IES total (Phase 3) as the dependent variable. The results are reported in Table 6.13.

Table 6:13: Regression of antenatal variables on IES - Phase 3

Antenatal variable	Std Error	β	*T*	Sig *t*
Preparedness	-.797	-.191	-2.218	.028*
Unexpected events	.315	.092	1.038	.301
Anticipatory anxiety	.278	-.027	-.292	.771
Partner support	.259	-.009	-.101	.920
Obstetric risk	.277	.007	.074	.942
STAI-S	.027	-.115	1.203	.221

*p < .05

The analysis indicates that five of the antenatal variables under investigation (likelihood of unexpected events, anticipatory anxiety, level of partner support, obstetric risk, and state anxiety) did not have a significant statistical impact on the subsequent development of chronic trauma responses. Level of preparedness for labour and delivery was found to be statistically associated with the development of chronic trauma symptoms (β -.191, p <.03). Therefore, the hypothesis that the level of preparedness in the antenatal period is associated with the development of chronic trauma symptoms is accepted. A closer examination of this finding was undertaken by using a crosstabs analysis. It was found that fewer women in the trauma group reported being "very well prepared" for childbirth (χ^2 (4) = 13.231, p < .01) than women from the non-traumatised group. The women from the trauma group tended to report that they were "satisfied" with their preparation for labour and delivery rather than "very well prepared".

Obstetric events

A regression analysis was also undertaken to determine the contribution of the significant obstetric events in the development of chronic trauma symptoms. The results of this analysis are outlined in Table 6.14 and indicate that none of the factors under investigation were statistically associated with the development of chronic trauma symptoms (F (5) = 1.097, R = .378, R^2 = .143, p >.05). The experience of an emergency Caesarean, forceps or vacuum delivery, the level of postpartum pain, or concern for the baby were not predictive of chronic trauma

symptoms. The hypothesis that increased obstetric intervention during labour and delivery is positively associated to the development of chronic symptoms is rejected.

Table 6:14 : Regression of obstetric events on IES - Phase 3

Obstetric factor	Standardised Coefficients		
	β	*T*	Significance
Emergency Caesarean section	-.296	-1.532	.135
Forceps delivery	.160	.982	.333
Post-delivery pain	.122	.666	.510
Vacuum delivery	.091	.563	.577
Diagnosis (baby)	-104	-.615	.543

Perception of care

There was marked drop in satisfaction with care (as measured by the PCQ) over time for women who reported trauma symptoms (n = 164). During Phase 2 the average PCQ score for this group was around 76 ($\overline{X}$ = 76.54, σ = 13.8) and at Phase 3 the average score was around 58 ($\overline{X}$ = 58.52, σ = 25.18). A regression analysis of the Phase 3 PCQ factor scores on the level of chronic trauma symptoms (as measured by the repeated IES) was conducted. A consistent relationship between the perception of care and chronic trauma symptoms (F (4, 136) = 15.164, R = .555, R^2 = .308, $\underline{p}$ <.0001) was identified. Therefore, the hypothesis that a woman's perception of the care received during labour and delivery would be negatively related to the development of chronic trauma symptoms is accepted. The results of this analysis are presented in Table 6.15.

Table 6:15: Regression of PCQ factors on IES - Phase 3

PCQ factor	Standardised Coefficients		
	β	*T*	Significance
F1. Technical/communication	.862	3.775	.0001**
F2. Emotional care	.296	1.408	.161
F3. Midwifery care	-.227	-1.696	.092
F4. Partner response	-.497	-2.399	.018*

*$\underline{p}$ < .05
**$\underline{p}$ < .0001

Table 6.15 indicates that PCQ Factor 1 (the technical / communication aspects of care) was consistently associated with the development of chronic trauma symptoms (β = .328, p <.0001). PCQ Factor 4 (partner response) was also statistically associated with the development of chronic trauma symptoms (β = -.298, p <.018). Factor 2 (emotional aspects of care) and Factor 3 (midwifery care) were not statistically associated with chronic trauma symptoms.

Childbirth and chronic trauma symptoms:

In order to better understand the interaction of the antenatal, obstetric, and care variables in the development of chronic trauma symptoms, a multiple regression analysis was undertaken. The only significant antenatal variable (preparedness) was entered, as were the obstetric impact score, and the PCQ total score as the independent variables. The Phase 3 IES total score was entered as the dependent variable. The results of this analysis are presented in Table 6.16.

Table 6:16: Predictors of chronic trauma symptoms

Variable	β	*T*	Significance
Preparation	-.161	-2.166	.032*
Obstetric intervention	.151	2.020	.045
Perception of care	.416	5.574	.0001**

*p < .05
**p < .0001

In relation to obstetric events and the perception of care, the woman's perception of her preparation for childbirth continued to be associated with the development of trauma symptoms (β = -.161, p <.05). Interestingly, the global rating of obstetric events (impact of events score) was statistically associated with chronic trauma symptoms (β = .151, p <.05). The woman's perception of care during labour and delivery continued to be strongly associated with the development of chronic trauma symptoms (β = .416, p <.0001). Overall, the relationship of these factors to the presence of chronic trauma symptoms was statistically significant (F (3, 137) = 14.808, R = .495, R^2 = .245, p <.0001) and accounted for 24.5% of the variance in predicting chronic trauma symptoms following childbirth.

Beta weights express all variables in a standardised (*z*-score) form. Variables are then comparable since they are the same unit of measure (Tabachnick & Fidell, 1989). In comparison to the beta weight for the perception of care (β = .416), the beta weights for preparedness (β = .161) and obstetric intervention (β = .151) are less than half its value and represent a very weak association with the development of chronic trauma symptoms.

Conclusion

This study has identified that childbirth is a traumatic event for some women. One in three women (33.4%) described some aspect of childbirth as stressful and reported at least three trauma symptoms in the postpartum period. The extent of the trauma was severe in some cases with 5.6% of participants meeting the criteria for acute PTSD.

This study also found that the antenatal factors under investigation bore little influence on the subsequent development of acute trauma reactions in the postpartum period. There was a strong relationship between the level of obstetric technology used during labour and delivery and the development of acute trauma symptoms. Similarly, there was a strong relationship between the perceived quality of maternity care and the development of acute trauma symptoms.

The relationship between the experience of obstetric intervention and the development of acute trauma symptoms in childbearing women was not mediated by satisfaction with intrapartum care. The perception of care had an additive effect on the development of trauma symptoms. The experience of a high level of obstetric intervention and dissatisfaction with care accounted for 22% of the variance in the development of acute trauma symptoms.

While there was a marked reduction in level of trauma symptoms for women some three to four months after delivery, three women continued to experience a range of trauma symptoms and met the diagnostic criteria for chronic PTSD. A proportion of the women (15.6%) reported a lessening of their symptoms but could still be included in the subclinical chronic PTSD category. Several factors were found to contribute to the development of chronic trauma symptoms. While the level of preparedness for childbirth ($\underline{p} < .05$) and level of obstetric intervention ($p < .05$) had a weak effect, dissatisfaction with care was strongly associated with the development of chronic trauma symptoms ($\underline{p} < .0001$).

CHAPTER 7

Discussion

This prospective, multi-phase study of a large representative cohort of birthing women found that giving birth is more stressful than previously reported, and in some cases contributed to the development of acute PTSD. While the incidence of acute trauma symptoms decreased over time, some women continued to report chronic PTSD symptoms three to four months after delivery. This study found that some women perceived childbirth as a distressing event that involved intense pain and fear. The experience of obstetric intervention and dissatisfaction with care were identified as significant contributors to the development of acute trauma symptoms. A woman's perception of her intrapartum care was also identified as the most significant contributing factor in the development of chronic trauma symptoms.

This study has methodological strengths that have improved on those used in prior research in the field. Firstly, this study was grounded on the experiences of birthing women that enhanced the validity of the research. Secondly, the prospective design allowed for a fuller and more accurate examination of the contribution of antenatal factors to the development of trauma symptoms following childbirth and has avoided the inherent assumptions of retrospective attribution of anxiety and obstetric risk during pregnancy to adverse outcomes. Thirdly, the study population was adequately representative of the age, marital status, and ethnicity of the childbearing population in Queensland, the state in which the study was conducted. Sample size permitted a range of statistical analyses with sufficient power. The sample comprised both nulliparous and multiparous women who had minimal obstetric risk for childbirth complications. Data analysis was conducted on both the sample as a whole and the two sub-groups individually. Overall the similarities were far more striking than the differences. Fourthly, most of the research data were gathered during telephone

interviews using standardised, psychometric instruments that allowed for both replication and comparisons to be drawn with the general population of women. Finally, adherence to a standard timeframe enabled the incidence of acute and chronic trauma reactions in childbearing women to be determined according to *DSM-IV* criteria.

This chapter will discuss the outcomes of the study and the factors found to contribute to the development of acute and chronic trauma symptoms. The findings will be examined in relation to contemporary literature on childbirth and trauma. Limitations of the study and the implications for future research will also be discussed.

Incidence of acute trauma symptoms and acute PTSD

The first purpose of the study was to determine the incidence and severity of acute trauma reactions and acute PTSD in women following childbirth. Around 33% of women identified a stressful birthing event and reported at least three trauma symptoms four weeks after delivery. This study has also identified a 5.6% incidence of acute PTSD following childbirth in a large representative sample of women. This rate is similar to the 6% incidence of PTSD reported by Menage (1993) but exceeds the 1.7% reported in the cross-sectional study of Swedish women by Wijma et al. (1997).

While it may be possible to attribute this discrepancy to different birthing practices in the two countries, Wagner (1994a) indicates that Sweden has a highly developed health care system with nearly all births occurring in hospital. It is more likely that the discrepancy is due to three differences in the data collection procedures used by Wijma et al. (1997) and the present study. Firstly, there was a discrepancy in the timeframe used for data collection in the two studies. Many acute trauma symptoms are reported to diminish by three months in the general PTSD literature (e.g., Olasov-Rothbaum & Foa, 1993) and this

trend is confirmed by the results of the present study. Given the extended timeframe in the Wijma et al. (1997) study, the trauma experienced by many Swedish participants may have resolved prior to completion of the survey. Secondly, it is possible that respondents did not clearly understand the survey questions in relation to trauma symptoms. As a result, respondents may have indicated no symptoms. Thirdly, women who were experiencing distress may not have participated in the postal survey. These three factors may have contributed to the low reported incidence of PTSD by Wijma et al. (1997). This discrepancy does however, highlight the need to: employ standardised measures and timeframes in the identification of trauma reactions following childbirth; be mindful of different routine birthing practices in various countries; and employ data collection strategies that enhance participation and reduce attrition.

The diagnostic classification of PTSD has been important in providing a common language for the scientific community. Although it is helpful to classify people into those with and without trauma responses, the present study found that women experience a range of trauma reactions following childbirth. The present study identified a 22.6% rate of subclinical acute PTSD symptomatology reported by participants. No other reviewed study has commented on the proportion of women who were distressed but did not meet all *DSM-IV* criteria. Menage (1993) does not report on subclinical symptomatology, nor does the study by Wijma et al. (1997). Both studies categorised women into 'PTSD' or 'non-PTSD' groupings. This categorical approach does not acknowledge the high level of distress suffered by women experiencing trauma symptoms. In the present study over one third of women experienced three or more different trauma symptoms in the postpartum period.

Norris (1992), in an epidemiological study, noted that the rates of PTSD would double if the avoidance criterion was to use a cut-off of two symptoms rather than three. This line of thinking supports the approach adopted in the present study in explicating the presence of different trauma symptoms. Providing descriptions of

the number and type of trauma symptoms is perhaps a more accurate indicator of the presence and debilitating effects of traumatic birth experiences for women. Re-experiencing (or intrusive) symptoms may affect a woman's ability to adapt to the changing demands of motherhood and her relationships with others. Continuing intrusive symptoms can lead to impaired decision-making and sense of well-being (Horowitz, 1986). Continuing avoidance symptoms can be a defensive strategy to contain the distress generated by the recurring memories of the trauma (McFarlane, 1992). Women may avoid the site (and possibly the perpetrator) of the trauma in an attempt to not expose themselves to further distress. The experience of avoidance symptoms may also impair a new mother's ability to talk about and process the trauma, lead to social isolation, and importantly, hamper her access to appropriate health services and support. Continuing arousal symptoms may also contribute to the development of sleep difficulties, somatic complaints, and hypervigilance in relation to the care of the new infant.

A critical issue in the diagnosis of acute PTSD is the stressor criterion (Davidson & Foa, 1993). *DSM-IV* provides examples of different stressors, but also states that "other trauma" might qualify as legitimate stressors if they involve actual or threatened death or serious injury, or a threat to the physical integrity of self or others. Some researchers may not view childbirth as a legitimate stressor criterion for PTSD (e.g., Moleman et al. 1992). However, previous research (Wijma et al., 1997; Ballard, et al., 1995; Menage, 1993), and the findings of this study identified events during which women perceived their lives, or that of their babies to be threaten, experienced intense physical pain, and psychological trauma.

Childbirth is a time of great uncertainty and vulnerability. The shock of some childbirth events may precipitate severe psychological sequelae in women. The incidence and severity of trauma symptoms identified in the present study is of grave concern, particularly, as some staff may not identify the presence of

trauma symptoms. Traumatized women may experience emotional numbing and dissociation as a result of the delivery that hinders their ability to engage with the baby. Peta, in the pilot study, stated that she felt like a 'zombie' and that this feeling lasted for several days. Alternatively, women may experience intense emotions that result in feelings of uncontrollable anxiety and an inability to make sense of what had happened. One woman (Beth) said, "I cried all night" and Mandy said, "I had to try and pull myself together." In the acute trauma stage, the woman's concept of reality may be profoundly altered. Accordingly, staff should provide numerous opportunities to discuss the birth and try to bring structure to the experiences of the woman in an adaptive, reality–oriented manner. Miller (1998) suggests that this can be done by following the narrative of the woman and labeling emotions as they are expressed. As the woman begins to understand the sequence of events during labour and delivery, and makes sense of her feelings, she may be able to recapture a sense of fundamental safety and control.

In summary, acute trauma symptomatology as a result of childbirth is clearly an under-recognised phenomenon. In contrast to previous research, the present study adhered to *DSM-IV* criteria in the identification of acute trauma symptomatology and acute PTSD. The findings of the pilot study and the outcomes of this major study have shown that events during childbirth are traumatic and result in PTSD symptoms. The characteristics of these events will be further explored in the sections on obstetric events and care.

Contributing factors to acute trauma symptoms

The second purpose of this study was to identify factors that may contribute to the development of acute trauma symptoms following childbirth. In the first instance the contribution of a number of antenatal variables was investigated. These variables included preparation for childbirth, partner support, obstetric risk, likelihood of birth complications, anticipatory anxiety, and state anxiety. These

variables were not statistically associated with the incidence of acute trauma symptoms. An overview of the antenatal variables will be discussed in relation to the relevant literature in the following sections.

Antenatal variables

None of the antenatal variables under investigation were found to be associated with the development of acute trauma symptoms. In general, the women in this study were informed about childbirth, satisfied with the level of partner support, had low obstetric risk, were not unduly anxious about childbirth, and did not manifest symptoms of clinical anxiety. It was concluded that these antenatal factors did not influence subsequent childbirth events.

This study found that during the antenatal period 76% of women reported being "satisfied" or "well prepared" for childbirth. While women actively sought antenatal information from a range of sources, little importance was placed on the provision of information by general practitioners and midwives. This is in contrast to the findings of other studies that found doctors and midwives to be the primary providers of information (e.g., Bucher et al., 1997). This finding is also interesting given women's access to their general practitioner on several occasions during the pregnancy, and contact with a midwife during every antenatal clinic visit. The findings of the present study revealed a reliance on informal rather formal sources of information with books (86.7%), family (74.8%) and friends (73.3%) being used. While level of education was found to influence the amount of information sought, women with higher education qualifications did not report being more prepared for labour and delivery. Women from non-English speaking cultures accessed fewer sources of information, but reported feeling as prepared as other women for childbirth.

The present study found no statistical association between obstetric risk and the development of acute trauma symptoms, yet research has emphasized the importance of identifying women whose antenatal medical status places them at

risk for birth complications (Lobel, 1994). The most frequently reported obstetric event in the present study was miscarriage at a rate of 28.5%. This is comparable to rates reported in other studies of around 31% (Johnson & Puddifoot, 1996; Statham & Green, 1994; Wilcox et al. 1988). Numerous qualitative studies report that miscarriage for some women is a life crisis, one which significantly impacts on physical and long term psychological well-being, and impairs social relationships (Cecil & Leslie, 1993; Beil, 1992; McGrath et al., 1990; Lovell, 1983). One possible explanation for the non-significant result in the present study is that women were recruited during their last trimester of pregnancy, and at this time, would have been confident about the viability of the pregnancy.

Over half of the women (56.6%) "agreed" or "strongly agreed" that they felt anxious about the birth. There were no differences, however, between nulliparous and multiparous women on levels of antenatal anxiety (F (1, 598) = 2.642, p >.05). While there was a consistent negative relationship between level of preparedness and anxiety (χ^2 (16) = 57.131, p <.0001), this was not related to the amount of information sought. This finding supports the conclusions of Astbury (1980) who reported that anticipatory anxiety is a normal feature of late pregnancy and is not readily modified by the provision of information.

Neither anticipatory anxiety about the birth or the anticipation of birthing complications was predictive of acute trauma symptoms. The perceived satisfaction with partner support during pregnancy in this study may have helped allay women's anxieties. Several reports have identified a positive association between mothers' psychological well-being and the level of emotional support provided by their partners, or conversely between mothers' mental distress and lack of support (Gjerdingen & Chaloner, 1994; Paykel et al., 1980). In line with earlier research, this study found that the level of anxiety was associated with partner support (χ^2 (16) = 61.748, p <.0001), in that if a woman felt supported, less anxiety was expressed. Norbeck and Anderson (1989) found that perceived

partner support and nurturance served to moderate specific anticipatory anxiety. From another perspective, Astbury (1986) asserts that pregnancy anxiety may indeed serve a positive function in preparing women for a major life transition and should perhaps be construed as adaptive rather than as pathological.

Increased state anxiety is a recognised feature of many pregnancies. The hypothesis has been advanced that a high degree of anxiety or depression at any point during pregnancy may be harmful and be correlated with obstetric complications (McDonald, Gynther, & Christakos, 1963; Crandon, 1979). The large proportion of participants in this sample did not manifest clinical anxiety in their last trimester of pregnancy. No differences in the level of state anxiety were found between nulliparous and multiparous women.

State anxiety was not statistically associated with the development of acute trauma symptoms. Furthermore, state anxiety was also not related to the level of obstetric intervention during labour and delivery. This finding contributes to the conclusions of other prospective studies that investigated the effects of state anxiety during pregnancy on labour and delivery complications (Chalmers, 1983; Norbeck & Anderson, 1989; Perkin et al., 1993). Perkin et al. (1993) concluded that while anxiety during pregnancy is undesirable, it is of little importance in the evolution of obstetric complications and subsequent birth trauma.

Obstetric intervention and acute trauma symptoms

The hypothesis that higher levels of obstetric intervention during labour and delivery are positively related to birth trauma was confirmed. The results of this study indicated that obstetric intervention is a strong predictor of acute trauma symptoms (β = .351, $\underline{p}$ <.0001). In particular, this study highlighted specific obstetric experiences that are potentially traumatic for women. Simply put, emergency Caesarean section (β = .196, $\underline{p}$ <.0001), forceps delivery (β = .176, $\underline{p}$ <.0001) and the extent of postpartum analgesia (β = .164, $\underline{p}$ <.0001) were

strongly correlated with the development of trauma. Vacuum extraction (β = .135, p <.002) and concern for the baby's life (β = .097, p <.024) were also significant but less consistent than the other three obstetric events. The following section examines the key variables in the development of acute trauma symptoms, and the implication of these interventions on the psychological wellbeing of birthing women.

Trauma and emergency Caesarean delivery

In contrast to other research (e.g. Wijma, et al., 1997), the present study is unique in its specific investigation of the relationship between the level and type of obstetric events and PTSD symptomatology. The experience of an emergency Caesarean section was found to be a strong contributing factor in the development of acute trauma symptoms (β = .176, p <.0001). One third of women (n = 9 out of 28) who later developed acute PTSD had an emergency Caesarean delivery.

An emergency Caesarean delivery usually occurred after a long, painful, and ineffective labour. Moreover, the decision to perform the surgery was usually determined by concern for the wellbeing of the woman and/or her baby. The experience of an emergency Caesarean as traumatic may be explained through an analysis of the four dynamics of a traumatic birth according to Kendall-Tackett and Kaufman-Kantor (1993). Firstly, as a result of an emergency Caesarean delivery some women may perceive themselves to have been physically "damaged" (e.g. Beth). Secondly, stigmatization occurred because the women felt different from others who delivered without surgical intervention (e.g. Lea). This sense of 'differentness' was not be acknowledged by health professionals and the woman was sometimes left alone to ponder her disappointment and belief that the delivery was not 'normal'. As the reality of the surgical delivery departs from expectations, a sense a betrayal develops.

Other authors suggest that the sense of betrayal may be particularly pertinent if the woman felt uninformed about procedures, was treated with disrespect, or felt 'betrayed' by her own body and/or others (Kitzinger, 1987; Wertz & Wertz, 1989). Finally, the sense of powerlessness and lack of control are viewed as the key dynamics in relation to psychological trauma (Kitzinger, 1987). During an emergency Caesarean section a woman has no choice but to totally succumb to the control of others (Affonso & Stichler, 1978).

The development of PTSD following a sequence of adverse birthing events is hardly surprising and extends our understanding of mothers' reactions to surgical delivery. In addition to the presence of acute trauma symptoms and acute PTSD found in the present study, other researchers have reported adverse emotional consequences such as low self esteem and depression following an emergency Caesarean delivery (Boyce & Todd, 1992; Cohen, 1977; Enkin, 1989; Fisher et al., 1997; Garel, Lelong, Kaminski, 1987). Extreme disappointment, a sense of inadequacy and failure, hostility towards medical and nursing staff and intense anxiety have also been observed amongst surgically delivered women (Cartwright & Murray, 1993; Fisher et al., 1997; Marut, 1978; Thune-Larsen & Moller-Pederson, 1988).

Furthermore, delivery by emergency Caesarean section may adversely affect mother-child interactions in the short and longer term. In a comparative, longitudinal study, Trowell (1982, 1983) found that women who delivered by an emergency Caesarean section had significantly less eye contact with their infants at one month postpartum than women who had a vaginal delivery. At one year postpartum the women who delivered by an emergency Caesarean reported more difficulties with their infants, expressed greater dissatisfaction and resentment of the demands on their time, and left their infants crying longer than other women. At 3 years postpartum, these women reported serious relationship difficulties with their children.

Clearly, women who have an emergency Caesarean delivery face a number of physical and emotional challenges in the short and long term. These adverse consequences demand certain changes to maternity care. Firstly, there needs to be a continued review to reduce the use of invasive obstetric procedures during labour and delivery. Secondly Kendall-Tackett and Kaufman- Kantor (1993) suggest that the adverse consequences of an emergency Caesarean procedure may be mediated by ample support during and after surgery. Therefore, opportunities need to be provided for women to talk about the birth. Thirdly, although the present study found that in general, women were satisfied with their preparation for labour and delivery, the events leading up to the emergency Caesarean section were perceived as unexpected. It is therefore necessary to realistically prepare women for labour and delivery, including the incidence of interventions and the associated risks and benefits. Frank discussions about emergency procedures during the antenatal period may lessen the impact of unexpected events and enable women to better understand and participate in the decision-making process if such an emergency should arise during labour. Fourthly, given that some trauma symptoms have a delayed onset, postoperative care needs to provide ongoing emotional support to women and assess for the presence of trauma symptoms.

Trauma and elective Caesarean delivery

It has been suggested that Caesarean surgery is traumatic only when performed as an emergency procedure and that planned or elective surgery is relatively benign (Chamberlain, 1993). In the present study, women who experienced an elective Caesarean delivery were less distressed than women who had an emergency procedure or instrument delivery, but were more distressed than women who had a spontaneous vaginal delivery. Although a reduced level of stress may be related to the opportunity to plan and prepare for the operation, the surgery does engender some concern for women and results in a painful recovery.

Two women in this study (out of 38) who had an elective Caesarean delivery developed acute PTSD. The first woman had a traumatic previous birth that was complicated by intense pain. She had requested a Caesarean delivery to avoid "going through all that pain again". The second woman had two previous Caesarean deliveries and feared a uterine rupture. The woman reported that her fear was reinforced by antenatal staff. The experiences of these women supports earlier work that suggested some women may seek an elective Caesarean section to avoid further trauma during labour and delivery (Ryding, 1991, 1993; Reynolds, 1997). According to Robinson (1998) some women may request a Caesarean section because their previous confinement had been "traumatic and painful" and there had been "defects" in their previous care. Furthermore, Reynolds (1997) suggests that a woman's request for an elective Caesarean section may exemplify the avoidance behaviour typical of unresolved traumatic experiences.

The implications of unresolved traumatic experiences can be particularly disabling for women. Fones (1996) reported the experiences of one woman who experienced chronic trauma symptoms for eight years after delivery. During this time she experienced sleep disturbances, intrusive memories, high levels of anxiety, and her marital relationship suffered. There is a need for health staff to explore women's previous birthing experiences, provide information to fill unanswered gaps, and encourage a greater sense of control in relation to any future birthing decisions.

Trauma of an instrument-assisted delivery

The patterns of obstetric management reported in this study resemble the "cascade of intervention" outlined by Inch (1982) and Wagner (1994a) in their critique of obstetric practices. They suggested that the use of one intervention tends to be associated with an increased risk of precipitating another intervention. In line with the review by Stephenson et al. (1993), the results of the present study found that a greater proportion of those women whose labours

were augmented or induced experienced instrument assisted vaginal deliveries (χ^2 (4) = 18.893, p <.001) than those women whose labour was spontaneous. Furthermore, increased intervention during delivery was strongly associated with the use of narcotics and epidural anaesthesia (p <.001), increased time in labour (p <.0001), and the insertion of an intravenous line (p <.001).

Although the rates of instrument-assisted delivery are known to be higher among nulliparous than multiparous women (Stephenson et al., 1993), the overall rate of instrument-assisted delivery for nulliparous women (10.2%) was higher in this study than 1996 Queensland figure (7.4%). This level, however, was considerably lower than the rates of instrument-assisted deliveries reported in studies with privately insured, nulliparous women. Studies by Fisher (1994) and Carey (1990) both reported rates for instrument vaginal delivery of around 30% for privately insured nulliparous women.

Both forms of instrument assisted delivery were found to be predictive of acute trauma symptoms in this study. In particular, a forceps delivery (β = .176, p < .0001) was found to be as stressful as an emergency Caesarean section (β = .177, p, <.0001) and was strongly associated with the development of acute trauma symptoms. This contrasts with other studies (e.g. Fisher, 1994; Green et al., 1990) that report instrument-assisted deliveries to be less stressful for women than an emergency Caesarean section.

The traumatic nature of both forceps and vacuum deliveries is rarely considered in the literature which tends to focus on the impact of Caesarean sections (e.g. Marut, 1978). Instrument-assisted deliveries are emergency procedures in response to identified fetal distress or failure to progress, and may be undertaken without analgesia. For example, in the major study, Mandy reported feeling as though she was “being ripped apart” during the vacuum extraction. The experience of extreme pain, in addition to fear for the baby’s life, may contribute to the dissociative responses and emotional numbing described by women in this

study and may precipitate acute PTSD. Furthermore, the use of instruments during delivery may adversely affect a woman's confidence to deliver naturally during subsequent births or her desire to have further children. In the pilot study, Beth suggested that she "could not go through it [a forceps delivery] again".

The contribution of a forceps or vacuum delivery to the development of acute trauma symptoms has not been previously reported. Given that nulliparous women are more likely to experience such interventions (Wagner, 1994a), obstetric staff need to be aware of the subsequent adverse psychological consequences for women, and more importantly, review the use of such interventions during delivery. Staff need to ensure that informed consent has been given by the woman, and explanations are offered at each step of the procedure.

Trauma of birthing complications for the baby

Although there were a number of complications reported for mothers and babies as a result of childbirth, the identification of a medical complication for the baby was particularly distressing for participating women and contributed to the development of trauma symptoms (β = .097, p <.02). This complication involved a perception of "threatened" death or serious injury to the baby. This result confirms the finding by Ballard et al. (1995) that following a traumatic delivery, during which there is fear for the wellbeing of the baby, women may subsequently develop PTSD.

The experience of life-threat to others is a traumatic dynamic present in many catastrophic events and is a key dynamic in the PTSD conceptualisation (Joseph et al., 1997). In exploring the traumatic potential of neonatal complications two processes may occur. Firstly, the mother may fear for the life of her newborn. Some mothers reported flashbacks and made statements such as "I can still see the baby looking limp and blue", others reported that they "thought the baby was dead". Horowitz (1976) suggests that in response to a traumatic event (such as a

fear for the life of the baby) a traumatic stress reaction occurs. The response leads to alternating intrusive/ re-experiencing and avoidance/ numbing processes as the individual attempts to master and integrate the experience.

A second reactive process of bereavement may also occur in response to the knowledge that the baby has incurred physical damage or been diagnosed with a medical condition. According to Raphael (1997) this process encompasses grief and mourning in addition to the stress reactions outlined by Horowitz. In general, individuals suffering unanticipated loss, compared with those with long forewarning, showed greater disbelief initially and more severe disturbance, with a high degree of anxiety and self-reproach (Raphael, 1997). In the case of childbirth, mothers may blame themselves for the baby's condition, experience guilt, and a sense of being 'different' from other mothers. Some women may also feel repulsed at the sight of baby who may be perceived as 'damaged' and not the perfect baby that had been desired.

The present study found that the experience of neonatal complications is highly stressful, and may have long-term psychological consequences for mothers. There is a need therefore, to take into account a woman's perception of neonatal complications arising from childbirth and the reality of those events as life-threatening. According to Raphael (1997) this kind of situation may represent a "potential double stressor effect". Birthing staff, therefore need to take into account the delicate balancing of trauma and grieving to achieve optimum outcomes for women suffering a double psychological burden.

Trauma of post-delivery pain

The length of time a woman required analgesia following delivery was also identified in this study as a significant contributing factor in the development of acute trauma symptoms (β = .164, p <.0001). This variable has only been reported in two earlier qualitative studies. The study by Ballard et al. (1995) reported that three of the four women in their study had severe, unrelieved pain

following delivery. Similarly, Fones (1996) reported that a woman had described considerable perineal pain following a forceps delivery.

The examination of pain after birth in this study revealed that it was consistently associated with the experience of obstetric interventions. This included incisions following Caesarean section, episiotomy pain, and sutures. Some women reported that they were given an episiotomy without pain relief (e.g. Jenny) or sutured after tearing without local anaesthesia (e.g. Lea). These women also reported that staff dismissed their complaints about pain. Sherr (1995) suggests that post-operative pain following delivery is often not taken seriously by staff, despite the fact that it would be routine in other medical settings.

Even though postpartum pain can be temporary, it can be overwhelming and frightening. The level of pain may be made worse by the demands of a new infant. Furthermore, the experience of pain can lead to a sense of helplessness (Affonso & Walpole, 1979) low energy, disturbed sleep and worry (Von Korff & Simon, 1996). These symptoms then diminish a woman's sense of coping and mastery in the immediate postpartum period. The identification of the association between operative intervention, the increased need for analgesia, and the development of PTSD supports the proposition that many of the psychological consequences of operative deliveries are compounded by pain levels, pain medication, wound effects, sutures and restricted mobility (Sherr, 1995).

In summary, the results of this study provide evidence that the use of obstetric procedures during childbirth significantly contribute to the incidence of acute trauma reactions in the postpartum. This study extends the findings of others (Boyce & Todd, 1992; Cartwright, 1979; DiMatteo, Kahn & Berry, 1993; Fisher, Astbury & Smith, 1997; Oakley, 1980; Simkin, 1991) in identifying the adverse implications of obstetric interventions on the psychological wellbeing of mothers. The methodology of the present study also extends the work by Wijma et al. (1997) by specifically investigating the connection between obstetric intervention

and acute PTSD through the use of valid instruments and timeframe in a prospective study.

Poor care and acute trauma symptoms

The present study delineated a direct relationship between scores on the Perception of Care Questionnaire (PCQ) and the development of acute trauma symptoms. Dissatisfaction with intrapartum care was found to be a significant contributor in the development of acute trauma symptoms (β = -.393, $\underline{p}$ <.0001). While a number of research studies have described the contribution of dissatisfaction with care to adverse psychological outcomes for women (Cartwright, 1979; Green et al., 1990; Health Department, Victoria, 1990; Lipsett, 1984; Stamp & Crowther, 1994), the present study extends these findings. The relationship between a negative perception of the birth and trauma symptoms was reported by Wijma et al. (1997) but they did not systematically explore the dimensions of care in relation to trauma, as was the case in the present study.

Satisfaction with childbirth is complex, multidimensional, and is shaped by many aspects of labour and birth. This may include the interventions experienced, the presence of others, the sense of control over one's self and the environment, and the way in which the woman perceives her ability to cope with pain. As such, perceptions of care are highly personal and individuals will vary on what constitutes a positive, satisfying experience.

In general, there was a good level of satisfaction with maternity care ($\bar{X}$ = 82.9, σ = 12.71) observed in this study. Similar ratings were reported by nulliparous and multiparous women. This is typical of studies on satisfaction with perinatal services (Shearer, 1990). Porter and Macintyre (1984) found that pregnant women appear to assume that whatever care or interventions they experienced were the 'best'. The overall rating of care on the PCQ by this group of birthing women was, however, lower than the overall rating ($\bar{X}$ = 90.8) reported by Fisher

(1994). One possible explanation for the lower rating is that in Fisher's study nearly 60% of women were attended by their private obstetrician. As a result of that relationship, the privately insured women may have rated their care more highly than was the case in the present study.

While the total PCQ score was a reliable and valid measure of maternity satisfaction, an analysis of the four factors on the PCQ revealed some interesting findings. The results of this study indicate that the perception of professional / technical skills of staff (Factor 1) was consistently associated with acute trauma symptoms (β = -.244, p <.0001). The emotional dimension of care (Factor 2) and the perception of midwifery care (Factor 3) were not statistically significant in relation to acute trauma symptoms. Finally, the perception of partner support (Factor 4) was significantly related to acute trauma symptoms (β = -.186, p <.0001). The components of care investigated in this study are discussed below.

Technical / professional dimension of care

The professional / technical dimension of care not only identifies the perception of clinical competence of birthing staff but also aspects of the professional – patient relationship. Women who rated this aspect of care as poor, were more likely to be dissatisfied with the decisions made by staff regarding their treatment. Furthermore, these women were more likely to report that they were treated with disrespect, were not consulted, and that procedures were painful.

In contrast to the findings of Fisher (1994), the perceived quality of the professional / technical skill of staff was found to be directly influenced by the level of obstetric intervention as measured by the obstetric impact score (β = -.282, p <.0001). Furthermore, the results of the study also refute suggestions of earlier research (Lind & Hoel, 1989; Sullivan & Beeman, 1982) that satisfaction with childbirth appeared to be largely independent of the actual obstetric experience. The present study found that as women experienced increased obstetric intervention, their perception of care decreased. Similarly, women in the

pilot study expressed dissatisfaction in relation to obstetric events, particularly when they experienced pain as a result of the intervention, felt unable to control the situation, or that their views were dismissed. It would seem that the low level of consultation afforded to these birthing women contributed to their distress and resulted in feelings of dissatisfaction.

Research has documented the pervasive control exerted by staff in the medical care setting to the detriment of birthing women (Arms, 1975; Danziger, 1979; Davis-Floyd, 1990; Oakley, 1985). Women's experience of little choice and control in decisions during labour and delivery has been associated with adverse psychological outcomes for women (DiMatteo et al., 1993). Green et al. (1990) found that feeling less in control during labour was associated with a more negative birth experience, decreased satisfaction and depression during the postnatal period. According to Salmon and Drew (1992) staff may assist women to have a fulfilling and rewarding childbirth experience by facilitating their active participation in events and a sense of mastery and competence.

Affective aspects of care

The present study found no statistically significant association between emotional care and the development of acute trauma symptoms. This is in contrast to other research that has documented the links between perceived inadequacy of emotional care during childbirth and the development of stress symptoms. For example, Morgan et al. (1982) reported that women who recalled being emotionally unsupported were more likely to describe their labour as stressful, require more pain relief and had longer labours than other women. Furthermore, other prior studies (e.g., Cartwright, 1967; Lind & Hoel, 1989) reported that women were much less likely to rate highly the affective aspects of their intrapartum care if there had been technical intervention during labour and delivery.

A closer examination of the PCQ items found that only 14% of women were asked how they felt after the delivery by staff and less than half the women (49.7%) were encouraged to ask questions about the labour and delivery. These questions reflect staff's concern for the woman, and acknowledge the unique nature of childbirth and yet do not appear to be a priority for some staff. The results of the pilot study revealed that the emotional needs of birthing women were more often neglected in situations involving maternal or fetal complications. For example, Beth described feeling 'alienated'. Although the case of Mandy reflects appreciation of the technical skills of birthing staff in saving her daughter's life, there continued to be a lack of sensitive care during her stressful delivery and an avoidance of the emotional consequences of the birth for her in the immediate postpartum period.

The qualitative data also revealed that during childbirth, a woman is particularly vulnerable to the power and influence of those providing care. If for some reason this position of trust is violated, or carers are perceived as insensitive and unkind then adverse psychological consequences may ensue.

Midwifery care

The perception of care provided by midwifery staff was not statistically associated with the development of acute trauma symptoms. The majority of women reported that midwifery staff were skilled (93.4%), kind (95.4%), and gave clear explanations (83.6%). These findings are not surprising given the more continuous presence of midwives during labour and delivery than doctors. However, only half the sample (54.7%) reported that the midwife encouraged questions about the labour and delivery. It would seem that this component of care is sometimes neglected.

In a large survey of birthing women, Sequin et al. (1989) identified that the provision of information through explanations was viewed as the most important aspect of care. Although many women (around 80%) were satisfied with other

aspects of this dimension of care, the unwillingness of some midwives to engage in discussions about labour and delivery may deny women a valuable opportunity to be informed about the birth and possibly to debrief about their experiences.

Partner response

A considerable body of evidence has documented the stress-buffering effects of social support and its association with better outcomes following stressful events (Brown & Harris, 1978; Dalgard, Bjork & Tambs, 1995; Kennel et al., 1991). For example, partner presence during a Caesarean section has been found to be an ameliorating factor on the development of negative affects (Shearer et al., 1988). The present study found that even though every woman was accompanied by their partner (81%) and/or support person (19%) during labour, the negative reaction of the partner and/or support person to the birth and/or their unwillingness to discuss the birth events contributed toward adverse consequences for the woman.

The results of this study highlight a strong inverse relationship between perceived level of partner support during labour and delivery and the emergence of acute trauma symptoms (β = -.186, p <.0001). If a woman perceived that her partner (or support person) was disappointed or did not want to talk about the birth then she was more likely to be dissatisfied with this aspect of the birth experience and report acute trauma symptoms.

A woman's relationship with her partner (or support person) may not always be without stress. DiMatteo et al. (1993) reported that while some husbands were supportive, others had no experience with medical environments and were distracted, upset, and terrified to see their wives in pain. Some women in the pilot study (e.g. Peta and Beth) found their partner's emotional reactions to the medical aspects of the delivery interfered with their supportive role. It was particularly difficult for these partners to remain focused and supportive when they witnessed their spouses endure a long and strenuous labour and when

maternal and/or fetal stress prompted the use of emergency obstetric procedures.

The effect of birth trauma on the partner (or support person) is often not considered in the literature. They may witness the pain and suffering of the woman, be confronted with a frightening experience, and also become traumatised. Figley and Kleber (1995) suggest that when an individual observes another person suffering they experience emotional responses parallel to that person's actual or anticipated emotions. Secondary traumatic stress disorder is produced by exposure to, and out of concern for, a person experiencing primary traumatic stress (Figley, 1986). This form of 'secondary trauma' may challenge basic assumptions held by the person, result in feelings of powerlessness, and cause disruption to beliefs about one's self and the world.

Spouses may be at particular risk of secondary traumatic stress during childbirth because of the especially close and often emotionally intense nature of the spousal relationship. The present study investigated women's perception of their partners' responses and did not ask partners directly about their reactions to the birth. The data derived from the pilot study did indicate however, that husbands were emotionally affected by traumatic birthing events. After her baby was taken to special care, Beth said, "My husband didn't say anything. I think we were pretty shocked". Similarly, Peta said, "Mike and I were in tears…". The distress experienced during traumatic birthing events may prevent partners from providing adequate emotional support to their spouse in the short and long term. Furthermore, their unwillingness to discuss the birth may also be as a consequence of the perceived trauma, and may reflect an avoidance mechanism.

The potential for trauma responses may be further increased if the woman and her partner were left without adequate professional support during labour. In the pilot study, Peta, Beth and Carol suggested that hospital routines, staff shortages

and the needs of other birthing women made it difficult for them to obtain adequate attention, assistance and encouragement at times during labour and delivery. Fisher (1994) found that the presence of a partner or support person may lead to a lessening of attention by staff. There may be assumptions made by staff that couples may wish to be alone and are capable of coping with the demands of labour. However, the level of contact is rarely discussed or negotiated in practice.

The PCQ factor involving 'partner response' also included statements to determine the extent to which the woman had every opportunity to talk with others and discuss the birth. Debriefing is a form of interpersonal interaction that assists women to clarify the presenting issue, verbalise feelings, identify goals and options, and select a plan of action (Busuttil & Busuttil, 1997). Directive interventions are used to assist women to recognise the relationship between the precipitating event and stress, talk about feelings, and explore past and present coping skills. As the woman gains a realistic perception of the event, develops adequate coping mechanisms, and receives adequate social support, the escalation of trauma symptoms may be abated (Aguilera & Messick, 1986).

Debriefing is a primary prevention strategy to mitigate, or at least inhibit acute stress reactions and usually takes place within 24 to 72 hours after the event (Busuttil & Busuttil, 1997). Friedman, Framer & Shearer (1988) found that early detection and early intervention with posttraumatic reactions led to lower costs and more favourable prognoses associated with victims of trauma. Indeed it is generally accepted that prevention and early intervention efforts are preferable to the treatment of a fully developed posttraumatic stress syndrome (Yandrick, 1990).

In addition to the role played by maternity staff in discussing the labour and delivery, there may also be a role for childbirth education groups. In addition to the provision of antenatal education, these groups could extend the scope of

their activities into the postpartum period or facilitate the development of support networks for mothers and fathers. Providing a forum where parents can discuss their birthing experiences in the presence of other parents would be therapeutic and assist in the prevention of long-term consequences of birthing trauma for the woman and her partner.

In summary, the present study found that women who were less satisfied with care reported higher levels of acute trauma symptoms. Not all dimensions of care contributed to this adverse outcome. In particular, the emotional aspects of care and the perception of midwifery care were not associated with the emergence of trauma symptoms. The exploration of the technical / communication aspects of care suggested that women want to have appropriate information, feel in control, be actively involved in decisions, and be treated with sensitivity. Yet these needs were sometimes not met. Furthermore, traumatised women are more likely to perceive their partners to be disappointed and reluctant to discuss the birth. These women also reported that they had fewer opportunities to talk with others about the birth in comparison with women who did not report acute trauma symptoms.

Incidence and severity of chronic PTSD

The third purpose of this study was to determine the incidence and severity of chronic trauma symptoms and chronic PTSD. While the severity of the trauma symptoms dissipates over time, the level and duration of symptomatology is of concern. Three women met *DSM-IV* criteria for chronic PTSD. Twenty-two participants (15.6%, n = 22 out of 141) reported symptoms in the subclinical range for chronic PTSD. Prominent symptoms tended to relate to the intrusive aspects of the trauma.

Two of the three women who met the DSM-IV criteria for chronic PTSD were also diagnosed with depression by their general practitioner. Similarly, four women in

the pilot study reported postpartum depression. A survivor of a traumatic event with only symptoms of PTSD would be an exception. The experience of a traumatic event can act as a powerful trigger in the onset of depressive and anxiety disorders as well as PTSD. For example, McFarlane and Papay (1992) note that in published studies examining co-morbidity, more than 80% of subjects with PTSD appear to have another disorder although this appears to depend on the population studied. In addition to the presence of depressive symptoms reported by some women in this study, other research has reported obsessive feelings to towards the baby, relationship and sexuality difficulties (e.g., Ballard et al., 1995; Fones 1996; Moleman et al., 1992).

Negative emotional states such as guilt, shame and anger are also common in PTSD and associated with anxiety and depression (Joseph et al., 1997). After birth a woman may experience guilt about the things that she did or did not do. Women may also express feelings that suggest they had let themselves down by not coping with the pain or by requiring more analgesia than anticipated. As well as guilt and shame, there may be intense feelings of anger toward self and/or others. Therefore, further research is required to explore the association between anxiety and depression for birthing women. The diagnostic criteria of PTSD may simply describe a circumscribed set of symptoms that form part of a broader syndrome that sits astride other major diagnostic groupings (Joseph et al., 1997).

The incidence of PTSD in relation to childbirth also needs to be considered in light of the likelihood of exposure to traumatic events by women in general. For example, a recent national survey on the mental health and wellbeing of adults in Australia reported a prevalence rate of PTSD in a community sample of women at 4.2% (Australian Bureau of Statistics, 1998). Women are more likely than men to experience traumatic life events in which they characteristically have little control (Hobfoll, 1986). While the implications of chronic trauma symptoms on areas of psychosocial functioning (e.g. life crises) were not specifically investigated during this study, further research is warranted.

In summary, the level of chronic trauma symptomatology identified in this study is disturbing. Fifteen percent of women continued to suffer a significant level of intrusive and avoidance symptoms three to four months after delivery. It is suggested that there may be an association between depression and PTSD symptoms in birthing women. It is also possible that trauma symptoms may be missed by practitioners in the postpartum period and that women are given a diagnosis of depression that does not reflect the true nature of their distress.

Factors contributing to chronic trauma symptoms

The fourth purpose of the study aimed to identify factors that contributed to the development of chronic trauma symptoms and chronic PTSD. Antenatal variables, obstetric intervention, and perception of care were examined.

Antenatal predictors of chronic trauma symptoms

A weak but consistent relationship between preparedness and the presence of chronic trauma symptoms was identified ($p < .02$). Although most women (85%) in the study reported feeling "satisfied" or "well prepared" for childbirth, fewer women in the trauma group and the PTSD group reported being "well prepared" for childbirth (χ^2 (10) = 21.654, $\underline{p} < .017$) than expected. This was not a negative relationship and it cannot be inferred that women who were less prepared for childbirth were more likely to develop trauma responses. Rather, it seems that although women in the trauma group and the PTSD group reported being "satisfied" with their preparation, there is a qualitative difference between "satisfied" and "very well prepared" that was statistically associated with the emergence of chronic trauma symptoms. This finding may be in part due to the increasing homogeneity of the sample as the study progressed. By Phase 3 of the study, only women who had reported acute trauma symptoms and acute PTSD were interviewed. Different results may have been reached if both traumatized and non-traumatized women had been interviewed at this time.

It is interesting to note that women from other research studies have reported that, in retrospect, they were poorly prepared for delivery, particularly for an emergency Caesarean procedure (Hausknecht & Heilman, 1991). Women in the pilot study made similar comments. They did not expect the high level of obstetric intervention experienced during labour and delivery. This may be the result of a "kind of secrecy" in which the true nature of childbirth is withheld from women so as to reduce their anxiety (DiMatteo et al., 1993). It is common practice, for example, to de-emphasise the experience of pain through the use of terms such as 'contractions' and other strategies (Slade et al., 1993). On the other hand it may reflect how little systematic (and culturally-appropriate) information is available about the physical and emotional demands, and sequelae of childbirth (Chalmers, Enkin, & Keirse, 1989; Robinson, 1998).

Obstetric predictors of chronic trauma symptoms

The next hypothesis under investigation was that the level of obstetric intervention was associated with the presence of chronic trauma symptoms. A regression analysis of the five key variables in relation to chronic trauma symptoms revealed no statistical relationship. The experience of an emergency Caesarean, forceps or vacuum delivery, the level of postpartum pain, or concern for the baby were not predictive of chronic trauma symptoms. An examination of the total obstetric impact score in relation to antenatal and care factors, however, revealed a weak association with the development of chronic trauma symptoms ($\underline{p} < .05$).

Care predictors of chronic trauma symptoms

There was a consistent relationship between a woman's perception of poor care during labour and delivery and the development of chronic trauma symptoms ($F(4, 136) = 15.164$, $R = .555$, $R^2 = .308$, $\underline{p} < .0001$). Such an association has not been previously reported in the literature. In particular, the technical / communication dimension of care ($\underline{p} < .0001$) and the partner response

dimension (p <.018) were statistically significant in predicting chronic trauma symptoms.

Furthermore, it was also noted that traumatized women became less satisfied with care over time. During Phase 2 the mean PCQ total score for this group was 76 and at Phase 3 the average total score was around 58. That is, traumatised women were less satisfied with care one month postpartum in contrast to non-traumatised women and that their level of satisfaction decreased over the next three to four months. Whereas some ambivalence may have been evident in the earlier postpartum period (e.g., being undecided about whether the 'right' decisions were made), by four months women had become clearer in their views and were less satisfied. It is not clear what contributes to this change. Possibly over time women may have had opportunities to discuss the labour and delivery with a range of people, access information, and gain insight into their reactions and feelings towards the event.

Bramadat and Driedger (1993) suggest that it is difficult to determine how satisfaction changes over time and very few studies involving birthing women have investigated this. In one longitudinal study of postnatal care, Stamp and Crowther (1994) surveyed women in hospital and 6 weeks postpartum. The "most helpful" and "most unhelpful" behaviours of midwives varied across time. For example, there was a decrease in the perception of midwives as 'supportive' and an increase in the perception that the midwives 'lacked sensitivity', were 'judgmental' and 'excluded' women from decisions. The trend toward decreased satisfaction in the postpartum period supports the findings of the present study.

A model of chronic trauma symptoms following childbirth

An attempt was made to explicate a model of contributing factors in the development of chronic trauma symptoms. The analysis of the significant antenatal variable (preparedness) (β -.161, p <.05), the total obstetric impact score (β.151, p <.05), and the total PCQ score (β .416, p <.0001) in relation to

the presence of chronic trauma symptoms revealed a model of prediction that accounted for 24.5% of total sample variance. The level of satisfaction with care (as measured by the PCQ) was consistently associated with the development of trauma symptoms following childbirth.

While the level of obstetric intervention made a weak contribution to chronic trauma symptoms, the level of significance had declined from one month postpartum to three to four months postpartum. It would seem that women who experienced trauma associated with obstetric intervention may more easily resolve or integrate childbirth events than women who felt traumatised as a result of poor care. Women may believe for example, that the interventions were painful and unpleasant but perhaps unavoidable in saving their life and/or that of the baby. In contrast, the trauma associated with poor care was less easily reconciled. Furthermore, women who experienced high levels of obstetric intervention and poor intrapartum care may have a double burden to integrate and may experience persistent trauma symptoms.

Joseph et al. (1997) suggests that events such as rape that involve human intention, life-threat and personal injury are likely to give rise to post-traumatic stress reactions than the experience of 'natural' disasters such as bush fires. It has also been suggested that the experience of traumatic events involving human intention may be more likely to result in depressive reactions (e.g. Steketee & Foa, 1987). This may be particularly true if the perpetrator of the harm was a trusted figure in the victim's life. This may be the case for some birthing women who saw the health professional in a trusted role and felt betrayed. Depressive reactions may also arise from a self-appraisal that the woman had let herself or others down or some other aspect of personal culpability. Thus the experience of events involving human intention may reflect the issues of betrayal and powerlessness described by Kendell-Tackett and Kaufman-Kantor (1993) in the dynamics of birth trauma explicated earlier. The

contribution of the present research to the emerging theory on birthing trauma will be discussed in the following section.

Contribution to the emerging theory on birthing trauma

Given the paucity of literature in relation to trauma and childbirth, the present study attempted to discern the incidence of acute and chronic trauma symptoms and PTSD following childbirth and to identify possible contributing factors. It was necessary to establish this empirical evidence before explanatory models of trauma and childbirth could emerge. The present study did not attempt to test any aspect of existing conceptualisations about trauma and PTSD. The information-processing model of trauma experiences proposed by Horowitz (1976, 1986) and the conceptual framework of birth trauma described by Kendall-Tackett and Kaufman-Kanter (1993), however, were useful in providing an interpretative lens through which an understanding of birth trauma could be gained. The contribution of the present study to these perspectives is outlined below.

1 An explanation of trauma symptomatology was provided by Horowitz's (1986) information-processing approach. This is based on the notion that individuals have mental models of the world and of themselves, which they use to interpret incoming information. A traumatic event presents information that is incompatible with existing models and may require schematic changes in order for integration to occur. However, to prevent emotional exhaustion, the processes of intrusion and avoidance modulate the flow of information to the consciousness.

The present study found that women who were traumatised by their childbirth experiences, reported a range of intrusive and avoidance symptoms. Although women in the major study reported the presence of symptoms one month after delivery, qualitative findings suggested that symptoms such as dissociation and emotional numbing occurred during labour and delivery. Similarly, in line with the

work of Horowitz, this study found that intrusive symptoms were more prevalent and enduring than avoidance symptoms.

Horowitz also suggests that individuals need make sense of the traumatic experience in order to move forward in their lives. The processing of traumatic birth events by women in the pilot study resulted in feelings of anger and despair. The integration of traumatic birthing experiences required women in the pilot study to express intense emotions, regain a sense of safety, obtain information about the event and come to an understanding about the experience. Several women stated that it took a long time (up to two years) to come to terms with these feelings. Clearly, the results of the major study indicate that many women resolve their traumatic experiences in a relatively short space of time and without professional assistance. Conversely, it was also found that some women experienced long term disability that impaired their psychological wellbeing, interpersonal relationships, and social functioning. The results also highlight the importance of support and debriefing in the resolution of trauma. The perceived lack of partner support and opportunities to discuss the birth were consistently associated with the presence of acute and chronic trauma symptoms in this study.

2. The notion of physical damage proposed by Kendall-Tackett and Kaufman-Kanter (1993) as a component of a traumatic birth experience, was supported by the results of this study. Obstetric events that resulted in physical damage (e.g., an emergency Caesarean delivery, instrument-assisted delivery, or postpartum pain) were consistently associated with the presence of acute trauma symptoms. The story told by Beth, in the pilot study, reflected her sense of being ‘damaged’ and the associated stigma as a result of staff reactions to her injuries. A woman’s experience of ‘damage’ as a result of childbirth may represent an invasion of her body territory and an inability to ‘protect’ herself against harm. The fear and anxiety evoked under such circumstances may contribute to dissociation, emotional numbing and withdrawal symptoms. Any

form of physical harm may constitute a marker for the subsequent development of trauma symptoms in birthing women. Joseph et al. (1997) report that wounded war veterans who received a period of convalescence that provided plenty of rest and attention reported less severe trauma symptoms than those veterans who were not afforded this time. In applying this finding to childbirth, women who delivered by emergency Caesarean section should therefore be provided with the opportunity for rest, healing and nurturance to minimise the likelihood of adverse trauma symptoms.

3. The identification of a consistent relationship between the perception of care and trauma behoves the need to further explore the components of care that are traumatogenic. In the present study, the perception of poor care was found to predict the subsequent development of both acute and chronic trauma symptoms. As such, the interpersonal aspects of traumatic birth events may be difficult to reconcile in the short term and long term. While the emotional aspects of care were not significant in predicting trauma, it was clear that women were concerned and traumatised about the technical /communication aspects of care. The issues of trust and respect would appear to be inherent in this dimension, and the notions of 'powerlessness' and 'betrayal' proposed by Kendall-Tackett and Kaufman-Kanter. The sense of powerlessness and betrayal may be as a consequence of limited consultation, a paucity of information, and interpersonal disrespect experienced by women during labour and delivery and need to be investigated specifically.

4. Not only was the perception of poor care predictive of trauma symptoms, it was also found to have an 'additive' effect in circumstances characterised by high obstetric intervention. This indicates that some women experience an additional trauma that is not reflected in the conceptualisations by Kendall-Tackett and Kaufman-Kanter (1993). It is therefore important to consider the woman's appraisal of the birthing event *per se*, as numerous stressors may have been experienced. These events may be interrelated or quite separate from each

other, and need to be identified and understood in order to prevent the likelihood of women experiencing multiple traumas.

Limitations and future directions

There are several limitations of this study. These are concerned with reliability, data collection procedures, sampling, timeframe, and the investigation of associated factors in the development of trauma symptoms. Future research in regards to each issue will be suggested.

The results of this study are predicated on an accurate assessment of trauma symptoms and PTSD in particular. While standardised measures were selected and used, inter-rater reliability needed to be established. In the study the researcher was trained and supervised in the administration and scoring of the tools, and results were presented and discussed with the supervisor. A more rigorous approach, however, would be to record and analyse the interview data by two independent raters.

Phase 2 and Phase 3 data were collected by telephone interviews. Although this approach is widely used in fields such as market research, telephone interviews have only recently been used for diagnostic interviews (e.g., Breslau et al. 1998; Slutske et al., 1998; Statham et al., 1998). While there are inherent advantages of telephone interviews over other data collection methods such as postal surveys, this study could have conducted telephone interviews and then face-to-face interviews with a matched sub-sample of women who reported trauma symptoms and those women who met PTSD criteria to ensure the validity of the data collection procedure.

The study sample was representative in relation to age, education, occupation, ethnicity, parity, and comparable to the general birthing population on a wide range of perinatal events. However, the sample could have included privately

insured women. It was argued that the inclusion of privately insured women could have skewed the results of this study as this group of women are known to experience a much higher rate of obstetric intervention during labour and delivery than women in the public sector. For example, Fisher (1994) reported a 30% incidence of vacuum delivery for privately insured nulliparous women, whereas the rate in the present study was 10.2%. This assumption needs to be tested in future research.

While the study adhered to *DSM-IV* criteria and timeframe in identifying PTSD, the duration of chronic symptoms remains unanswered. A further phase that investigated the long-term follow-up of traumatised women would provide information on the duration and resolution of symptoms.

This study did not investigate issues that may influence the adaptation to motherhood. Issues such as low levels of social support and high life stress may exacerbate the trauma experienced by women during childbirth. It is likely, for example that all women experience a higher than normal level of stress in the first month postpartum. Therefore, the use of a matched control cohort of women during Phase 3 would have enabled the identification and control of compounding variables in the continuation of trauma symptoms.

Similarly, there was also a decreased level of satisfaction with care over time. Changes on the PCQ may have been confounded due to the homogeneity of the sample in Phase 3. It is possible for example, that all women become less satisfied with care over time, not just those who reported trauma symptoms. The design of the present study could have been strengthened with the inclusion of a matched control group in the third phase of the study.

Given the association of depression with PTSD this study could have employed a simple measure of depression in all phases of the research. The Edinburgh Postnatal Depression Scale (Cox, Holden & Sagovsky, 1987) for example is a

short self-report questionnaire that has been validated with an Australian sample of birthing women, and found to have good reliability in the antenatal and postnatal periods. There is a need for future research to investigation the relationship of postpartum depression and trauma. Similarly, there is a need for research to investigate the role of anxiety in the development of depression. Many of the anxiety-based symptoms reported by traumatised women, for example, avoidance, sleep difficulties, trouble concentrating, and preoccupation with the birth, may also be interpreted as symptoms of depression and need to be delineated.

This study could have assessed the potential importance of a pre-existing sense of control. It has been suggested that individuals with an external locus of control are more susceptible to the unpredictable and uncontrollable nature of some events (Frye & Stockton, 1982). The notion of control was a recurring theme in the literature and was implicit in the dimensions of satisfaction investigated in this research. The issue of control could have been made more explicit. Future prospective studies could investigate the contribution of locus of control and women's perception of control during labour and delivery to the subsequent development of trauma symptoms. Furthermore, this variable may play an important role in the way women perceive and cope with negative events during childbirth. A measure that assesses the degree to which women perceive themselves to be in control during labour and delivery could be utilised and outcomes in relation to obstetric and psychological outcomes investigated.

Although this study investigated pregnancy loss as a possible predictor of birth trauma, other issues confronting birthing women such as domestic violence were not investigated in this study, but are worthy of further attention. The development of trauma symptoms in relation to childbirth may represent an accumulation of trauma in the lives of women. Further research in this area will have direct implications for antenatal assessment and screening for women at risk of adverse psychological outcomes following delivery.

Although the study found a decrease in the presence of trauma symptoms over time, the issue of preparedness emerged in relation to chronic trauma symptoms. It could be that as traumatised women reflected on their childbirth experiences, they no longer perceived themselves as "well prepared". Future prospective research could assess this variable in the antenatal period and after delivery to determine influencing factors.

This study found that the 'partner response' dimension of care was consistently associated with the presence of both acute and chronic trauma symptoms. It was suggested that the partners and/or support persons were also traumatised by the birth events. Future research needs to investigate the level of trauma experienced by partners and/or support persons, and the implication of this trauma.

Summary

Childbirth is a significant and potentially traumatic event in the lives of women. This study identified a 5.6% incidence of acute PTSD and a high rate (33%) of trauma symptoms one month after delivery. While the level of symptomatology decreased over time, 3 women developed chronic PTSD, and there was a continued high level of chronic trauma symptomatology. The antenatal factors under investigation did not influence subsequent birthing events, the quality of maternity care received or the development of acute trauma reactions. This study has shown that emergency operative interventions and instrument assisted deliveries, fear for the baby's life, and post-delivery pain requiring analgesia were associated with the development of acute trauma responses. An emergency delivery procedure may occur at a time of great physical and emotional vulnerability where the woman may be physically exhausted, drugged, fearful for herself and/or her baby, and feel helpless and overwhelmed. These circumstances place women at risk of PTSD.

The finding that childbirth events involving life threat and personal injury are likely to give rise to trauma reactions supports the findings of previous studies (Wijma et al., 1997; Menage, 1993). However, high levels of obstetric intervention and the experience of inadequate care compounded the sense of fear that emerged in relation to the self and/or the baby. This study further contributes to knowledge in the field of study by specifically investigating the effects of obstetric intervention and the effects of the nature of the care received during labour and delivery as contributing factors to PTSD. The relationship between these factors has not been investigated by previous studies.

Ratings on the PCQ revealed a lack of attention to the communication aspects of care, the provision of information, and support during the intrapartum period. Interestingly, satisfaction with care was found to decrease rather than increase over time. A high level of obstetric intervention was predictive of birthing trauma as was dissatisfaction with maternity care, however, high levels of obstetric intervention and the experience of poor intrapartum care increased the likelihood of acute trauma symptoms. The perception of care was also found to make a significant contribution to the development of chronic trauma symptoms. This may reflect the traumatic nature of events that constitute human intention that is difficult to reconcile by the victim. The provision of adequate postpartum care is therefore crucial in the identification of emotional distress. Opportunities need to be provided for women to talk through the birth experience, gain a better understanding of the sequence of events, and to express their feelings and fears in relation to the birth.

CHAPTER 8

Conclusion

In the past two decades there has been progressive research into the psychological effects of traumatic events. Although some events such as rape seem particularly likely to lead to posttraumatic stress reactions, the severe and long-lasting effects of childbirth for some women have only recently been documented. This chapter highlights the four major findings of this study and outlines the conclusions drawn from this work.

PTSD following childbirth

This study has confirmed the presence of trauma symptoms following childbirth for over thirty percent of participants and identified that the intensity of such reactions contribute to the development of PTSD in some cases. The prevalence of acute PTSD in birthing women (5.6%) is comparable to the incidence of 6% reported by Menage (1993). While this prevalence rate exceeds the 1.7% reported by Wijma et al. (1997), this discrepancy was argued to be in relation to data collection procedures and timeframe differences. The PTSD incidence reported in the present study also exceeds the prevalence rate reported for women (4.2%) during a national survey of mental health and wellbeing by the Australian Bureau of Statistics (ABS) (1998). As the ABS survey identified PTSD across the lifespan, the results of the present study identifies the puerperium as a specific period of intense stress for childbearing women.

This study is unique in its investigation of chronic trauma symptoms and PTSD. Three women continued to experience symptoms that would warrant a diagnosis of chronic PTSD. Two of these women were diagnosed with depression by their general practitioner. Furthermore, around 15% of women continued to experience subclinical chronic PTSD. The presence of trauma symptoms in the

postpartum period and the possible co-morbidity with other forms of emotional distress needs to be considered by practitioners.

Posttraumatic stress disorder was formulated in response to men's experience of combat, and other events involving massive death and destruction. However, according to the ABS (1998) report the prevalence of PTSD for women is nearly twice the rate as that for men. Some writers have suggested that the events during childbirth may in some ways replicate other violence perpetrated against women (e.g. J. Kitzinger, 1992; Oakley, 1985). During childbirth, women are particularly vulnerable as they manage the physical and emotional demands of labour and delivery. Birthing women are sometimes treated like objects while painful and intrusive actions are done to them. In addition to painful procedures, some staff have been found to be dismissive of women's views and wishes.

Whilst it is women who give birth, the process of labour and delivery is often ultimately controlled by medical personnel. Childbirth from a medical-dominated obstetric perspective may not seem traumatic. Yet from a woman's perspective, childbirth involves intense pain, powerlessness through limited choice and control over events, and a primary concern for the wellbeing of their unborn or newborn infant. Under such circumstances, the development of trauma symptoms would appear as a consequence to the experiences of labour and delivery.

The seriousness of posttraumatic stress following childbirth must not be underestimated. The use of a conservative cut-off point for the diagnosis of PTSD according to DSM-IV criteria does not acknowledge the level or pattern of trauma symptoms reported by women that fall outside the diagnostic pattern. There was a high rate of subclinical acute PTSD identified in this study. Four weeks after delivery, one in three women described at least three trauma reactions in relation to childbirth. It is possible that much of the research evidence underestimates the levels of distress, as the most severely affected

may also be the women most likely not to seek professional help or take part in research studies.

Psychological vulnerability and subsequent trauma

The vast majority of women in this study were not clinically anxious and while they may have expressed some specific concerns about the labour and delivery, these factors were not found to impact on subsequent birthing events. Research that has retrospectively attributed pregnancy psychological state to adverse obstetric outcomes and generalised about its contribution, has then led to the inaccurate and pejorative view that it is psychological abnormalities within women that contribute to adverse obstetric outcomes.

The findings of the present research identified that individual psychology contributes little to labour and delivery experiences and did not result in a statistically significant relationship with adverse obstetric outcomes. Research that continues to search in women's psyches for explanations of complications of labour and delivery would seem inappropriate. The widespread belief perpetuated in antenatal classes that anxiety management moderates the course and outcome of labour should be reconsidered in light of existing evidence. Not only was psychological wellbeing during pregnancy found to have limited influence on subsequent birthing events, it was also not associated with satisfaction of the care received during labour and delivery.

Trauma of obstetric intervention

In contrast to the findings of some previous research (e.g. Elliott et al., 1984; Green et al., 1990), the experience of obstetric intervention was strongly associated with the development of postpartum stress. The effects were also accumulative: the more interventions a woman had, the more stress was reported. This effect was independent of parity.

A high level of discomfort and pain was experienced because of medical procedures, drugs, or equipment. Furthermore, some women reported being excluded from decision-making and at times their wishes and views were ignored. It would seem appropriate for the obstetric profession to consider and to account for the continuing high rate of some obstetric procedures and the divergence from the recommendations of the World Health Organisation (1985, 1996). A critical examination of the routine use of many obstetric interventions needs to be made. There is support in this study for what Wagner (1990) refers to as the cascade of effect following obstetric intervention. Intervention at the commencement of labour through induction and augmentation was followed by the need for more potent forms of analgesia during labour. The drugged state impedes a woman's ability to deliver the baby and increases the likelihood of an instrument-assisted or emergency Caesarean delivery. Such approaches are associated with either perineal suturing or recovery from abdominal surgery.

The experience of pain during childbirth was not only related to the physiology of labour but as a consequence of obstetric intervention. Participants provided graphic illustrations of the intense pain and fear evoked during routine procedures such as rupture of the membranes or during more complex procedures such as the insertion of an epidural. For example, some labouring women described feeling a "lightning bolt" go through their body as a nerve was aggravated by the epidural catheter.

Health professionals do not always deal effectively with patients' pain. Caregivers' reactions have been reported as unhelpful, overestimating or underestimating women's pain and its effects, and providing either too little analgesia or using drugs to substitute for emotional support and encouragement. Health professionals should be encouraged to learn more about women's experiences and perceptions of pain and childbirth, and be better able to support coping strategies.

Trauma and poor intrapartum care

Satisfaction with health care is acknowledged to be difficult to measure, particularly in women who have recently given birth (Shearer, 1987; Lumley, 1985). The Perception of Care Questionnaire did prove sensitive and allowed an overall rating of satisfaction to be determined as well as the identification of individual components of satisfaction.

Ratings in relation to the technical/professional aspects of care identified that women want to be better informed of the implications of obstetric interventions during delivery. Staff need to be conscious of the psychological impact of any procedure on the wellbeing of birthing women. The use of obstetric interventions can invoke fear and stress.

It is not only the use of interventions (both routinely and under emergency circumstances) but the administration of these procedures in addition to poor communication and inadequate information that is particularly disturbing for birthing women. Even if circumstances are extraordinary and life or death decisions are made, particular care needs to be paid to the provision of information and opportunities for the woman and her partner to fully understand the reasons for such actions.

Birthing women expect that staff will provide the best possible care at a time of great vulnerability. Yet as this study highlights, there were numerous occasions when women were not supported. From the outset, there appeared to be little emphasis on shared decision-making or an orientation towards woman-centred care. The association of dissatisfaction with obstetric services with trauma symptoms was directly attributable to the lack of responsive care in relation to the emotional, informational and self-determination needs of birthing women. It was particularly true that as more emphasis was placed on birthing technology the less attention was paid to the woman and her emotional needs.

Supportive health professionals can have a critical impact on women's wellbeing. Women's long term memories of a helpful midwife or physician during childbirth have been reported to persist for as long as 15 to 20 years, and appear to have a profound effect on perceptions and recollections of, and satisfaction with, the entire experience (Simkin, 1991).

Women expressed a desire to be consulted about their birthing experiences, have questions answered, feelings normalised, and be provided with opportunities to discuss the birth and their feelings about this significant event. Debriefing was often not afforded during the immediate postpartum period or in the days following delivery and some women had to depend on informal sources of support. While some women were adequately supported by their partners, some partners were unable to provide effective emotional support. Following childbirth, women clearly require opportunities to integrate birthing experiences into their view of self, the world and their future.

Clearly, it is not the pain or process of normal labour and delivery that is traumatic but rather the experience of intervention and poor care that is traumatic. It is well known that there is a need to reduce the current level of obstetric intervention and improve the quality of care, and yet such recommendations are not being quickly implemented in practice. Hospitals are large hierarchical organisations that do not provide individualised, sensitive care, opportunities for continuity of care, or meaningful woman-carer relationships. As such, the level of trauma symptoms identified in this study is not surprising and represents part of the ongoing physical and psychological morbidity suffered by birthing women.

The implications of this level of maternal distress are numerous not only for the women but for the baby as well. As a consequence of adverse birthing experiences, women are less likely to approach motherhood with confidence and

are more likely to experience psychological morbidity. Health professionals need to enhance their recognition of women in distress. A gentle examination, careful listening, and a respectful approach can all help birthing women during a significant life event. Sensitivity on the part of staff who understand and validate women's distress, provide information, and offer practical support can minimise the likelihood of trauma symptoms following childbirth.

Appendix A

Phase 1: Antenatal Questionnaire

Personal Details Sheet

1. Name:.....

2. Mail Address:.....
.....

3. Contact phone number
During the Day: .....
During the Evening: .....

4. Age
Self : ..... Partner: .....

5. Marital status
1. ☐ Married
2. ☐ Single
3. ☐ Defacto
4. ☐ Other

6. Length of relationship:.....

7. Ethnic origin
1. ☐ Caucasian / European
2. ☐ Australian Aboriginal
3. ☐ Torres Strait Islander
4. ☐ Asian
5. ☐ Other

8. Highest educational level achieved

Self: ..... **Partner**:.....

9. Occupation

Self: ..... **Partner**:.....

10. Health cover
1. ☐ Public
2. ☐ Private

11. Expected date of delivery: .....

12. Previous pregnancies ☐ None

Number of previous pregnancies resulting in
☐ Live births
☐ Stillbirths
☐ Miscarriage

Code number:
Date:

I want to ask you some questions about your pregnancy and the approaching birth of your baby. I also need some background information which should be recorded on the Personal Details Sheet. I will give you a code number that is to be used on all your questionnaires. Please do not write your name on any of the forms. Please complete the separate personal details sheet then answer the following questions.

1. Which of the following sources of information about pregnancy and childbirth have you used. Please tick your choices in the boxes provided.

☐ Books
☐ Women's magazines
☐ Discussion with my doctor
☐ Pre-parenthood classes / films
☐ Antenatal classes. If so please specify details (where, by whom, number of classes/ sessions etc)

_____

_____

☐ Discussion with a midwife
☐ Discussion with friends
☐ Discussion with family members
☐ Other (please specify)

_____
_____

2. Which of these has been the most useful source of information?

_____
_____

3. How well prepared do you feel for childbirth? Please tick the appropriate box.

1. ☐ Not at all, I don't know what labour and delivery are going to be like
2. ☐ A bit, I do not know enough about what labour and delivery are going to be like.
3. ☐ Undecided
4. ☐ Satisfied, I know enough about what labour and delivery are going to be like.
5. ☐ Very well prepared, I know as much as any one can about labour and delivery.

4. Sometimes unexpected events happen in pregnancy and childbirth. What do you think are the chances of birth complications for this pregnancy? Please tick the appropriate box.

1. ☐ Not at all likely
2. ☐ Unlikely
3. ☐ Do not know
4. ☐ Likely
5. ☐ Very likely

5. I would like to know some possible details about your previous obstetric history. Please tick the box if the item applies to you.

1. ☐ Previous miscarriage or abortion
2. ☐ Ectopic pregnancy
3. ☐ Endometriosis
4. ☐ Ovarian cysts
5. ☐ Distressing experiences during a Pap smear, vaginal or reproductive medical investigations
6. ☐ Worrisome menstrual periods
7. ☐ Worrisome vaginal discharge
8. ☐ Sexually transmitted disease
9. ☐ Other _____
10. ☐ None of the above

The following questions refer to your feelings about the pregnancy. Please tick the appropriate box.

6. I feel anxious about the approaching birth of my baby.

1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

7. My partner has been supportive through the pregnancy

1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

Thankyou for providing this helpful information. On the next page is one last set of questions.

Self evaluation questionnaire

A number of statements which people have used to describe themselves are given below. Read each statement and tick the appropriate box to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer that seems to describe your feelings today.

	Not at all	Some what	Moderately so	Very much so
1. I feel calm	☐	☐	☐	☐
2. I feel secure	☐	☐	☐	☐
3. I am tense	☐	☐	☐	☐
4. I feel strained	☐	☐	☐	☐
5. I feel at ease	☐	☐	☐	☐
6. I feel upset	☐	☐	☐	☐
7. I am presently worrying over possible misfortunes	☐	☐	☐	☐
8. I feel satisfied	☐	☐	☐	☐
9. I feel frightened	☐	☐	☐	☐
10. I feel comfortable	☐	☐	☐	☐
11. I feel self-confident	☐	☐	☐	☐
12. I feel nervous	☐	☐	☐	☐
13. I am jittery	☐	☐	☐	☐
14. I feel indecisive	☐	☐	☐	☐
15. I am relaxed	☐	☐	☐	☐
16. I feel content	☐	☐	☐	☐
17. I am worried	☐	☐	☐	☐
18. I feel confused	☐	☐	☐	☐
19. I feel steady	☐	☐	☐	☐
20. I feel pleasant	☐	☐	☐	☐

Thankyou for participating in this study

Debra Creedy
Senior Lecturer
Faculty of Nursing & Health
Griffith University

Appendix B

Phase 2: Postpartum Questionnaire

Code Number
Date

First of all I would like to get some information about your baby's birth. Some of this information may have been given to you on the hospital discharge summary.

1. Date of delivery:_____ **2.Baby's sex** _____

3. Predelivery procedures. Please tick if the item applies to you.
1. ☐ Shaving
2. ☐ Enema
3. ☐ Insertion of intravenous drip
4. ☐ Insertion of catheter
5. ☐ Artificial rupturing of membranes
6. ☐ Syntocin

4. The onset of labour was
1. ☐ Spontaneous
2. ☐ Augmented
3. ☐ Induced
4. ☐ Did not occur

5. Length of labour _____

6. Electronic fetal monitoring was used ☐ Yes ☐ No

7. I had pain relieving drugs ☐ Yes ☐ No

8. The drugs were called _____

9. Apart from medical staff, who was with you during the baby's birth
1. ☐ Husband / partner
2. ☐ Other family member
3. ☐ Friend
4. ☐ Other, please specify _____

10. Mode of delivery.

If you had a vaginal delivery please answer the following statements in Question 10. If not please go to Question 11.

Question 10 -
During the delivery of your baby please indicate if the following events occurred

The birth was spontaneous ☐ Yes ☐ No

Forceps were used ☐ Yes ☐ No

I had an episiotomy ☐ Yes ☐ No

I was given pain relieving drugs after delivery ☐ Yes ☐ No

If yes, for how many days _____

There were other complications ☐Yes ☐No

If yes, please specify _____

11. If you had a Caesarean Delivery, please answer the following questions.

I had an elective Caesarean delivery ☐ Yes ☐ No

I had an emergency Caesarean delivery ☐ Yes ☐ No

I was given pain relieving drugs after delivery ☐ Yes ☐ No

If yes, for how many days _____

How long before you were up and walking (hours) _____

The sutures are soluble ☐ Yes ☐ No

The sutures are removable ☐Yes ☐ No

Reason for Caesarean delivery
_____

There were other complications ☐Yes ☐No

If yes, please specify _____

12. How long after the birth did you first see your baby? _____.

13. How long after the birth did you first hold your baby? (Hours)
_____

14. What was your most unpleasant experience during childbirth?
_____
_____

15. What was your most pleasant experience during childbirth?

_____

_____

16. How close was your actual experience of childbirth to what you expected?

1. ☐ Totally unexpected
2. ☐ Somewhat unexpected
3. ☐ Undecided
4. ☐ Somewhat like I expected
5. ☐ Exactly like I expected

17. Thinking back to your baby's birth, can you tell me whether you felt,

1. ☐ Very disappointed, not at all like I hoped it would be
2. ☐ Disappointed, it was not quite like I hoped it would be
3. ☐ Undecided
4. ☐ Pleased, it was much as I hoped it would be
5. ☐ Very pleased, it was very much as I hoped it would be

The following section consists of a set of questions related to the care you received during labour and delivery.

Perception of Care Questionnaire

I would like to ask you some questions about the care you received when your baby was delivered. Please answer the first 15 questions concerning the doctor/ midwife who was **primarily** responsible for your delivery. This person could have been a specialist obstetrician, a general practitioner, a hospital doctor or a midwife. The other questions are particularly concerned with the nursing care you received.

1. I felt great confidence in my doctor/midwife's management of my delivery

1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

2. My doctor/ midwife made the right medical decisions during my delivery

1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

3. My doctor/midwife was not gentle when doing medical procedures and examinations

1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

4. My doctor/ midwife did not explain clearly what she/he did to me during my delivery.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

5. My doctor/midwife listened closely to everything I said during my delivery
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

6. My doctor/ midwife asked me how I wanted to deliver my baby
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

7. My doctor/midwife used medical terms I had difficulty understanding
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

8. After my baby's birth my doctor/midwife did not ask me how I felt about the delivery
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

9. After delivery, my doctor/ midwife encouraged me to ask questions I had about my baby's birth.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

10. My doctor/ midwife was courteous and polite in all her/his dealing with me
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

11. My doctor/midwife was not always kind and considerate of my feelings.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

12. My doctor/ midwife “talked down” to me.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

13. Overall I am satisfied with my doctor/ midwife’s treatment of me.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

14. I don’t think I would recommend this doctor/ midwife to a friend.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

15. The midwives were kind and considerate of my feelings during my delivery.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

16. The midwives were skilful and gentle in examining me and in doing medical procedures during labour and delivery.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

17. The midwives explained clearly everything they did to me during labour and delivery.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

18. After delivery the midwives encouraged me to ask questions about and discuss my delivery.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

19. How did your partner react to your delivery?
1. ☐ Very disappointed, it was not at all as he had hoped.
2. ☐ Disappointed, it was not quite as he had hoped it would be.
3. ☐ Undecided.
4. ☐ Pleased, it was much as he had hoped it would be.
5. ☐ Very pleased, it was very much as he had hoped it would be.

20. My partner made it easy for me to talk about my delivery.
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

21. Apart from medical staff and your partner, have you wanted to talk about your delivery with other people.
1. ☐ A lot of the time
2. ☐ Sometimes
3. ☐ Only occasionally
4. ☐ Rarely
5. ☐ Not at all

22. I have had every opportunity I wanted to talk about my experience of birth
1. ☐ Strongly disagree
2. ☐ Disagree
3. ☐ Undecided
4. ☐ Agree
5. ☐ Strongly agree

Impact of Events Scale

Giving birth is considered by many as a stressful life event. Below is a list of comments made by people after stressful life events. Please tick each item indicating how frequently these comments were true for you during the last seven days. If they did not occur during that time, please tick “not at all”.

	Never	Rarely	Sometimes	Often
1. I thought about it when I didn’t mean to	☐	☐	☐	☐
2. I avoided letting myself get upset when I thought about it or was reminded of it.	☐	☐	☐	☐
3. I tried to remove it from memory	☐	☐	☐	☐
4. I had trouble falling asleep or staying asleep because of pictures or thoughts about it that came into my mind	☐	☐	☐	☐
5. I had waves of strong feeling about it	☐	☐	☐	☐
6. I had dreams about it	☐	☐	☐	☐
7. I stayed away from reminders of it	☐	☐	☐	☐
8. I felt as if it hadn’t happened or wasn’t real	☐	☐	☐	☐
9. I tried not to talk about it	☐	☐	☐	☐
10. Pictures about it popped into my mind	☐	☐	☐	☐
11. Other things kept making me think about it	☐	☐	☐	☐
12. I was aware that I still had a lot of feelings about it, but I didn’t deal with them	☐	☐	☐	☐
13. I tried not to think about it.	☐	☐	☐	☐
14. Any reminder brought back feelings about it.	☐	☐	☐	☐
15. My feelings about it were kind of numb.	☐	☐	☐	☐

Appendix C

PTSD Symptom Scale: Interview Version

Date of delivery:
Date of interview:

Describe briefly below the stressful event reported by the individual.

_____
_____
_____

How long before the interview did the event occur?
☐ < one month
☐ 4 - 6 months

Reexperiencing Symptoms (need one)

1. ☐ Have you had recurrent or intrusive thoughts or recollections about the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

2. ☐ Have you been having recurrent bad dreams about the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

3. ☐ Have you had the experience of suddenly reliving the birth, flashbacks of , acting or feeling as if it were re-occurring?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

4. ☐ Have you been intensely emotionally upset when reminded of the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

Avoidance Symptoms (need three)

5. ☐ Have you persistently been making efforts to avoid thoughts or feelings associated with the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

6. ☐ Have you persistently been making efforts to avoid activities, situations, or places that remind you of the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

7. ☐ Are there any important aspects of the birth that you still cannot remember?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

8. ☐ Have you markedly lost interest in free time activities since the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

9. ☐ Have you felt detached or cut off from others around you since the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

10. ☐ Have you felt that your ability to experience emotions is less?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

11. ☐ Have you felt that any future plans or hopes have changed because of the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

Arousal Symptoms (need two)

12. ☐ Have you been having persistent difficulty falling or staying asleep?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

13. ☐ Have you been continuously irritable or having outbursts of anger?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

14. ☐ Have you been having persistent difficulty concentrating?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

15. ☐ Are you overly alert since the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

16. ☐ Have you been jumpier, more easily startled, since the birth?
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

17. ☐ Have you been having intense physical reactions when reminded of the birth
0 = Not at all
1 = Once per week or less/a little bit/once in a while
2 = 2 - 4 times per week/some what/ half the time
3 = 5 or more times per week/ very much / almost always

Appendix D

Information and consent forms

Title: Birthing and the development of stress in mothers
Investigator: Debra Creedy, Senior Lecturer, Faculty of Nursing & Health.
Institution: Griffith University
(Work) 3875 5253

INFORMATION SHEET

Giving birth is an important life event. As a registered nurse and researcher I am interested in your birthing experiences and the impact of these experiences on your life. Your information may assist in the future development of appropriate obstetric and midwifery care during labour and the following period.

If you agree to participate in this study you will be asked to complete a set of questions on two occasions. The first occasion will occur sometime during the last 12 weeks of your pregnancy. This interview will be conducted in person at the Antenatal Clinic or class. The second occasion will occur sometime between 4 and 6 weeks after the birth of your baby. At this time, you will be contacted by phone to arrange a convenient time to either answer questions over the phone or to arrange for the questionnaires to be mailed to you. It will take around 20 minutes to complete the questions. There is another phase to this study where a small subgroup of women will be invited to participate in an in-depth interview. The interview will take approximately 40 minutes to complete. Your consent and willingness to participate will be sought at each stage of this study.

All information will be treated in the strictest confidence and no names will be used. You will be asked to provide a contact address and phone number on a separate information sheet. You will be given a code number for the study. All questionnaires will be identified only by this code number and you are asked not to write your name on any of the questionnaires. Only group data, from which no individual could be identified, will be published. These measures are to ensure that your privacy is protected. The questionnaires and the personal details sheet will be kept separately in a secure place. On completion of the study I will send participants a brief report on the findings.

You do not have to be involved in the study unless you wish to and you are free to leave the study at any time without explanation. I would be pleased to answer any questions you may have. If you have any concerns in relation to this study you can also contact Dr Ian Shochet (Ph 3875 5393) or Professor Margaret Dunlop (3875 7988) for further information. If you are willing to be involved please complete the attached consent form.

Thanking you in anticipation

Debra Creedy

Title: Birthing and the development of stress in mothers
Investigator: Debra Creedy, Senior Lecturer, Faculty of Nursing & Health.
Institution: Griffith University
(Work) 3875 5253
(Home) 3812 2194

CONSENT FORM

I ..... acknowledge that the study has been explained to me and any questions have been answered to my satisfaction. I understand that I may withdraw my agreement to participate in the study at any time.

I understand that if I wish to participate in this study I will be asked to complete a set of questions on two occasions. The first occasion will occur sometime during the last 12 weeks of my pregnancy. This interview will be conducted in person at the Antenatal Clinic or class. The second occasion will occur sometime between 4 to 6 weeks after the birth of my baby. At this time, I will be contacted by phone to arrange a convenient time to either answer questions over the phone or to arrange for the questionnaires to be mailed to me. It will take around 20 minutes to complete the questions. There is another phase to this study where a small subgroup of women will be invited to participate in an in-depth interview. The interview will take approximately 40 minutes to complete. My consent and willingness to participate will be sought at each stage of this study.

I understand that any information collected is for the purposes of research and will be treated with the strictest confidence. I have been assured that no information about the study will be published in a form that would reveal my identity. If I have any concerns in relation to this study I can contact Dr Ian Shochet (Ph 3875 5393) or Professor Margaret Dunlop (3875 7988) for further information.

....
Signature of Participant Date

.....
Printed name

....
Signature of Witness Date

.....
Printed name

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