

Post-traumatic stress following childbirth: a review of the emerging literature and directions for research and practice

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Abstract *The aim of this paper is to provide a review of the emerging literature on the relationship between the experience of difficult childbirth and the development of post-traumatic stress disorder (PTSD). First, we discuss the criteria for diagnosis of PTSD and the implications that changes in these criteria over the past decade have had for women who experience a traumatic childbirth. Although the literature is limited, it can be concluded that women who experience traumatic childbirth may go on to develop clinically significant symptoms of PTSD in the postnatal period. Second, we discuss the clinical presentation of PTSD in women who undergo childbirth. Sexual avoidance and parenting problems may be features particular to women who experience difficult and traumatic childbirth. Third, we review the empirical evidence for risk factors to the development of PTSD including childbirth related, personality and individual difference factors, and social psychological factors. Recommendation for investigation into the clinical effectiveness of social support provision for women who have experienced traumatic childbirth is made, along with recommendations for investigation into the usefulness of routine screening for PTSD.*

Introduction

It has long been recognized that some women following a difficult childbirth go on to develop psychological problems. However, it is only comparatively recently that it has become accepted that women can develop post-traumatic stress disorder (PTSD) following difficult childbirth. The aim of this paper is to provide a review of the emerging literature on the relationship between the experience of difficult childbirth and the development of PTSD. First, we will discuss the criteria for diagnosis of PTSD and the implications that changes in these criteria over the past decade have had for women who experience a traumatic childbirth. Second, we will discuss the clinical presentation of PTSD in women who undergo childbirth. Third, we will review the empirical evidence for risk factors to the development of PTSD including childbirth related, personality and individual difference factors, and social psychological factors.

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Post-traumatic stress disorder

The Diagnostic and Statistical Manual of the American Psychiatric Association (1994) categorizes PTSD symptoms into three groups for clinical diagnosis: (1) re-experiencing of the traumatic event including intrusions, dreams and re-experiencing emotions associated with the trauma; (2) Avoidance of stimuli associated with the trauma and numbing of emotional responsiveness e.g. avoiding thoughts and feelings about the trauma, avoiding activities associated with the trauma, and emotional changes such as detachment from others; (3) symptoms of hyperarousal such as difficulty sleeping, concentrating, irritability, and excessive startle responses.

Since PTSD was first recognized as a distinct diagnostic disorder in DSM-III (American Psychiatric Association, 1980), it has been associated with a number of traumatic life events (see Joseph *et al.*, 1997). However, it is only comparatively recently that difficult childbirth has been recognized as an event that can also lead to the development of PTSD. This is because of the changes in the 1994 edition of the Diagnostic and Statistical Manual (DSM-IV) in the definition of what constitutes a traumatic event. In 1994, DSM-IV included a revised definition of criterion A, i.e., of what constitutes a traumatic event. A traumatic event was now seen as an event in which the person witnessed or confronted serious physical threat or injury to themselves or others and in which the person responded with feelings of fear, helplessness or horror.

Previous editions of DSM (American Psychiatric Association, 1980; 1987) had defined a traumatic event as something outside the range of usual human experience, leading to confusion among clinicians and researchers as to whether childbirth could be seen as an appropriate stressor for the necessary diagnosis of PTSD (e.g., Moleman *et al.*, 1992; Ralph & Alexander, 1994). However, through a culmination of research documenting PTSD symptoms following a range of events that were not viewed as outside the range of usual human experience, it became necessary to amend the definition of what constitutes a traumatic event to include subjective perceptions (see Joseph *et al.*, 1997). PTSD symptoms had, for example, been reported in parents of children born premature who required admission to a neonatal intensive care, patients undergoing medical procedures, and in women following miscarriage, and other gynaecological procedures (Affleck *et al.*, 1991; Fisch & Tachmore, 1989; Kessler *et al.*, 1995; Shalev *et al.*, 1993). The revision of criterion A meant those women who experienced difficult childbirth could now fully meet the criteria for diagnosis of PTSD.

Clinical presentation

Although strictly speaking a PTSD diagnosis could only be made subsequent to DSM-IV, the presence of PTSD-like symptomatology was first documented in the late 1970s, when two French obstetricians identified symptoms in a group of 10 women undergoing obstetric care over a 2-year period (see, Arizmendi & Affonso, 1987; Beech & Robinson, 1985). Following the introduction of DSM-IV, case reports documenting PTSD as defined by the American Psychiatric Association quickly appeared (e.g., Ballard *et al.*, 1995) and there is now no doubt that some women can develop PTSD in relation to a traumatic birth experience.

With the change in DSM criteria for PTSD researchers began to more systematically examine the relationship between traumatic birth experiences and PTSD. We have attempted to be as inclusive as possible in our review and identified studies using PsychINFO and MEDLINE searches using mixed key word topic headings of 'PTSD and postnatal depression' and 'PTSD and childbirth', 'PTSD and labour', 'PTSD and caesarean section'.

Postnatal depression and PTSD. Evidence suggests that it is not uncommon for women with PTSD to also present with postnatal depression (Ballard *et al.*, 1995; Pfof *et al.*, 1990; Reynolds, 1997; Whiffen, 1992). This led to the question of whether postnatal depression and PTSD are actually distinct disorders. Diagnostically, there is much symptom overlap between the diagnosis of PTSD and postnatal depression.

DSM-IV (American Psychiatric Association, 1994) criteria for PTSD consists of symptoms such as; 'marked diminished interest in significant activities', 'feelings of detachment and estrangement from others', 'restricted range of affect', 'sense of foreshortened future', 'difficulty in staying or falling asleep', 'difficulty in concentrating'. These depressive like symptoms are also characteristic of postnatal depression. However, although there is some degree of symptom overlap between PTSD and postnatal depression, other questionnaire based evidence suggests that postnatal depression and PTSD are distinct and that the presence of one does not always imply the presence of the other (Lyons, 1998).

Czarnocka and Slade (2000) found that in the eight women they identified as experiencing full PTSD symptoms, only six had elevated scores indicative of depression on the Edinburgh Postnatal Depression Scale (EPDS). They express concern that currently only postnatal depression is routinely measured in the postnatal period with the EPDS. On the basis of these results, Czarnocka and Slade (2000) suggest that it is possible that 25% of women who are fully symptomatic with PTSD could remain undetected because they are not also experiencing postnatal depression. Further investigation into whether routine measurement of PTSD symptoms as well as postnatal depression would be useful is recommended.

Particular features

One of the questions in the PTSD literature is whether there is a generic PTSD or whether there are specific types of PTSD according to trauma group (see Joseph *et al.*, 1997). The emerging evidence suggests that there are at least some idiosyncratic features in the presentation of PTSD in women following traumatic childbirth. Avoidance is a defining characteristic of PTSD, and in women with PTSD following childbirth sexual avoidance would seem to be one manifestation of avoidance along with a fear of childbirth.

Sexual avoidance and fear of childbirth. Fones (1996), for example, reports the case of Mrs T, a Chinese woman of 40 years who presented with intrusive memories of the painful labour she experienced 9 years earlier. She experienced anxiety, panic symptoms and intrusions consistent with DSM-IV criteria for PTSD of the chronic type. Although her relationship with her son developed well, Mrs T was reported to have become cold and distant to her partner. Mrs T found that during the first year following delivery she could not have a sexual relationship with her partner. When she did resume a sexual relationship she was extremely anxious about accidentally conceiving despite the use of contraception. The behaviour Mrs T demonstrated towards her partner was consistent with DSM-IV criteria of avoidance of stimuli associated with the trauma. In fact Mrs T's sexual difficulties and intrusions did resolve markedly following the surgical procedure tubal ligation to prevent further pregnancies. Three months after the surgery Mrs T no longer experienced symptoms of PTSD and her difficulties resolved. Similarly, O'Driscoll (1994) cites the case of a woman who could not resume a sexual relationship with her partner following a traumatic birth because any form of sexual activity resulted in her re-living and re-experiencing the pain and distress she experienced during her traumatic labour. Thus, sexual avoidance could possibly manifest itself in women with PTSD following childbirth.

Furthermore, many women request planned caesarean sections in attempt to prevent being re-traumatized by childbirth (Ryding, 1991; 1993). Tokophobia is now recognized as an

unreasoning dread of childbirth, and it is thought that secondary tokophobia can occur following traumatic childbirth (Hofberg & Brockington, 2000). The fear of childbirth can be so extreme that women with a history of traumatic labour may request termination if they accidentally conceive (Goldbeck-Wood, 1996). Ryding (1993) found that some women who requested elective sections had previous traumatic labours that involved severe pain or difficulties gaining assistance during labour. In addition there were other women who requested planned caesareans because they feared the loss of their babies. These women had past experiences of birth complications or they had experienced a prior frightening emergency caesarean section in earlier pregnancies. In one prospective study it was found that amongst a sample of 28 first-time mothers who requested elective caesarean section with subsequent births, all of them recalled traumatic memories of previous childbirth experiences. In fact 50% of this sample of women had experienced emergency caesarean sections with their previous deliveries (Ryding *et al.*, 1997).

Sjogren (1997) interviewed women with an extreme fear of childbirth including first-time mothers and women who had undergone earlier childbirth. The women's anxiety over the delivery was related to lack of trust of obstetric staff, fears of their own incompetence, fear of death to themselves or their infant, fear of pain and loss of control. A significant association was found between previous complicated delivery and fear of death. A planned caesarean section may reduce the risk of further trauma and the feeling of a lack of control, but surgical deliveries themselves may have detrimental effects on a woman's postnatal psychological adjustment. In fact caesarean deliveries are more likely to be associated with maternal mortality and morbidity (Shearer, 1991). Stein (1999) compared predictors of adjustment in women undergoing caesarean or normal deliveries. The authors concluded that women who underwent surgical deliveries experienced greater feelings of loss, grief, failure and lower levels of self-esteem. Even if a woman does not develop PTSD following a difficult birth, it is possible that the experience could make a woman vulnerable to PTSD subsequent to other traumatic events in her life.

Mother-infant attachment and parenting problems. As well as sexual avoidance, mother-infant attachment difficulties and related parenting problems would also seem to constitute another possible idiosyncratic feature in the presentation of PTSD in women following childbirth. It is thought, although the evidence remains sparse, that attachment difficulties may be frequent comorbid problems in women who develop PTSD. In the study by Ballard *et al.* (1995), there were marked mother/infant attachment problems in two of the four cases. Other case evidence indicates that women with PTSD may experience difficulty breastfeeding, and bonding with their babies (Reynolds, 1997).

Consistent with DSM-IV criteria for persistent re-experiencing of the trauma; the child could be a reminder of the traumatic delivery and elicit re-experiencing of the event in the woman. A woman may seek to avoid the child because of his or her association with the traumatic birth. One case report highlights how one woman with PTSD following childbirth became very irritable and detached from her children, and often felt fearful of them (Weaver, 1997).

It is then possible that PTSD symptoms could have a detrimental effect on the early relationship between a woman and her baby. In extreme cases this could lead to maternal neglect and could raise concerns for the need for child protection interventions. Although empirical studies into this issue have yet to be carried out, studies that have looked at the parenting behaviour of depressed women in interactions with their babies indicate that they demonstrate diminished emotional involvement, impaired communication, are less responsive to the child, and demonstrate less synchrony with their infants (Field *et al.*, 1990; Weismann &

Paykel, 1974). The children of depressed mothers are at an increased risk of developing psychiatric problems and behavioural disturbances and they have also been found to have social and achievement deficits (Anderson & Hammen, 1993). It has also been found that the children of depressed women continue to have significant adjustment difficulties even when the disorder remits (Billings & Moos, 1986).

These findings highlight the importance of the prevention of psychological distress in new mothers as opposed to treatment and cure when distress is evident, and it might be hypothesized that a similar pattern of results will emerge with mothers who have PTSD. In particular, those mothers who present with emotional numbing symptoms may be most at risk of parenting problems. For example, a woman could present with symptoms such as maternal disengagement. This is characterized by the mother's lack of emotional responsiveness to the child's behaviour; demonstrated by a lack of communication and difficulty interacting appropriately with the infant (Field *et al.*, 1990; Goodman & Brumley, 1990). Other symptoms of PTSD, such as increased arousal could lead a woman to become more irritable, critical, and anxious with her child. Lovejoy *et al.* (2000) conducted a meta-analysis of 46 observational studies examining the relationship between maternal depression and parenting behaviour. They conclude that irritable, critical and coercive parenting is most likely to be associated with parenting difficulties. The authors found that parenting difficulties were not necessarily a consequence of maternal depression but more likely to be due to more general maternal psychological distress; maternal psychological distress is particularly disruptive with younger children who are more dependent on the parent initiating interactions (Lovejoy *et al.*, 2000).

In summary, the evidence suggests that there may be a number of features particular to the clinical presentation of PTSD in women following childbirth such as sexual avoidance and fear of childbirth, and attachment and parenting problems. However, we would strongly caution that this is speculative at this stage, and further investigation into the clinical presentation of PTSD in women following traumatic childbirth is needed.

Prevalence and time course of PTSD

Menage (1993) conducted a retrospective cross-sectional study with 500 volunteer participants that she recruited from advertisements in magazines and newspapers. She examined the prevalence of PTSD symptoms in women that had obstetric and gynaecological procedures. From the total 500 participants, 20% describe undergoing an obstetric and/or gynaecological procedure at least 1 month earlier that they rated as being very distressing or terrifying, and out of the range of normal experience. Menage then re-contacted the 20% that had experienced the distressing procedures and asked them to complete a measure of PTSD symptoms. Thirty respondents were identified with scores that fulfilled the diagnostic criteria for PTSD. These results suggest that around one-third of those who experience traumatic obstetric and/or gynaecological procedures may go on to develop PTSD. However, respondents that took part in Menage's research were highly self selected i.e. through advertisements in magazines and newspapers in the UK, and so it is not certain that these findings generalize to a wider population.

In order to assess this question of generalizability other research has attempted to obtain representative samples. Wijma *et al.* (1997) conducted a cross-sectional study with 1640 Swedish women who had given birth over a 1-year period. From the total sample, 28 women were identified as having PTSD following the delivery. These results suggest that around 2% of all women may develop PTSD in the first year following childbirth.

Other evidence suggests that the prevalence of acute symptoms may be greater. Creedy *et al.* (2000) conducted a prospective longitudinal study with 499 women in Australia. They found that when they measured PTSD symptoms 4–6 weeks after delivery one in three

women described an aspect of the labour and delivery that was traumatic. From the sample 28 women (5.6%) described symptoms consistent with DSM-IV criteria for acute stress disorder. Acute stress disorder has similar diagnostic criteria to PTSD but whereas PTSD can not be diagnosed until at least 1 month subsequent to the event, acute stress disorder occurs within 4 weeks of the event.

Furthermore, it is likely that some women who do not meet the full diagnostic criteria for PTSD will be partially symptomatic and considerably distressed. Czarnocka and Slade (2000) conducted a prospective study with 264 women who underwent normal spontaneous vaginal deliveries. Women were selected that had undergone a 'normal' spontaneous vaginal delivery of a healthy baby irrespective of parity (whether this was their first or subsequent child). From the total sample 3% (eight participants) had symptoms consistent with DSM-IV (APA, 1994), although a further 64 (24.2%) were partially symptomatic experiencing some symptoms such as hyperarousal, avoidance, or intrusions, as indicated by questionnaire self-report.

Factors in the development and maintenance of PTSD

A number of risk factors for PTSD following difficult childbirth have been identified from the literature. In the following section we will discuss the research investigating those aspects of delivery experience that seem to be associated with a risk of PTSD, personality and individual difference factors, and social psychological factors.

Delivery experience factors

Type of delivery. Evidence that invasive procedures may increase the risk of PTSD comes from Ryding *et al.* (1997) who conducted interviews with 26 women who had undergone emergency caesarean section. Although none were found to meet full diagnostic criteria for PTSD, 13 reported some symptoms of PTSD. It has been suggested that emergency caesarean section is likely to be associated with postpartum emotional difficulties (Gottlieb & Barrett, 1986). This might be because of the unpredictability of the procedure. Also, memories of past sexual abuse could also be triggered by certain procedures occurring during childbirth (Crompton, 1996). If there are signs that a woman is re-experiencing a past traumatic event during her labour, for instance if she becomes very withdrawn, screams out of control, or refuses an internal examination this could be an indicator of re-traumatization.

However women that undergo other forms of instrumental delivery may also be at risk of PTSD reactions. An instrumental delivery refers to an assisted vaginal delivery by either forceps or ventouse extraction, with an unplanned episiotomy. An episiotomy is a surgical incision made to the perineum under local anaesthetic to enable forceps to be entered into the vagina and birth canal. These procedures are usually performed at the end stage of labour when the baby has entered the birth canal, but cannot be delivered normally.

MaClean *et al.* (2000) conducted a study with 40 women that had recently given birth by one of four obstetric procedures; spontaneous normal delivery, induced vaginal delivery, instrumental vaginal delivery, or emergency caesarian section. The author's measured PTSD symptoms at 6 weeks post delivery. Although there were no significant differences between the four groups on symptom scores, women that had instrumental deliveries were more likely to rate the labour as extremely distressing compared to the other three groups. MaClean *et al.* (2000) conclude that women who have instrumental deliveries may perceive the birth experiences as more traumatic than women that have caesarean sections or normal deliveries.

Similarly, Ryding *et al.* (1998) compared the incidence of PTSD in four groups of women undergoing normal delivery, instrumental delivery, elective and emergency caesarean section.

They found that at 1 month after the delivery both the emergency caesarean section and instrumental delivery groups were more likely to experience symptoms of PTSD. The findings indicate that women can perceive labour as traumatic irrespective of the type of obstetric procedure that is conducted, although invasive procedures such as emergency caesarean section or instrumental delivery are more likely to be perceived as traumatic. Other work has therefore focused on the subjective aspects of delivery experiences.

Fear for self and baby. In the study by Wijma *et al.* (1997) with women who had given birth over a 1-year period, the authors found that a diagnosis of PTSD was associated with the mother's feelings of fear for herself and her baby. Other studies have also drawn attention to fear as an important predictor of later problems in women during labour (Czarnocka & Slade, 2000; Moleman *et al.* 1992; Ryding, 1993). In particular, the fear of losing their babies has been found to be an important contributory factor to PTSD in mothers of premature infants (Affleck *et al.*, 1991). Affleck *et al.* (1991) conducted a longitudinal study with 114 mothers who gave birth to premature infants. At 6 and 18 months after the child's birth, many of the women spoke of painful memories of the childbirth and the infant's hospitalizations. The women described themselves as living in constant fear that their babies could die and many reported symptoms of intrusions and avoidance.

Perceptions of control. Lyons (1998) conducted a study with a sample of 42 first time mothers who were interviewed shortly after birth for ratings of pain during labour, personality characteristics, feelings of control, and fear of physical harm and death (Lyons, 1998). The women were then followed up again 1 month later and asked to complete measures of perceived social support, as well as the Edinburgh Postnatal Depression Screen and the Impact of Event Scale. The author found that the association between feelings of control during the delivery, ratings of negative pain descriptors and Impact of Event Scale scores were strongly associated. She concluded that feeling in control during the labour and delivery and knowing what to expect were important protective factors against the development of PTSD.

Czarnocka and Slade (2000) found that women with symptoms of PTSD were more likely to feel that they had little control during the labour, to have higher ratings of trait anxiety, and greater fear during the labour for their babies and their own wellbeing. Symptomatic women also felt less well supported by their partner and staff, and less informed about what was happening. In addition women reporting PTSD symptoms were more likely to attribute blame to themselves and staff for any problems that occurred and were less able to cope with what was happening.

Personality and prior vulnerability factors

Czarnocka and Slade (2000) also found that trait anxiety was associated with scores on the PTSD measures. The study was cross-sectional and provided no evidence for a causal relation, although it is possible as Czarnocka and Slade (2000) suggest, that trait anxiety may reflect a vulnerability factor to the development of PTSD. Further research is needed to test this hypothesis and to rule out competing explanations. An alternative explanation could however be that the association is accounted for by a general response bias to the questionnaires. The role of personality dimensions and whether they are able to predict PTSD over and above childbirth related factors remains a focus for investigation.

Other research has investigated other prior vulnerability factors. In the study by Wijma *et al.* (1997) with Swedish women who had given birth over a 1-year period, a diagnosis of PTSD was associated with a history of receiving psychiatric/psychological counselling. Although this

study would suggest that prior history factors might predispose women to PTSD, this research relies on retrospective accounts and there is no clear evidence for a causal relation.

Wijma *et al.* (1997) recommend on the basis of their findings that screening women for pre-existing traumatic life events prior to delivery may help to identify those at risk of PTSD after childbirth. It is recognized in the diagnostic criteria that people with a history of PTSD may relive the original traumatic experience if they encounter a similar experience (American Psychiatric Association, 1994).

Cognitive vulnerability. Although not testing the association with PTSD *per se*, other research has found evidence that dysfunctional attitudes are predictive of postpartum depressive symptomatology (Grazioli & Terry, 2000), and it might be predicted that there are cognitive vulnerabilities to PTSD as well, although this remains to be investigated in women who experience difficult childbirth. Certainly, the evidence from other PTSD prone populations suggests that there are some attitudinal vulnerabilities, such as those concerned with the expression of emotions (Nightingale & Williams, 2000).

Support interventions. Social support has been found to be an important protective factor in other PTSD prone populations (Joseph, 1999) and interventions involving the provision of support appear to be effective in promoting mental health following childbirth (Collins *et al.*, 1993; Elliott *et al.*, 2000). The Cochrane Database of Systematic Reviews highlights how continuous caregiver support during labour from a female caregiver in the form of a midwife or doula (trained layperson) can have a number of beneficial effects for both mother and infant (Hodnett, 2000). Fourteen trials were reviewed involving 5000 women. The results indicate that the continuous presence of a caregiver reduced the likelihood of medication for pain, operative vaginal delivery, caesarean section, and led to better baby apgar (a universal assessment of a baby's condition at birth). However evidence that such continuous support would also be protective against the development of PTSD remains to be gathered. The role of social support is an important avenue for further research. In particular, it is not certain whether particular types of social support are more or less useful to women at particular points in time.

A number of articles and published books have advocated the benefits of after-care trauma services' for women who have experienced a traumatic birth (e.g., Abbott *et al.*, 1997; Charles, 1997; Friend, 1996; Smith & Mitchell, 1996). The service is offered during the postnatal period and involves a woman voluntarily seeking a consultation with a midwife. It is not a counselling service, but involves the midwife clarifying why procedures were conducted and answering any questions the woman may have. The service can result in a referral to clinical or health psychology services if this is consistent with the woman's needs (Charles & Curtis, 1994). These services appear to be important to allow women to express any concerns or distress that they experienced during delivery, especially women who have few other sources of support. Again, there is a need for evaluative research into the effectiveness of after-care services for women who have experienced a traumatic birth.

Conclusions

Changes in DSM-IV to criterion A meant that psychiatrists and psychologists were now able to classify traumatic stress responses after childbirth as PTSD. Following on from case study reports of women who experienced difficult childbirth there is now evidence of women presenting with clinical symptoms consistent with DSM-IV criteria of avoidance, re-experiencing and increased arousal, with implications for maternal wellbeing, relationships with significant others, and disruption in early mother-infant relationships.

Theoretical models of PTSD acknowledge the role of individual differences and the influence of psychosocial factors; which can help explain why some women experience PTSD following a difficult experience of childbirth whilst others do not. A number of risk factors to PTSD following childbirth have been discussed. However, the literature base is limited and there is a need for longitudinal research studies to assess risk factors that may contribute to PTSD over time.

There is some symptom overlap between postnatal depression and PTSD. However, it is thought that these are distinct disorders with the consequence that women could present with PTSD without postnatal depression. Health visitors and other primary care staff who respond to postnatal distress and depression should also be alert to nightmares, flashbacks, and other symptoms of PTSD and should refer to specialist services when necessary.

References

- ABBOTT, H., BICK, D. & McARTHUR, C. (1997). Health afterbirth. In: C. HENDERSON & K. JONES (Eds), *Essential midwifery*. London: Mosby.
- AFFLECK, G., TENNEN, H. & ROWE, J. (1991). *Infants in crisis: how parents cope with newborn intensive care and its aftermath*. New York: Springer.
- AMERICAN PSYCHIATRIC ASSOCIATION (1980). *Diagnostic and statistical manual of mental disorders*. 3rd edn. revised. Washington DC: American Psychiatric Association.
- AMERICAN PSYCHIATRIC ASSOCIATION (1987). *Diagnostic and statistical manual of mental disorders*. 3rd edn. revised. Washington DC: American Psychiatric Association.
- AMERICAN PSYCHIATRIC ASSOCIATION (1994). *Diagnostic and statistical manual of mental disorders*. 4th edn. Washington DC: American Psychiatric Association.
- ANDERSON, C. A. & HAMMEN, C. L. (1993). Psychosocial outcomes of unipolar depressed bipolar medically ill normal women: A longitudinal study. *Journal of Consulting and Clinical Psychology*, 61, 448–454.
- ARIZMENDI, T. G. & AFFONSO, D. D. (1987). Stressful events related to pregnancy postpartum. *Journal of Psychosomatic Research*, 31, 743–756.
- BALLARD, C. G., STANLEY, A. K. & BROCKINGTON, I. F. (1995). Posttraumatic stress disorder (PTSD) after childbirth. *British Journal of Psychiatry*, 166, 525–528.
- BEECH, A. B. & ROBINSON, J. (1985). Nightmares following childbirth. *British Journal of Psychiatry*, 147, 586.
- BILLINGS, A. G. & MOOS, R. H. (1986). Children of parents with unipolar depression: A controlled 1-year follow-up. *Journal of Abnormal Child Psychology*, 14, 149–166.
- CHARLES, C. (1997). When the dream goes wrong – posttraumatic stress disorder. *Midwives*, 11, 250–252.
- CHARLES, J. & CURTIS, L. (1994). Birth afterthoughts. *Midwives*, 107, 266–268.
- COLLINS, N. L., DUNKEL-SCHETTER, C., LOBEL, M. & SCRIMSHAW, S. C. M. (1993). Social support in pregnancy: Psychosocial correlates of birth outcomes postpartum depression. *Journal of Personality and Social Psychology*, 65, 1243–1258.
- CREEDY, D. K., SHOCHET, I. M. & HORSFALL, J. (2000). Childbirth and the development of acute trauma symptoms: Incidence contributing factors. *Birth Issues in Perinatal Care*, 27, 104–111.
- CROMPTON, J. (1996). Post-traumatic stress disorder and childbirth. *British Journal of Midwifery*, 4, 290–293.
- CZARNOCKA, J. & SLADE, P. (2000). Prevalence and predictors of post-traumatic stress symptoms following childbirth. *British Journal of Clinical Psychology*, 39, 35–51.
- ELLIOTT, S. A., LEVERTON, T. J., SANJACK, M., TURNER, H., COWMEADOW, P., HOPKINS J. & BUSHNELL, D. (2000). Promoting mental health after childbirth: A controlled trial of primary prevention of postnatal depression. *British Journal of Clinical Psychology*, 39, 223–241.
- FIELD, T., HEALY, B., GOLDSTEIN, S. & GUTHERTZ, M. (1990). Behaviour-state matching synchrony in mother-infant interactions of nondepressed versus depressed dyads. *Developmental Psychology*, 26, 7–14.
- FISCH, R. Z. & TACHMORE, O. (1989). Iatrogenic post-traumatic stress disorder. *Lancet*, 2, 1397.
- FONES, C. (1996). Posttraumatic stress disorder occurring after painful childbirth. *Journal of Nervous and Mental Disease*, 18, 195–196.
- FRIEND, B. (1996). Thoughts after birth. *Nursing Times*, 92, 24–25.
- GOLDBECK-WOOD, S. (1996). PTSD may follow childbirth. *British Medical Journal*, 313, 774.
- GOODMAN, S. H. & BRUMLEY, H. E. (1990). Schizophrenic and depressed mothers relational deficits in parenting. *Developmental Psychology*, 26, 31–39.

- GOTTLIEB, S. E. & BARRETT, D. E. (1986). Effects of unanticipated cesarean section on mothers and infants and their interaction in the first month of life. *Journal of Developmental Behaviour Pediatrics*, 7, 180–185.
- GRAZIOLI, R. & TERRY, D. J. (2000). The role of cognitive vulnerability in the prediction of postpartum symptomatology. *British Journal of Clinical Psychology*, 39, 329–347.
- HODNETT, E. D. (2000). Caregiver support for women during childbirth. *The Cochrane Database of Systematic Reviews*, 4, 1–22.
- HOFBERG, K. & BROCKINGTON, I. (2000). Tokophobia: an unreasoning dread of childbirth. *British Journal of Psychiatry*, 176, 83–85.
- JOSEPH, S. (1999). Social support and mental health following trauma. In: W. YULE (Ed.), *Post-traumatic stress disorders: Concepts therapy*. Chichester: Wiley.
- JOSEPH, S., WILLIAMS, R. & YULE, W. (1997). *Understanding post-traumatic stress: A psychosocial perspective on PTSD treatment*. Chichester: Wiley.
- KESSLER, R. C., SONNEGA, A., BROMET, E., HUGHES, M. & NELSON, C. B. (1995). Posttraumatic stress disorder in the national co-morbidity survey. *Archives of General Psychiatry*, 52, 1048–1060.
- LYONS, S. (1998). A prospective study of posttraumatic stress symptoms 1 month following childbirth. *Journal of Reproductive and Infant Psychology*, 16, 91–105.
- LOVEJOY, M. C., GRACZYK, P. A., O'HARE, E. & NEUMAN, G. (2000). Maternal depression parenting behaviour; A meta-analytic review. *Clinical Psychology Review*, 120, 561–592.
- MACLEAN, L. I., MCDERMOTT, M. R. & MAY, C. P. (2000). Method of delivery and subjective distress: women's emotional responses to childbirth practices. *Journal of Reproductive and Infant Psychology*, 18, 153–162.
- MENAGE, J. (1993). Post-traumatic stress disorder in women who have undergone obstetric and/or gynaecological procedures. *Journal of Reproductive and Infant Psychology*, 11, 221–228.
- MOLEMAN, N., VAN DER HART, O. & VAN DER KOLK, B. A. (1992). The partus stress reaction: a neglected etiological factor in post-partum psychiatric disorders. *Journal of Nervous and Mental Disease*, 180, 271–272.
- NIGHTINGALE, J. & WILLIAMS, R. M. (2000). Attitudes to emotional expression and personality in predicting post-traumatic stress disorder. *British Journal of Clinical Psychology*, 39, 243–254.
- O'DRISCOLL, M. (1994). Midwives, childbirth and sexuality. *British Journal of Midwifery*, 2, 39–41.
- PFOST, K., STEVENS, M. & LUM, C. (1990). The relationship of demographic variables antepartum depression stress to postpartum depression. *Journal of Clinical Psychology*, 46, 588–592.
- RALPH, K. & ALEXANDER, J. (1994). Borne under stress. *Nursing Times*, 90, 28–30.
- REYNOLDS, J. L. (1997). Posttraumatic stress disorder after childbirth: the phenomenon of traumatic birth. *Canadian Medical Association Journal*, 156, 831–835.
- RYDING, E. L. (1991). Psychosocial indications for caesarean section: a retrospective study of 43 cases. *Acta Obstetrica Gynaecologica et Scandinavica*, 70, 47–49.
- RYDING, E. L. (1993). Investigation of 33 women who demanded a caesarean section for personal reasons. *Acta Obstetrica et Gynaecologica Scandinavica*, 72, 280–285.
- RYDING, E. L., WIJMA, B. & WIJMA, K. (1997). Posttraumatic stress reactions after emergency caesarean section. *Acta Obstetrica et Gynaecologica Scandinavica*, 76, 856–861.
- RYDING, E. L., WIJMA, K. & WIJMA, B. (1998). Psychological impact of emergency caesarean section in comparison with elective caesarean section instrumental normal vaginal delivery. *Journal of Psychosomatic Obstetrics & Gynecology*, 19, 135–144.
- SHALEV, A. Y., SCHREIBER, S., GALAI, T. & MELMED, R. N. (1993). Post-traumatic stress disorder following medical events. *British Journal of Clinical Psychology*, 32, 247–253.
- SHEARER, E. (1991). Caesarean section: medical costs and benefits. *Social Science and Medicine*, 37, 1223–1231.
- SJOGREN, B. (1997). Reasons for anxiety about childbirth in 100 pregnant women. *Journal of Psychosomatic Obstetrics & Gynaecology*, 18, 266–272.
- SMITH, J. A. & MITCHELL, S. (1996). Debriefing after childbirth: a tool for effective risk management. *British Journal of Midwifery*, 4, 581–586.
- STEIN, D. R. (1999). Diminished control and unmet expectations: Testing a theory of adjustment to caesarian delivery (childbirth satisfaction). *Dissertation Abstracts International: Section B The Sciences Engineering*, 60, 3015.
- WEAVER, J. (1997). Childbirth: preventing posttraumatic stress disorder. *Professional Care of Mother Child*, 7, 2–3.
- WEISMANN, M. M. & PAYKEL, E. S. (1974). *The depressed woman: a study of social relations*. Chicago: University of Chicago Press.
- WHIFFEN, V. E. (1992). Is postpartum depression a distinct diagnosis? *Clinical Psychology Review*, 12, 485–508.
- WIJMA, K., SODERQUIST, J. & WIJMA, B. (1997). Posttraumatic stress disorder after childbirth; A cross sectional study. *Journal of Anxiety Disorders*, 11, 587–597.