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Abstract

Objective

To develop a grounded theory model of first-time mother's experiences of postnatal post-traumatic stress, with the aim of aiding understanding, formulation and treatment of new mothers.

Background

Research into postnatal posttraumatic stress is growing, yet evidence-based practice and treatment models have yet to be fully developed. It is unknown whether existing models of posttraumatic stress are applicable to postnatal posttraumatic stress, or whether other factors are particularly relevant for symptoms occurring in this context.

Methods

A qualitative design explored first-time mothers' experiences of pregnancy, labour, birth and the postpartum, following a subjectively-identified traumatic labour and/ or childbirth. Eleven mothers were interviewed individually, either reporting full symptoms of posttraumatic stress (n=6), or partial symptoms (n=5). Grounded theory methodology was used to code the data and develop a theoretical model of maternal postnatal posttraumatic stress based on these accounts.

Results

Factors emerged specific to postnatal experiences, including: antenatal expectations and anxieties, constructions of the experience, perceptions of other people's views, social support (from specific sources) and adaptive and maladaptive coping strategies.

Limitations

The study was based on a small sample of first-time mothers' accounts, and therefore may not be applicable to mothers with previous children, or a wider maternal population.

Conclusions

The new model highlights important areas for development in clinical practice at various stages of maternal healthcare provision; in the antenatal period, during labour and birth, and into the postpartum. The model can inform formulation and treatment of mothers experiencing postnatal trauma symptoms, providing specific areas of focus for intervention.

Key Words

Antenatal, postnatal, posttraumatic stress, anxiety, maternal, cognitive model.

Introduction

Approximately 1-6% of mothers experience postnatal posttraumatic stress following childbirth (Bailham & Joseph, 2003). Associations have been found with a number of predisposing, precipitating and maintaining factors (Slade, 2006), yet these vary between studies and their roles are not fully understood. A small number of qualitative studies have begun to identify potentially important factors in women's experiences, such as events occurring during labour and birth (e.g. quality of care, communication from staff, levels of pain; Ayers 2007; Beck, 2004; Nicholls & Ayers, 2007) and postpartum factors (e.g. lack of continuity of care; Tham, Ryding & Christensson, 2010).

A number of general models of posttraumatic stress have been developed to explain trauma symptoms (e.g. Brewin, Dalgleish & Joseph, 1996). Ehler's and Clark's Cognitive Model (2000) is widely used in the clinical understanding and treatment of posttraumatic stress. This model incorporates a range of factors explaining the development and persistence of posttraumatic stress symptoms over time. It proposes that memories cannot be deliberately recalled due to inadequate integration and elaboration of the event within context and autobiographical memory. For example, the event is not placed in a specific time-period, or linked to important subsequent information, such as current safety. This leads to a sense of current threat rather than the trauma being processed as time-limited and in the past. The model also incorporates cognitive processes occurring during and following a traumatic event, including negative appraisals and memory processes. For example, mental defeat, loss of autonomy, dissociation or emotional numbing may increase symptom vulnerability through elevated negative self-schema, perceived reduction in self-coping, and inability to intentionally retrieve information needed to process the event (Dunmore, Clark & Ehlers, 1999). The event

Postnatal posttraumatic stress: A grounded theory model of first time mother's experiences or the symptoms may be appraised as holding negative implications, prolonging the sense of threat and danger. Coping strategies, such as thought suppression and avoidance, may actually increase symptoms and prevent necessary processing (Steil & Ehlers, 2000).

Ehler's and Clark's model has been found to account for 71% of the variance in trauma symptoms six months following personal assault (Halligan, Michael, Clark and Ehlers, 2003). A small number of studies have since begun to explore whether this model is also applicable to symptoms following labour and birth. For example, using structural equation modelling, Ford, Ayers and Bradley (2010) found Ehler's and Clark's cognitive model (2000) accounted for just 23% of the variance in acute stress symptoms at three weeks postpartum, dropping to only 9% at three months. When social support (partially mediated by post-trauma cognitions) was added to the model an extra 7% of the variance was explained. These results indicate that Ehler's and Clark's model goes some way towards explaining postnatal symptoms, but that other factors may need to be encompassed, including social support.

More recently, Vossbeck-Elsebusch, Freisfeld and Ehring (2014) explored the predictive value of a new postnatal model, using specific predictors found in previous research (e.g. age, pregnancy wellbeing, pain during delivery, peritraumatic emotions, quality and quantity of social support), as well as cognitive factors based on Ehler's and Clark's model (e.g. dissociation, negative beliefs about the self and others, thought suppression and rumination). Wellbeing during pregnancy and age emerged as significant prenatal variables, and when combined with birth-related variables (peritraumatic emotions and general self-reported wellbeing during birth) accounted for 33% of trauma symptoms (n=224, 1-6 months post-birth). In contrast to the findings of Ford et al (2010), social support did not improve the predictive value of the model. However, cognitive variables significantly accounted for a

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proportion of the variance in symptoms, increasing the predictive value to 68%. This suggests that a combination of factors identified in previous studies into postnatal trauma and those included in an existing cognitive model of PTSD can start to explain, to a relatively good degree, postnatal trauma symptoms. This is promising in terms of clinical application, as it indicates that it may be possible to model postnatal trauma symptoms to inform practice. However, as a proportion of the variance is still unexplained, and findings vary between these two studies, a model is still needed to better account for maternal trauma symptoms in the postpartum.

Slade (2006) presented a two-dimensional conceptual model based upon a review of the research findings, with internal and external factors forming one dimension, and predisposing, precipitating and maintaining factors the other. This model provides a good foundation towards conceptualising postnatal posttraumatic stress. However, evidence has grown so the model may need updating. In addition, Slade (2006) identified that postnatal maintaining factors were largely unknown at the time, and required additional exploration and understanding.

This study aimed to address these gaps in the conceptualisation of maternal postnatal posttraumatic stress by developing a theoretical model directly grounded in theory derived from mothers' experiences of traumatic labour or childbirth.

Method

Design

Using a qualitative grounded theory design (Charmaz, 2006; Glaser & Strauss, 1967) the study explored experiences of first-time mothers identifying a traumatic labour and childbirth.

Procedure

University Research Ethics approval was obtained. Participants were recruited via five UK websites and support groups for new mothers. Interested mothers were asked to contact the researcher and were emailed the information sheet (n=63). If interested they were sent a consent form and screening questionnaire (n=49). 39 mothers returned questionnaires (79.6%). Interviews were conducted until data reached saturation (n=11). Following grounded theory methodology, data collection and analysis occurred simultaneously; once data was collected it was analysed to determine the next data source (Glaser & Strauss, 1967).

Participants

Women were required to be 18+, had their first baby within the previous 18 months, perceived their labour *and/ or* childbirth as traumatic (fulfilled Criterion A of the DSM-IV (1994), as measured with the Posttraumatic Stress Disorder Questionnaire [PTSD-Q; Czarnocka & Slade, 2000]; see below) and reported full or partial symptoms of childbirth-related posttraumatic stress. Previous studies have suggested that primiparous and multiparous women have different perceptions of labour and birth (Czarnocka & Slade, 2000), thus it was decided to focus on first time-mothers' experiences. Participants were excluded from the interview stage of participation if their baby was on special care in excess of 24 hours.

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On the screening questionnaire *all* women identifying a traumatic labour or birth reported at least partial symptoms of posttraumatic stress (significant symptoms of intrusions, avoidance *or* hyperarousal). Mothers included in the final interviews therefore all met criterion A for posttraumatic stress (DSM-IV, 1994) and either reported full (n=6) or partial (n=5) trauma symptoms.

Measures

A battery of measures was used to screen women's symptoms prior to participation in the interviews:

- (1) A demographic information sheet (e.g. age, ethnicity, work-status) and basic information about labour and birth (e.g. place of birth, mode of delivery and pain relief used).
- (2) The PTSD-Q (Czarnocka & Slade, 2000), is a 17-item self-report measure designed to assess symptoms of posttraumatic stress. The scale includes questions to assess whether participants meet criterion A of posttraumatic stress in DSM-IV (APA, 1994). This was a key aspect in the current study, thus it was essential participants answered these questions to be considered for participation in the interview.

The PTSD-Q asks that participants choose from 7 frequency options, ranging from 'never' to 'always', (range =1-7 for each question). To be considered clinically significant, symptoms must occur with a frequency of 'commonly' or above (a score of 4+). To reach threshold for posttraumatic stress, participants must score 4+ on at least one item of intrusions, three items of avoidance and two hyper-arousal. The original authors (2000) report high internal consistency ($\alpha = .92$), test re-test reliability ($r = .95$), and diagnostic agreement (87%).

(3) The Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden & Sagovsky., 1987). This is a 10-item self-report measure designed to screen for symptoms of postnatal depression. Scores range from 0-30, with higher scores representing higher symptom frequency. Using a cut-off score of 12/13, Cox et al. (1987) report satisfactory sensitivity (73%), split-half reliability (.88) and internal consistency (standardised alpha coefficient=.87) (n=84). Scores above 13 are generally used to indicate 'at risk' cases. Scores in the current study ranged between 2-22 (mean 11.8).

Participants

Participants were aged 22 to 40 (mean 32 years), the majority identified a white British ethnic origin, and all were educated to a high level (A-levels n=1; degree n=9; postgraduate qualification n=1). All mothers had hospital births with the male partner present for at least some of the labour and/ or birth. One participant spent some of labour in a private birth centre, and one had a doula. A wide range of pain relief was used including a water pool, gas and air, pethidine and epidural. See Table 1 for additional participant information, including EPDS scores.

Insert Table 1 here

Interviews

The first author conducted all the interviews based on a semi-structured interview schedule developed by the two authors. The interview schedule aimed to follow a chronological time

Postnatal posttraumatic stress: A grounded theory model of first time mother's experiences order, starting with the antenatal period, moving onto the labour and birth, and finishing with the postnatal period. For each of these three time-periods, the focus lay on exploring women's thoughts, feelings and behaviours during these stages. Table 2 gives examples of the main questions included in the schedule. The schedule was used flexibly, also allowing participants to identify what was important to them (Charmaz; 2006).

As the interviews continued it was noted that participants reporting 'full' trauma symptoms did not provide as much detail on these symptoms as hoped, possibly due to difficulty discussing the topic, or the chronological position of these questions within the interview reducing time available to discuss postnatal symptoms. In line with Grounded Theory methodology, small changes were therefore made to the ordering of the schedule for the final two interviews to capture this information, starting with labour and birth, followed by postnatal experiences and symptoms, before finishing with discussions on the antenatal period. Interviews lasted between 53 minutes and one hour fifty-five (mean 78 minutes).

Insert Table 2 here

Data Analysis

Interviews were conducted until both authors agreed data reached saturation: six interviews with fully symptomatic mothers and five partially symptomatic. Elliott, Fischer & Rennie's (1999) guidelines to evaluate qualitative research were followed, including situating the sample, grounding the research in examples and using triangulation to validate the emergent theory; this involved checking the categories and themes with other researchers familiar with grounded theory techniques, including the second author (Madill, Jordan & Shirley, 2000). This ensured that the researcher did not miss any important themes and that the labels and

Postnatal posttraumatic stress: A grounded theory model of first time mother's experiences interpretations fitted the data well. Grounded theory methodology was followed to generate a theoretical model based on codes extracted directly from the data (Glaser & Strauss, 1967) (Figure 1).

Results

Five theoretical codes emerged from the data, with a number of additional sub-codes. These are summarised in Table 3 with their supporting definitions and illustrative quotes from the data.

Table 3 here

Grounded Theory Model

The data highlighted that a new model of postnatal posttraumatic stress may enhance understanding of trauma symptoms in new mothers, incorporating factors specific to pregnancy, labour, birth and the postpartum. These event-specific factors take into account that the traumatising event (childbirth) is anticipated and many anticipatory thoughts, events and coping mechanisms appear to impact on subsequent feelings and processing of the birth. In addition, postnatal experiences appear to play a significant role in the maintenance of symptoms. The theoretical codes were therefore developed into a model of postnatal trauma symptoms (Figure 1). This model was influenced by the two-dimensional matrix model proposed by Slade (2006), in which symptoms can be understood in terms of predisposing (antenatal), precipitating (peri-traumatic) and maintaining factors (postnatal) which may influence the development and duration of symptoms.

Discussion

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The study used a qualitative design to explore the experiences of first-time mothers who found labour and childbirth traumatic, and reported trauma symptoms within the first 18 months following labour and birth. The study specifically aimed to use this data to develop a theoretical model of maternal postnatal posttraumatic stress. Based on interviews with eleven first-time mothers (six reporting full trauma symptoms, five reporting partial symptoms) five overall themes emerged from the data (with further sub-codes), describing significant aspects of the mothers' experiences in the antenatal and postnatal periods, as well as during the labour and birth itself. These codes were then arranged into a preliminary theoretical model, which it is proposed can help assist understanding of mothers' postnatal trauma symptoms.

A number of factors were identified which contributed to the mothers' overall experience of postnatal trauma symptoms, such as pre-existing anxieties, expectations for labour and birth, the way in which narratives were developed about birth in the postpartum, and the meaning of the trauma symptoms in their role as a new mother (Figure 1). Some of these factors are congruent with those included in Ehler's and Clark's cognitive models of posttraumatic stress (2000), such as prior experiences and beliefs, processing during the event, and post-event appraisals. However, the new model highlights some very *specific* aspects of these which are related to the perinatal period, as well as including some new event-specific factors. This model therefore builds on the existing cognitive model and includes specific adaptations which appear to be helpful when thinking about formulating and understanding maternal posttraumatic stress, and treating women postnatally.

Existing cognitive theories of posttraumatic stress propose that individuals bring a set of pre-existing 'schemas' to an event: beliefs and models of the self, others and the world (Brewin et al., 1996b). These schemas are thought to be incompatible with (or in some cases, confirmed

Postnatal posttraumatic stress: A grounded theory model of first time mother's experiences by a) traumatic experience, leading to posttraumatic stress symptoms if the trauma-related information is unsuccessfully processed and integrated within these existing models (Brewin et al., 1996). These pre-existing beliefs appeared to be particularly relevant to postnatal trauma symptoms as anticipatory birth-related anxieties and fears appeared to be particularly significant. Negative stories of other's difficult or upsetting experiences may have played a role in shaping anxieties and expectations, possibly fuelling pre-existing fears of labour and birth (tokophobia; Soderquist, Wijma, Thorbert & Wijma, 2009). These findings suggest that antenatal anxieties and beliefs about birth may be linked to later trauma symptoms (although the retrospective design means no causation can be drawn). This echo's recommendations made in a recent meta-analysis of postpartum posttraumatic stress that attitudes towards pregnancy and childbirth, and interactions between these and actual experiences during labour and birth, warrant further exploration (Grekin & O'Hara, 2014). High levels of antenatal anxiety may increase vigilance to signs of threat and danger during the experience, increasing vulnerability to trauma symptoms (Fairbrother & Woody, 2007).

Coping strategies developed to alleviate anticipatory anxieties may influence how the birth experience is experienced and understood. Having control and making choices was important, yet the need to feel in control may be detrimental when this cannot be surrendered to healthcare professionals during labour and birth. A degree of psychological flexibility seems beneficial; fixed hopes and expectations for labour and birth led to disappointment, guilt and loss if not achieved. In line with recent changes made to diagnostic criteria for posttraumatic stress (DSM-V, American Psychiatric Association, 2013) the model incorporates a wide range of postnatal emotions, including shame and low mood, and may therefore indicate other markers for healthcare professionals to be alert to in the postpartum, in addition to the more 'traditional' and wider-known symptoms.

Previous models (Ehlers & Clark, 2000; Brewin et al., 1996) propose that trauma memories are poorly elaborated and lack detail. However, the current study partially contradicts this. Although some mothers described fragmented memories for aspects of the experience, mothers with full symptoms provided detailed descriptions of specific moments of fear during labour and birth, and comprehensive accounts of the impact. Treatment of postnatal trauma symptoms may need to help mothers place these memories into time and context (Ehlers & Clark, 2000).

As found by Ford et al., (2010), social support emerged as a significant component to include in the model (Figure 1). Having supportive others available to listen, empathise and acknowledge difficulties without judgement was important during from pregnancy through to the postpartum. Support is thought to be essential in providing a channel through which trauma memories can be accessed and integrated into pre-existing beliefs (Brewin et al., 1996). For some, this support may be readily available from friends, family and postnatal groups. However, for others support may be unavailable or avoided due to fears of negative judgement, potentially increasing vulnerability to long-term symptoms.

Although support was valued from a range of sources, healthcare providers were particularly important during labour, birth and the postpartum. Mothers were disappointed if midwives showed a lack of interest, ignored them or were dismissive, having lasting impacts on their mood and symptoms. Although this is a significant factor for healthcare providers to be aware of, it is unknown whether objectively these mothers actually received poor or disinterested care, whether this was their subjective experience at the time, or whether this is a cognition which has developed following the event in light of their subsequent distressing experiences and symptoms. It may be interesting for future studies to try to disentangle these possible

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differences in subjective perceptions of and objective quality of care between mothers who
develop trauma symptoms and those who don't.

In addition to care during the labour and birth, the mothers spoke about disappointment at the
lack of professional postnatal support available. This is consistent with findings from a recent
study exploring use of a counselling intervention following childbirth; women reported wanting
greater emotional support after childbirth – a space to ask questions, explore feelings and feel
cared for (Fenwick et al., 2013).

Social connotations and narratives surrounding childbirth and becoming a mother played an
important role in women's experiences. Social and personal scripts affected hopes and
expectations, as well as how the mothers tried to assimilate these with the reality of the
experience. Making comparisons to objectively traumatic experiences helped 'validate' the
experience as traumatic, allowing help-seeking. However, feelings of failure, shame and guilt
may have triggered withdrawal from others, possibly preventing successful processing of the
event. This may also have been influenced by existing beliefs about availability and reliability
of others, such as pre-existing insecure (anxious or avoidant) attachment styles (Iles, Slade &
Spiby, 2011). The model gives consideration to possible systemic factors, such as the influence
of other people's views and beliefs about being a "good mother". Alternatively, these findings
may actually represent underlying negative cognitions about others people's critical views and
judgements. . These thoughts and expectations play a role in how the event is experienced and
processed, and it is likely to be significant in treatment of postnatal trauma symptoms.

Although mothers made negative appraisals of the trauma impact, such as effects on
relationships, they also constructed positive appraisals, including changes in themselves.

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Research is slowly recognising the potential positives which may arise following a traumatic event (Linley & Joseph, 2004; Nelson, 2011). This is an important area to explore further following traumatic labour and birth as it may provide useful developments for treatment strategies (Sawyer & Ayers, 2009).

Ehlers and Clark (2000) propose that negative appraisals of a traumatic event increase the sense of current threat. A cognitive strategy used to reduce this sense of current threat was deliberately placing the event in the past and focusing on the baby's health as a positive outcome. However, it is important that putting the event in the past does not act as a form of cognitive avoidance, preventing full event processing (Joseph & Williams, 2005).

Negative postnatal experiences, such as difficulties breastfeeding and physical healing, were strongly integrated into labour and birth narratives. These greatly impacted on postnatal affect and were interpreted and appraised as damage, heightening distress. These may be specific areas which it is important for healthcare professionals to be alert to when working with new mothers. Attribution of blame for these experiences was an interesting finding, with an apparent difference in levels of control over events between mothers with full or partial trauma symptoms. These attributions may have been linked to existing schemas and ways of understanding the self and others, or may have threatened existing beliefs (Janoff-Bulman, 1992) which may have impacted on meanings and appraisals given to the events in the postpartum, and overall processing of the event. It may be interesting for future studies to further explore attribution styles in pregnancy and the postpartum between mothers with and without postnatal posttraumatic stress symptoms.

The presence of ongoing threat is thought to continually reactivate trauma memories leading to persistence of symptoms (Brewin et al., 1996; Ehlers & Clark, 2000). For first-time mothers in

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this study, the sense of current threat and danger appears to have been kept alive by thoughts and fears about future children, subsequently creating a future threat rather than being in the past. Clinically this could have important implications as treatments may need to help mothers put the experience in the past whilst acknowledging that they may wish for future children.

Clinical Implications

This model of postnatal posttraumatic stress facilitates understanding of women's experiences, guiding clinical formulation and treatment for new mothers. The study highlighted the importance of antenatal anxieties, thus interventions may be helpful at different stages of pregnancy, labour and the postpartum. Helping women manage antenatal anxieties and develop flexible birth plans may be crucial at decreasing future vulnerability to trauma symptoms. There are currently no single efficacious evidence-based treatment strategies for postnatal posttraumatic stress (Peeler et al., 2013). Because this model is grounded directly in women's experiences, it aids understanding of postnatal symptoms and experiences, and may be an important first-step in developing future treatment strategies.

Although cognitive-behavioural treatments can be used in treatment of postnatal trauma symptoms, this model highlights specific areas which may need to be targeted. For example, restructuring techniques may need to focus on reconciling differences in hopes and expectations with the reality of the experience, deliberately putting the event in the past (creating context), separating the event from the baby, and minimising any negative event-baby connections. It may be particularly salient to develop ways to think about future pregnancies without a sense of current threat.

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Mothers expressed disappointment at the lack of postnatal care available. Effective support needs to be offered to new mothers, normalising and acknowledging difficulties, reducing fear of judgement. Women experiencing difficulties healing physically or with breastfeeding may be at increased vulnerability and may require additional support.

The study highlights the potential impacts of traumatic labour and birth on new mothers and their families. Mothers may experience difficulties bonding with their infants and have problems in their relationships. This may prolong postnatal symptoms by reducing natural pathways for event-processing (Ehlers & Clark, 2000), and may hold longer-term implications for the child development (Parfitt, Pike & Ayers, 2014). Further research is required into the possible longer-term impacts of postnatal posttraumatic stress on the family and child outcomes.

Limitations and recommendations for future research

Data was collected until saturation, yet the qualitative design means a relatively small number of women were included. Therefore, although the model is grounded in data, it may not be applicable to all new mothers. A mixture of mothers reporting full and partial symptoms were included. On the one hand this enables the model to be applicable to a wide range of mothers in the postpartum who have found childbirth traumatic, not just those reporting full trauma symptoms. However, this also perhaps deviates focus of the model away from those reporting full and severe symptoms, who may in fact be the group most in need of support and intervention in the postpartum. It would be advisable for future studies to focus exclusively on women reporting full trauma symptoms, or perhaps to explore differences between those reporting full trauma symptoms and no trauma symptoms after a subjectively reported traumatic labour or birth.

Only a limited amount of data was collected on socioeconomic details. It would be beneficial to expand on the current findings by including a wider and more varied sample, such as multiparous women and those from a wider range of cultural and ethnic backgrounds. No information was collected on any previous psychological difficulties or prior traumatic experiences; this may be important information to gather in future studies as these prior experiences may influence existing feelings and beliefs when entering pregnancy and birth (Grekin & O'Hara, 2014). It would also be interesting to replicate the study with fathers experiencing postnatal trauma symptoms, to see whether this model is applicable to new fathers or if different factors need consideration.

Mothers in the study reported relatively high levels of depressive symptoms as well as posttraumatic stress, particularly those reporting full trauma symptoms. Although the focus of the interviews lay on the specific effects of traumatic experiences, it is likely that any depressive feelings and cognitions also impacted on their experiences and reports. The women in the study may therefore represent new mothers experiencing a range of postnatal distress rather than specific trauma symptoms. However, due to the known high levels of comorbidity between the two (Grekin & O'Hara, 2014) it is likely that this reflects the reality of mother's experiences in the postpartum.

Conclusions

The study provides a useful model to aid clinical formulations of women's postnatal trauma symptoms. Although previous models may provide explanations for some aspects of postnatal symptoms, other important factors emerged which are specific to this time-period, including negative antenatal perceptions of labour and birth, construction of the labour and birth story,

Postnatal posttraumatic stress: A grounded theory model of first time mother's experiences perceptions of negative judgement from others, social support and the use of specific helpful and unhelpful coping strategies. This model may help clinicians identify mothers at risk of symptoms, and to provide intervention as early as possible (Grekin & O'Hara, 2014).

Table 1. Details of participants who completed the interview.

	Participant number	Age of baby at interview	PTS Symptoms	EPDS Score*	Birth details
Full Symptoms¹	F1	4 months	Current	15	Caesarean (due to failed induction)
	F2	5 months	Current	22	Induction. Vaginal birth. Episiotomy. Ventouse
	F3	9 months	Current	16	Induction. Emergency caesarean
	F4	7 months	Current	7	Vaginal birth.
	F5	11 months	Current	15	Induction. Emergency caesarean.
	F6	10 months	Current	18	Emergency caesarean (general anaesthetic).
Partial Symptoms	P1	8 months	Previous intrusions & avoidance	12	Induction. Vaginal birth. Episiotomy. Ventouse
	P2	9 months	Current hyperarousal	2	Induction. Vaginal birth. Episiotomy. Ventouse
	P3	3 months	Current intrusions & hyperarousal	10	Forceps. Emergency caesarean.
	P4	15 months	Current hyperarousal	9	Vaginal birth.
	P5	8 months	Previous hyperarousal	4	Vaginal birth. Forceps. Episiotomy.

*Scores ≥ 13 indicate significant symptoms of postnatal depression (Cox, Holden & Sagovsky, 1987)

¹ Mothers with 'full' symptoms reported clinical levels of symptoms as defined by the PTSD-Q on all three clusters of symptoms (intrusions, avoidance and hyperarousal)

Table 2. Example of questions included in the semi-structured interview schedule

Time-Period	Questions
<p>Antenatal Period <i>Let's start by thinking about how you were feeling about the labour and birth during your pregnancy.....</i></p>	<ul style="list-style-type: none"> • Did you have any expectations for the labour and birth during your pregnancy? • How were you feeling about the labour and birth during your pregnancy? • Was there anything you were particularly concerned/ worried about? • Did you have any thoughts/ images which kept popping into your mind before the experience? • Did you do anything to prepare for the labour and birth? • (If participant was worried/ had any negative thoughts/ feelings) How did you cope with those thoughts/ feelings? Were you able to talk to anyone about your thoughts/ feelings about the labour and birth? • How did your partner feel about the labour and birth during your pregnancy?
<p>Labour and Birth <i>I'd like to find out about more detail about your actual labour and childbirth experience....</i></p>	<p>Experience & expectations</p> <ul style="list-style-type: none"> • Tell me about/ describe your labour and childbirth experience. • If not already discussed or difficulty, use prompts, e.g. <ul style="list-style-type: none"> ○ Where were you when labour started? ○ How long were you in labour for? • How did the experience compare to your expectations? • What emotions were you feeling when you went into labour/ as labour continued/ during the birth? • What do you think influenced how you felt? • Was there anything that made you feel better/ worse? <p>Coping</p> <ul style="list-style-type: none"> • How do you think you coped during the labour and birth? • Was there anything that helped you cope during the labour and birth? • Was there anything that felt unhelpful? <p>Partner (if not already mentioned)</p> <ul style="list-style-type: none"> • Tell me about your partner's role during your labour and birth. <p>Staff (if not already mentioned)</p> <ul style="list-style-type: none"> • Tell me about the role staff played on the day/ during the experience. • How did you feel about the care/ support you received from staff during the experience? <p>Summary of experience</p> <ul style="list-style-type: none"> • If you had to use a few words to summarise your labour and birth experience, what words would you use?
<p>Postnatal Period <i>I'd now like to move on to think about how things have been since the</i></p>	<p style="text-align: center;">Postnatal Period</p> <p>Memories (Trauma-specific)</p> <ul style="list-style-type: none"> • When you think about your labour and birth, what are the main things that come to mind? • When you think back to the event are there any particular thoughts/ images/ key events which go through your mind? (Explore each)

<p><u>labour and birth</u></p>	<ul style="list-style-type: none"> • Do you still have times when this thought/ image/ event comes to mind? How often? • When did you first notice this happening? • What is it like to have these thoughts/ images coming to mind? • What triggers these thoughts/ images/ events? • Have you been able to tell other people about these thoughts/ images? • Do you ever try to avoid reminders of your labour and birth? (people, places, sights, smells, etc) • Have you felt more jumpy or alert since the labour and birth? <p>Feelings</p> <ul style="list-style-type: none"> • How do you feel when you look back on your labour and childbirth experience? • Has anything happened since the experience which has influenced the way you feel/ think about it? <p>Impact</p> <ul style="list-style-type: none"> • Can you tell me about any impacts that the labour and childbirth has had on you or your life since the birth – either positive or negative. • How would you describe yourself as a person since the labour and birth? <p>Relationships</p> <ul style="list-style-type: none"> • Since the labour and birth, how would you describe your relationship with: <ul style="list-style-type: none"> ○ Your partner? ○ Your baby? ○ Others? (e.g. family, friends) • How have others responded to your experience? • Are you able to talk to others about your experience? • Are there any parts of your experience you have deliberately not told other people about/ you feel unable to tell people? <p>Coping</p> <ul style="list-style-type: none"> • Tell me about how you have coped since the labour and birth. • What has helped you to cope/ manage? • Has anything made it difficult for you to cope/ manage? <p>Final questions</p> <ul style="list-style-type: none"> • Is there anything else which is important for me to know about your labour and birth that I have not asked you about? • If you were going to describe your experience to someone, which are the parts you would really want them to understand?
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Table 3: Results: theoretical codes, sub-codes definitions and quotations

Theoretical Code	Sub-code	Definition	Illustrative Quotes
1. Fear and anxiety	Fear of the unknown	Antenatal fears and anxieties were expressed about pregnancy, labour and birth. These appeared to be accounts of actual levels of fear experienced during the pregnancy, rather than retrospective accounts based on actual experience of birth. During pregnancy these fears were predominantly about stillbirth or the mother's safety. All mothers with partial symptoms mentioned other people's negative experiences of childbirth whereas mothers with full symptoms appeared to be experiencing more generalised anxieties during pregnancy related to a number of different fears and aspects of labour and birth rather than specifically to others' stories.	P3 ² : <i>"I knew that other friends of mine had lost their babies very late on and things had gone wrong for them and you – you do carry that with you"</i> F1: <i>"the fear of the unknown is really scary."</i>
	Perceived Threat	Mothers described strong negative emotions during the labour and birth and fears of things going wrong; this was based on a mixture of actual events not fitting their expectations and increasing need for medical intervention, as well as a perception of serious injury happening to them or their child. Descriptions of specific moments of fear during the labour and birth seemed particularly detailed and vivid for mothers reporting full trauma symptoms.	F2: <i>"I remember during the birth, erm, was quite horrible really. There was just all my blood just gushing out everywhere. I passed out for a bit. And I actually thought I was going to die at one point....Everyone went really quiet and the blood was just coming out a bit fast. My husband looked ashen faced. And I passed out for a bit. And I thought "oh, that's it.""</i>
	Negative feelings after a fearful event	Mothers reporting partial symptoms dismissed and downplayed emotional difficulties in the postpartum and described not wanting to be labelled as 'depressed'. Mothers with full symptoms spoke about the severity and lasting impact of a wide range of difficult and distressing emotions, including guilt, anger, shame and low mood. Narratives of the labour and birth were widely intertwined with subsequent postnatal events, such as pain, difficulty healing and breastfeeding pressures. These events significantly impacted on postnatal mood and the emotional lens through which the experience was viewed. With regards to breastfeeding difficulties, there was a sense of anger towards healthcare professionals from mothers with partial symptoms, whereas mothers with full symptoms described disappointment with themselves.	F5: <i>"I went depressed I think for about two weeks, I didn't go outside the house or anything.....there was one point before I went to the doctors, erm, and I remember thinking I couldn't live with this pain. Erm, and the only thing that made me not want to do anything, hurt myself, was because I had (baby) to look after. So that's when I thought, you know, "something is really wrong here, I need to go to the doctors if I'm thinking about killing myself or something." It was horrible"</i> F6: <i>"the scar just reminds me that it was just awful, that it was a horrible time. It's a horrible scar. It's getting better but it's a horrible scar, it's a horrible thing. Whether or not as the scar goes down and I get better, whether I'll</i>

² Quotes range from different participants. Mothers reporting partial symptoms are pre-fixed with a 'P', those reporting full symptoms with an 'F'.

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			<i>start to feel better about the whole – but the association is.”</i>
2. Coping and processing	Support	<p>All the mothers described the importance of antenatal support, and support continuing throughout labour, birth and into the postpartum. A range of supportive individuals were important (partner, family, friends and healthcare professionals) and this was most effective when others were empathic, honest and non-dismissive. During labour and birth the partner's presence and support was particularly important, whereas antenatally and postnatally other mothers' support was valued highly.</p> <p>Absence of partner support was reported by mothers with full symptoms. Difficult staff interactions were described by all, including lack of communication, no continuity of care, and feeling dismissed or misunderstood. Based on the accounts, this appeared to have significant lasting emotional impacts on mothers with full trauma symptoms as it was something they still felt extremely emotional about. The mothers described an absence of professional postnatal support, and wished for additional care to be offered routinely to all mothers to normalise their needs.</p>	<p>F3: “(The midwife was) <i>very patronising....Confused, deliberately difficult....She patronised us and ridiculed us and intimidated us “you silly people, you think this is labour, ha”....The flashbacks I get are of being in the dark, screaming in agony and hearing a child crying in the room next door to me, and nobody helping me, nobody coming to me.”</i></p> <p>P3: “<i>My husband being there (during labour and birth) the whole time was absolutely essential....This is why I think my husband was invaluable. I don't just think him being there to hold your hand and mop your brow; it's having someone who knows what's important to you.”</i></p> <p>P2: “<i>it's almost like every time you talk about it you come to terms with it that little tiny bit more, and you, you maybe heal a little tiny bit more”</i></p> <p>P2: “<i>once I'd had the baby no one ever came back to see if I was alright – I mean ever....it was all a bit – “oh well you're fine – the baby's alright, so off you go”the one thing that I think would be amazing if it was ever thought about in the medical world is somebody, I don't even know who would be the right person, to talk – to talk to a mum. Probably four months, six months down the line.”</i></p>
	Information as reassurance and power	<p>The mothers actively sought information about labour and birth antenatally, such as from books and antenatal classes. Information generally helped mothers feel knowledgeable, reassured and empowered, whereas lack of knowledge elevated fears. Although this was largely seen as effective by the mothers, in some instances it was driven by anxiety and worries.</p> <p>Postnatally, information was sought to understand experiences, understand general processes and fill in gaps. Information was sought from hospital notes, healthcare professionals, books and television programmes. Although this was discussed by all mothers, it seemed of greater importance to mothers with full symptoms. It is possible</p>	<p>F3: “<i>I really wanted to read everything I could get my hands on about it – good and bad, so that I felt well-equipped.”</i></p> <p>F6: “<i>I think if I could have had my debrief I don't know whether that would have taken away some of the – because to see it from their point of view, for them to say “this is why we decided to do this and this is why this happened at this, and this is why this happened, and this – and this is why we made the decision to do this” I think to see it maybe from a – from a very factual point of view – because mine's quite an emotional view, whether or not it would just stop some of those “I don't</i></p>

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		these mothers struggled to move on from the experience until they developed a full narrative about their experiences.	<i>understand why's" or "could I - ?" – If they said "no, you couldn't have don't anything it's just the way it was"</i>
	Emotional and physical avoidance	Avoidance strategies were used antenatally and postnatally. These largely appeared to be in response to anxiety and fear. Strategies included deliberately trying not to think about labour and birth, creating emotional distance from the unborn baby, keeping busy to prevent rumination and avoiding postnatal discussion of experiences.	F6: <i>"So I try – I am quite busy and I'm probably doing – there are concerns – there are concerns within – within certain people, like my husband and possibly the doctor and the health visitor just nags me, erm, that I'm doing too much. But for me I don't want – I don't want to stop because if I stop it's too much."</i>
	Positives in the present, negatives in the past	Mothers deliberately focused on the baby as a positive outcome of labour and birth. This coping strategy reduced antenatal anxieties, enabled strength during the experience, and was reassuring postnatally. Developing a positive postnatal narrative about the baby seemed to help distress to be placed in the past, reducing the current threat and danger. However, some mothers spoke about difficulties bonding with their infants (theme 5) which may have prevented use of this strategy. Mothers with partial symptoms deliberately tried to accept what had happened and put the event in the past, which appeared to ease distress.	P1: <i>"if it wasn't for my love for her I probably would be thinking about it very often. It would be something that I, you know, would take me a very long time to get over. But it's, you know, it's her....that allows me to push it to the back of my mind and allows me to get on with things"</i>
	Separating the baby from the experience	Mothers described needing to separate the baby from the experience, releasing blame and negative connotations with the infant.	F1: <i>"started looking at – trying to find a way for me to recognise (baby) as a little baby and not just the product of something that had been painful and upsetting. And actually try and start to separate (baby) from that, from those events."</i>
3. Choice and Control	Cognitive rigidity and battles for control	<p>Making choices, having a role in decision-making and staying in control was frequently spoken about and important to all mothers.</p> <p>Fixed antenatal hopes and expectations for labour and birth made it difficult to reconcile differences between wanting the baby to be safe over and above ideas of how labour and birth "should" be. During labour and birth mothers experienced conflict between needing to stay in control and trusting staff. Loss of control was associated with vulnerability and powerlessness. Disappointment, failure and loss were highly prevalent, alongside difficulty reconciling these differences.</p>	<p>F1: <i>"nothing was going right. It was just (pause – upset, starts crying). It just – it just wasn't how it was supposed to be (pause, upset). And the biggest emotion that I had was that I felt that I was a failure because my body didn't work... I felt totally out of control. I felt totally reliant on everyone else....I was this, you know, failure that hadn't been able to give birth properly. I should have been, you know, should have been put in the 'failures corner'"</i></p> <p>F3: <i>"I knew at the time that you can set your expectations really high, and that you have to be flexible and you have to be realistic about it. But that didn't stop me having really really strong sort've aspirations for what it was that I was expecting out of the experience."</i></p>

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	Regaining Control	Mothers with partial symptoms took deliberate steps to regain postnatal control, enabling them to regain a sense of strength and positivity.	P1: <i>"I guess it was a – the light switch goes on you think "oh gosh, I've got to really make a change here because otherwise, you know, I'm just going to go into a darker hole – a deeper and darker hole."</i>
4. Me and my story	Developing a narrative	Participants described memory gaps, and deliberately recalled labour and birth to understand and process their experiences. All spoke about experiencing involuntary visual and cognitive intrusions, such as nightmares and recurrent intrusive images and memories. These were often visual, recalled in graphic detail experienced as upsetting and unwanted, and very different to times when they deliberately thought about the labour and birth. Some mothers were only reminded about their experience when talking about labour and birth; triggers varied for others, including seeing photos of the newborn and experiencing physical sensations similar to those during the event. When constructing their stories mothers with partial symptoms frequently compared their experiences to 'objectively-viewed' traumas, such as car accidents. In contrast, those with full symptoms described difficulties framing their experiences as 'traumatic' due to beliefs about what constitutes a 'trauma', subsequently feeling they were therefore to blame and not deserving help.	<p>P1: <i>"now that I'm talking about it I can really – it's almost as if I can feel the amount of pain that I was in, you know, it was that bad.... It's a bit like a horror film. It's a bit like watching a horror film. Erm, I actually – (sighs) – yeah, you know when you see a knife and blood and flashing images in horror movies, it's kind of like that."</i></p> <p>F2: <i>"When it was new and fresh it was, it was quite hard to sort've think about and cope with. And, I don't know, I'd spend a lot of time crying after I'd had a dream like that, and everything. And then that would start him off crying obviously.... That picture up there – that was taken the day he was born. Literally a couple of hours later. And it still sends shivers down my spine (laughs). I mean, it – everyone goes "oh, cute little baby" and everything, but to me it just makes me think about how – how horrible I felt that day"</i></p> <p>F6: <i>"'Trauma' to me sounds really dramatic...I feel like I am – it's really strange – I feel a bit like I'm cheating. Not cheating, that doesn't sound right. (Sighs) I feel to a certain point though that I don't deserve to have, or I don't need to have the support because actually there's nothing that wrong, there's not that much wrong with me and there's not that much wrong with – there's nothing wrong with (baby)."</i></p>
	The self on a stage: other people's perceptions and experiences	Fear of judgement, particularly other mothers or health professionals, was extremely high in all the mothers. They described needing to be seen as a 'perfect' mother, leading to fear of admitting their difficult feelings or experiences. Perceived societal norms and expectations seemed to play a significant role in shaping their own experiences.	P2: <i>"I'd spoken to one friend who'd had a baby a couple of months after me, erm, and she said "oh you should be over it by now."....and, erh, when I sort of said "oh, I still feel a bit in shock about it, you know, I feel a little bit – I'm just in shock about it all." And she was just like "well, you just should be over it by now." And I just really really found it hard to get my head around how another mum could be that blunt....two people who had had children"</i>

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		Perceiving similar experiences to other mothers was helpful and normalising, but perceiving difference was associated with failure, low mood and shame.	<i>their selves had said to me – had turned against me....And I felt like, I just very much felt like well perhaps I just haven't dealt with it well. Perhaps it wasn't such a bad experience, perhaps that's what everybody has and I just haven't for whatever reason coped with it"</i> F4: <i>"And I didn't really like my health visitor, she kept plying on at me, you know, reading into everything I was saying, and "did I have postnatal depression?" And I didn't have postnatal depression....I didn't trust any of the people afterwards, any of the sort of health professionals....because of the fear of postnatal depression and the taboo of social services and having your children taking away from you I wasn't going to admit anything to anyone. So I suffered in silence a long time because of that"</i>
5. The power of my experience: outcomes for me and others	Impact on other people and relationships	The experience impacted on relationships; some felt closer to partners, friends and family, whereas others reported detrimental impacts. The majority of mothers talked about difficulties forming relationships with their infants, particularly those with full symptoms.	P1: <i>"it's, erh, made me very close, well, closer to my husband"</i> F6: <i>"there were times when I just didn't even want to sit with him (husband). I just didn't want anybody. "I want you to stay over there away from me. I want to be left alone." Because it – it always felt like it was my – and it was always like "I've been through it, it's my problem, I've had him." I had his baby and I had all these problems."</i> F1: <i>"that's exactly how I didn't want her to arrive....and it manifested itself very badly later on with me bonding with her....there was a massive barrier there between me and her to start with."</i>
	Altered plans, beliefs and assumptions	Previous beliefs about coping abilities and what it means to be a 'good' mother were shattered following the event, leading to low mood and withdrawal from others. All others noticed both positive and negative changes in themselves following the birth. Negative changes included increased awareness of personal limitations; positive included recognition of strengths and abilities. The mothers described significant impacts on plans for subsequent children. This appeared particularly long-lasting for mothers with full symptoms, who described extreme fear of future pregnancy.	P3: <i>"it's had an impact in terms of it's shown me how much strength I can summon up when I need it...how patient I can be....how strong I can be"</i> F5: <i>"I am frightened to death of having another baby. Terrified. The whole – even the thought of getting pregnant makes me feel sick."</i>

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		Thinking about future children appeared to be a possible mechanism maintaining the sense of threat and fear in the current time rather than being able to put the previous labour and birth in the past.	
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Figure 1: Theoretical Cognitive Model of Postnatal Posttraumatic Stress

