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**Post-traumatic stress disorder following childbirth: current issues
and recommendations for future research**

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ABSTRACT

Background: An increasing body of research shows that a proportion of women experience significant symptoms of Post-Traumatic Stress Disorder (PTSD) following childbirth.

Aims & Method: An international group of researchers, clinicians, and user-group representatives met in 2006 to discuss the research to date into PTSD following childbirth, issues and debates within the field, and recommendations for future research. This paper reports the content of four discussions on (1) prevalence and comorbidity, (2) screening and treatment, (3) diagnostic and conceptual issues, and (4) theoretical issues.

Conclusions: Current knowledge from the perspectives of the researchers is summarized, dilemmas are articulated and recommendations for future research into PTSD following childbirth are made. In addition, methodological and conceptual issues are considered.

Key words: birth, postpartum, post-traumatic stress disorder, PTSD, anxiety.

INTRODUCTION

Post-Traumatic Stress Disorder (PTSD) is classified by the Diagnostic and Statistical Manual Version IV [1] as occurring when people have been exposed to an event during which they judge their life or physical integrity, or the life or physical integrity of another to be in danger (see Figure 1). Research has shown that a small proportion of women suffer from PTSD following childbirth, with potentially wide ranging consequences, both for themselves and their families [2-4]. Hitherto, research is heavily concentrated on factors contributing to the development of PTSD following childbirth, whereas studies on appropriate treatment for postpartum PTSD are not yet established. To stimulate the research in this field an international, multidisciplinary group of researchers, clinicians, and user-group representatives met at the University of Sussex, UK, in 2006 to address two aims: first to discuss existing and current research in order to share and increase understanding of PTSD following childbirth; and second to identify pathways for scientific and clinical progress in this area (see Appendix for a list of participants).

- Insert Figure 1 about here -

This paper reports a series of discussions from this meeting that were chaired by the authors on (1) Prevalence and comorbidity; (2) Screening and treatment; (3) Diagnostic and conceptual issues; and (4) Theoretical issues; ending with a synopsis and conclusions by the authors. This paper aims to summarise current understanding of PTSD following childbirth, to identify conceptual and methodological issues, and to offer recommendations for future research. It should be noted that discussions

were based on the combined knowledge of people present and the multidisciplinary nature of this meeting means a diversity of views are represented. Each discussion is therefore not necessarily consistent with others included in this paper, particularly with regard to conceptual and theoretical issues, but is reflective of different perspectives on the nature of PTSD. The paper is neither congruent with the authors personal scientific or clinical views on the phenomenon of postpartum PTSD, nor does it constitute a systematic review of this area, but is a reproduction of what was discussed, and a general overview of key findings and issues taken up by participants. References have been inserted to guide the reader to more detailed information but were not necessarily mentioned in the original discussions.

A few general themes arose in most discussions. The question of whether childbirth, when experienced as traumatic, is the same as other traumatic events arose frequently because it has implications for labelling, measurement, comparability with other PTSD research, and applicability of PTSD research into childbirth. Another issue that commonly arose was whether traumatic experiences of childbirth should be conceptualised as a diagnostic category or a continuum of distress. For coherence, these issues are reported in the sections on conceptual issues and theory. Finally, an outcome of one of these discussions was the recommendation to use the term ‘PTSD following childbirth’. We therefore use this term throughout the paper.

Discussion 1: Prevalence and comorbidity

This discussion considered three issues: (i) the prevalence of PTSD following childbirth, including cross-cultural variability, and prevalence in fathers; (ii) the course of PTSD following childbirth and comorbidity; and (iii) methodological issues,

such as measurement, design, and the need for epidemiological studies. Gaps in research and recommendations arising from this debate are given at the end of this section.

Prevalence of PTSD following childbirth

It was agreed that studies from various countries suggest a prevalence of between 0 and 7% of women fulfilling diagnostic criteria for PTSD at some point after birth [5-15]. Prevalence rates are higher in at risk groups, such as women who have a premature or stillbirth, with reports of up to 26% [16, 17].

Prevalence appears to vary according to the type of measurement used and how soon after birth PTSD is measured. Nearly all published studies have used standard questionnaire measures, which, in addition to usual problems of questionnaire measures, have to be adapted to be childbirth-specific. A few studies have used questionnaire measures developed specifically for childbirth [9, 13] but these have not yet been properly validated. To the participants' knowledge, only two studies have used clinical interviews to measure PTSD cases and these find prevalence rates from 0 to 5.9% [11, 18]. Most questionnaire and clinical interview measures have focused on DSM-IV diagnostic criteria and we later discuss the advantage of taking a broader focus in addition to diagnostic criteria.

Cross-cultural comparison of prevalence rates suggests similar prevalence in Europe (i.e. Sweden, Italy, and The Netherlands), the UK, USA, and Australia [5-15]. Recent research from Nigeria [18] indicates there might be higher prevalence in developing countries but this finding could also be due to measurement issues. Thus, there is a need for further research to make proper cross-cultural comparisons.

Existence of trauma anxiety following childbirth in fathers has been largely ignored, although there were studies being conducted at the time of this discussion. Two published [19, 20] and two unpublished [21, 22] studies from Norway and the UK suggest the prevalence of PTSD following childbirth in fathers might range between 0 and 5%. It was noted that all these studies used questionnaire measures of PTSD and diagnostic criteria were not always measured fully, for example, criterion A was rarely included. Therefore, we need further research before we can say anything more substantially about prevalence of PTSD in fathers.

Participants in the discussion were reasonably confident that the prevalence of PTSD in women after birth in developed countries is approximately 1-2%. Further research should examine prevalence in developing countries, and establish the prevalence of PTSD in men after birth. A number of critical issues need attention. The first is the wide spread use of questionnaires to assess PTSD diagnosis and the lack of studies using clinical interviews. There is a pressing need for epidemiological studies including clinical interviews to study prevalence.

A second issue is that of incidence. We know very little about whether PTSD following childbirth is a direct result of birth or purely a continuation of PTSD in pregnancy. Although the majority of prevalence studies have measured PTSD symptoms in relation to childbirth, few have examined trauma history, PTSD symptoms in relation to other traumas, and PTSD in pregnancy. It is unclear whether a similar proportion of women have PTSD during pregnancy. Cross-sectional studies suggest a similar prevalence of around 3% of women having PTSD during pregnancy

[23]. Prospective studies measuring PTSD in pregnancy and considering onset of new cases of PTSD following childbirth are rare. One study reported a higher proportion of women with PTSD symptoms in pregnancy than after birth [5]. The same study also found that, after removing women with PTSD during pregnancy, a further 1-3% of women developed PTSD as a direct response to birth [5]. This is consistent with cross-sectional research, further substantiating a rate of 1-2% of women with PTSD following childbirth.

The course of PTSD following childbirth and comorbidity

Very little research has explicitly looked at the course of PTSD after birth. The few prospective studies have conflicting results; some finding PTSD increases slightly over time [24], others find no change over time [12, 25], and others finding PTSD decreases over time [5]. Research has not yet followed women beyond 12 months after birth. Literature into the course of PTSD after other events suggests PTSD should decrease initially but that spontaneous remission of PTSD is unlikely beyond three months after the event [26].

The course of PTSD after birth therefore needs further examination. It is possible that the course of PTSD following childbirth may differ to following other events because women have daily contact with their baby, which could either exacerbate symptoms or reduce avoidance through acting as a form of exposure. It would be interesting to examine this explicitly by comparing the pattern of symptoms in PTSD following childbirth with those of PTSD after other events. Research, preferably following women more than one year, could ascertain if PTSD after childbirth is naturally remitting or if a proportion of cases remain chronic if not treated.

Comorbidity of other disorders with PTSD following childbirth was also discussed. However, again there is little evidence from which to draw conclusions. Available evidence primarily concentrates on comorbidity with depression [8, 12, 24]. Epidemiological research into postpartum depression suggests it is more prevalent (10-15%) than PTSD [27]. Most studies that have examined depression in women with PTSD suggest the majority of women with PTSD also have symptoms of depression [12, 24]. We know very little about the comorbidity of PTSD with other disorders, such as Substance Use Disorder, Panic Disorder, Attachment Disorder, etc.

Methodological issues

Finally, a theme throughout this roundtable discussion was that methodological issues are critical. Firstly, we need to be clear what we are measuring and how we measure it. If research aims to establish the prevalence of diagnostic PTSD then *all* diagnostic criteria must be measured, including criterion A. If questionnaire measures are used, they need to have high sensitivity and specificity. There is a critical need for research using clinical interviews. Given the low prevalence of PTSD following childbirth, it would be expensive to screen a large sample with interviews to find a few cases. The cost of this could be prohibitive. Therefore, an initial step could be to screen women and men with sensitive questionnaires and then follow-up those with PTSD symptoms with clinical interviews, to establish diagnostic cases.

A second issue is research design. Trauma history, lifetime PTSD, and current PTSD both in pregnancy and after birth need to be examined so we can separate out lifetime prevalence, point prevalence, and incidence. In addition, studies should include

measures of other psychopathology than trauma anxiety, such as attachment disorders [27]. Long-term follow-up will help us understand more about the course of PTSD following childbirth. Finally, we should be cognisant of the review of DSM criteria and possible changes to diagnostic criteria that might be brought in with DSM-V.

The discussion ended by considering recommendations for future research, which are shown in Table 1.

- insert Table 1 about here -

Discussion 2: Screening and Treatment

This discussion considered three areas: (i) screening for PTSD following childbirth; (ii) treatment of PTSD following childbirth; and (iii) the impact of PTSD on women and their families. Recommendations for research are given at the end of the section.

Screening for PTSD following childbirth

To date, there are no published studies of screening for PTSD following childbirth.

This may be due to the large numbers of women that would have to participate to identify women with PTSD. It was therefore decided that the word ‘detection’ is more appropriate than screening, and that this should be broken down into the areas of detecting risk factors, detecting distress, and detecting PTSD cases. Similar to prevalence research, it was also noted that it is important to consider all time points e.g. before pregnancy, during pregnancy, during birth and after birth.

Despite the absence of research into detection and treatment of PTSD following childbirth, there is a great deal of knowledge about detection and treatment within the

general PTSD field, which may be relevant. General measures that perhaps could be used as screening tools are questionnaires such as the Impact of Event Scale [28], PTSD Diagnostic Scale [29], or PTSD-Interview [30]. Specific measures that have been developed for use with women after childbirth but are not widely validated include the Traumatic Event Scale [13] and Perinatal Posttraumatic Stress Disorder Questionnaire [31]. It could be discussed whether screening measures, used to identify PTSD in the general population, are specific enough to measure PTSD after childbirth, and whether concepts such as fear of childbirth need to be added.

Another consideration is the clinical practicalities of screening and detection. Large numbers of women need to be scrutinized to identify a small proportion of women with PTSD. Consequently, an easily filled out measure that could be routinely administered by health visitors or midwives, would have advantages.

Prevention and treatment of PTSD following childbirth

Prevention of PTSD following childbirth needs to be addressed and there is the potential for routine clinical care to recognise some key risk factors such as history of trauma or psychological problems. However, prevention alone is not enough, as some women will develop difficulties regardless of staff's efforts during delivery, which means that we need effective treatments. To date, there is almost no published research on treatment for PTSD following childbirth. Existing research focuses on debriefing after birth, and the effect of this on postpartum depression and PTSD [32-36]. The results of these studies are mixed and a recent review concluded that there is no evidence to support the effectiveness of debriefing for women following childbirth [37]. Debriefing is not recommended for treatment of PTSD after other events. In the

UK and other developed countries the recommended treatment is primarily cognitive behaviour therapy [38]. However, it is still unclear whether recommended treatments for PTSD after other events than birth are appropriate for postpartum women.

Consideration of effective treatment should not be limited to women with full PTSD. We also need to consider the potentially different treatment needs of women experiencing some aspects of distress but not fulfilling the PTSD diagnosis. In addition, we have insufficient knowledge about the natural course of distress and PTSD following childbirth to determine when or which treatment might be most effective. We therefore need prevalence and intervention studies with longer-term follow-up to gain more information. It was speculated that there might be a 'sensitive period' during which intervention should not occur (or even could be ineffective) due to postpartum physiological changes taking place.

Finally, we discussed changes to clinical practice that might help prevent distress and PTSD. Possible areas included facilitating communication and enhancing the father's role. Possibilities for implementing these changes were also discussed. It was noted that identification of women with difficulties ethically presumes available effective treatment and therefore perinatal clinics should have access to people with appropriate expertise to treat women. A tension was recognised between the fact that there are inadequate resources to treat PTSD after birth, and our belief that specialist training for treatment of PTSD after childbirth is recommended to improve effectiveness. We also need collaboration between researchers who have expertise in both areas of PTSD and psychotherapy. A model of integrated care was discussed that would involve obstetrics, midwifery, clinical psychology and psychiatry.

Consequences of PTSD following childbirth

PTSD following childbirth inevitably affects more than a single individual, i.e. the woman, baby and partner, and may impact in a variety of ways [39]. Although women with PTSD following childbirth share a core group of symptoms with those observed following other traumas, i.e. avoidance, hyperarousal and re-experiencing, we also need to consider other consequences of traumatic birth, such as effects on mother-infant attachment/care, and the sexual and marital relationship [39, 40]. Other aspects concern future reproductive choices; hormonal/physiological adjustment; physical recovery and the impact of the body area involved in terms of genitals being associated with trauma. In addition, the experiences of others in terms of PTSD in the partner; and the impact on healthcare staff who attend the birth need to be considered.

A critical issue for research in this area is the need to establish what constitutes normal responses to parenthood. Changes following birth are normal [41].

Therefore, we need to consider the parenting literature and PTSD literature to separate normal responses to parenting from traumatic responses. Research looking at the impact of traumatic birth should include comparison groups of postpartum women without distress to examine this directly. Other considerations for research are the measurement and definition of quality of life, the need for large samples if studying the effects of PTSD prospectively, and taking into consideration that different populations may have different experiences, e.g. hospital birth versus home births.

Finally, it was noted from clinical experience that a few other issues might warrant reflection, such as whether a subsequent positive birth experience can be redemptive.

There are anecdotes of this happening, although clinical experience does not always confirm this. Another suggestion was to examine long-term consequences of when women's view of their body as inviolable is disrupted by traumatic birth and how this affects these women's subsequent experience of menstruation, menopause, gynaecological surgery, etc. Speculation also occurred over the possible effect of breast-feeding on PTSD after birth. For example, positive breast-feeding experiences might help develop a strong mother-baby bond, whereas negative breast-feeding experiences can add to a woman's stress in the postpartum period.

The discussion ended by considering recommendations for screening and treatment, which are shown in Table 2.

- insert Table 2 about here -

Discussion 3: Diagnostic and conceptual issues

Diagnostic and conceptual issues are closely inter-related. Decisions about what constitutes PTSD have an effect on the diagnostic criteria used and consequently how PTSD is measured. Hence, this discussion considered diagnostic and conceptual issues in relation to PTSD after birth. The discussion opened with a caveat that increasing litigation has promoted a culture of blame and victimisation. This has spawned a PTSD 'industry', which risks devaluing the theoretical construct of PTSD. Hence, we discussed the need to recognise PTSD symptoms but not pathologise potentially normal adaptation.

In relation to PTSD following childbirth we discussed three issues: (i) whether PTSD following childbirth is the same as PTSD after other events; (ii) what label is most

appropriate for PTSD following childbirth; and (iii) whether we should broaden our focus to include various forms of distress. As before, recommendations for research are given at the end of the section.

Is PTSD following childbirth the same as PTSD after other events?

First the distinction was made between diagnostic PTSD following childbirth and birth-related distress. This is not to minimise birth-related distress, which may be clinically significant. However, if research in this area is consistent with PTSD research in other areas it allows for cross-referencing. Scientific credibility is important if PTSD following childbirth is to be validated and established, which is a necessary pre-requisite to making treatment widely available. The value of diagnostic criteria is that they are simple, enable comparison between different research studies, and fit well with treatment protocols.

Second, it remains to be established whether the phenomenology of PTSD following childbirth is the same as PTSD after other events. Research needs to examine whether PTSD following childbirth is similar in terms of symptoms, course, duration, aetiology, effects, and response to treatment. There are many potential ways in which birth differs from other traumatic events including that it is predictable, usually entered into voluntarily, involves huge physiological and neuro-hormonal changes, is largely viewed by society as a positive event, and yet can involve breaches of bodily integrity that not all other traumatic events involve. It was noted from clinical experience that distress after birth often appears to be associated with the loss of the expected or desired birth, which may make it different to other traumatic events. Similarly, there may be different consequences for a woman when she is expected by

other members of her society to have had a positive experience. The experience of childbirth as a traumatic event may also differ from others in that it almost inevitably involves several individuals: the woman, her partner, the baby and care staff adding a level of complexity to the event.

It was therefore discussed whether the nature of birth allows it to fit diagnostic criteria for a traumatic stressor. As shown in Figure 1, DSM-IV event criterion A states that the event must involve the perception of life threat and an individual must respond with fear, helplessness or horror. ICD-10 criterion states that the event must be exceptionally threatening or catastrophic and likely to cause pervasive distress in almost anyone. In the UK e.g., approximately 0.1% of births are classified as objectively life-threatening ‘near miss’ episodes [42-43]. A further 0.86% births involve infant perinatal death [44]. However, studies using DSM-IV criterion A to screen perceptions of birth find that a much larger proportion of women report genuine fear, helplessness, and horror in response to a perceived threat to themselves or their baby [7, 10]. In many cases, the birth will not result in severe injury or death and therefore will not be deemed an adverse outcome from a medical perspective. In addition, women who have an objectively life-threatening experience do not necessarily develop PTSD. Hence subjective perception is critical, which fits with the DSM-IV stressor criterion but not with ICD-10. Thus, research into PTSD following childbirth should always investigate the subjective experience of birth, alongside (somatic) obstetric events.

What is in a label?

Following the above discussion, we considered what label is most appropriate to use for PTSD following childbirth. A number of different labels have been suggested, such as ‘partus stress reaction’ or ‘postnatal stress disorder’ [45-46]. More recently, some have used the term ‘postnatal PTSD’, which brings with it similar conceptual difficulties to the term ‘postnatal depression’. For example, on the one hand, psychopathology after other events is rarely referred to in relation to the event, e.g. ‘post-rape PTSD’ or ‘post-bereavement depression’. Thus using the term ‘postnatal PTSD’ may lower credibility and make comparison with other PTSD studies more difficult. Labelling PTSD following childbirth ‘postnatal PTSD’ implies unique status, which has both positive and negative implications for research and treatment. It was therefore recognised that there is a tension between recognising the unique aspects of birth and scientific credibility.

It was concluded that current research does not allow us to firmly conclude that PTSD following childbirth is uniquely different to PTSD following other events, or that PTSD following childbirth is always a direct consequence of delivery. Therefore, it was concluded that it is unhelpful to use the label ‘postnatal PTSD’ and consequently the more generic term of ‘PTSD following childbirth’ was seen as most appropriate.

Broadening focus to include distress

Finally, a theme throughout this discussion was that, although it is important to clearly define PTSD following childbirth in order to provide some comparability with other PTSD research, research should also not limit its focus only to PTSD. In clinical application, an over-emphasis on diagnostic criteria could mean that women with clinically significant distress may be ignored and not receive appropriate treatment. It

was suggested that research could broaden its focus in two ways. First, to acknowledge that posttraumatic stress reactions may not always be best conceptualised dichotomously as a disorder that is present or absent, but might instead be viewed as lying on a continuum of stress responses. Second, to examine other trauma-related psychological outcomes such as depression, anxiety, and dissociation. These points were also raised in a later discussion of theoretical issues.

It was noted that the focus on diagnostic cases or distress has different purposes and implications. Diagnosis is important in the current healthcare system because it opens a way to treatment. Less provision is made within the healthcare system to treat distress but it is still important for two reasons. First, understanding causes of distress can help us to improve maternity services. Second, distress may act as a marker for women at risk of future psychological problems.

Leading on from this we discussed where to draw the line clinically in terms of identifying women who are distressed enough to benefit from treatment. Some researchers have previously stratified women into groups of full diagnostic PTSD and sub-clinical or partial PTSD [8, 11, 12, 14]. However, the definition of what constitutes sub-clinical PTSD differs between studies, which hinder comparisons. In addition, sub-clinical disorders are not recognised by DSM-IV or ICD-10. Therefore, instead of artificially categorising women into sub-clinical groups future research should study the whole range of symptoms. However, this does not resolve the clinical problem of how to identify women who would benefit from treatment. Various suggestions were put forward, such as using the criterion of whether women

had significant distress and impairment in global functioning at least one month after birth.

The discussion ended by considering recommendations for future research, which are shown in Table 3.

- insert Table 3 about here -

Discussion 4: Theoretical issues

It is important that research and clinical practice are guided by theory as much as possible. This discussion considered two issues: (i) theoretical perspectives and posttraumatic reactions; and (ii) the role of organisational factors. Recommendations for research are given at the end of this section.

Theoretical perspectives and posttraumatic reactions

The discussion started with a brief presentation from Stephen Joseph around historical perspectives on posttraumatic reactions, including consideration of the medical model and the introduction of the diagnostic category of PTSD within the psychiatric literature, moving to a discussion of current work in the field of positive psychology and posttraumatic growth. Here emphasis is on considering responses from a non-medical model perspective as part of normal processing. This offers an alternative to categorising symptoms and creating diagnostic dichotomies, by instead emphasising the different ways in which survivors of trauma may emotionally process their experiences i.e. cognitive assimilation versus cognitive accommodation [47].

It was discussed whether problematic post-traumatic stress reactions could be considered as occurring when normal processes had become 'stuck', in a comparable way to pathological grief [48]. Given that the meaning people make of events appears to be fundamental to whether they adapt or not, perhaps research should focus more on how the meaning women make of birth links to positive or negative change. There was also discussion of whether there were societal pressures to 'return to the person you were before', as oppose to changing and developing as a result of the experience. A strong distinction was drawn between information processing as an ongoing adaptive process and notions of pathology and abnormality. This broader conceptualisation of posttraumatic stress as a result of normal adaptational processes getting 'stuck' has numerous implications. For example, prevention and intervention would be re-conceptualised not only in terms of the alleviation of posttraumatic stress reactions but also in terms of posttraumatic growth [47, 49].

In terms of adaptation, variables such as social support and coping are likely to be important [25, 49, 50]. The discussion emphasised how the types of social support and coping that are important are likely to differ according to the time since birth. This needs to be recognised and explored by longitudinal research. As in other discussions, there were questions over whether childbirth is similar or different to other traumatic events. One view that emerged from this discussion was that it was different in terms of breaching physical boundaries and the particular resonances that this might evoke.

The role of organisational factors

There was a recognition that psychologists had been instrumental in many of the studies to date and it was pointed out that psychologists inevitably tend to psychologise phenomena. Concerns were raised that this has led to research focusing on the psychological characteristics of women (predisposing factors) [51] rather than aspects of the event, environmental or organisational factors. For example, there has been little research considering different birth events and how women generally evaluate these in terms of how traumatic they are. Similarly, the role of social and cultural context of birth has been largely ignored by research, despite the fact that this is likely to lead to powerful expectations on the part of the woman, their partner, and the people around them.

As a consequence of this narrow focus to date, a number of suggestions for future research were made, such as focusing on organisational and healthcare factors to identify ways of preventing initial traumatisation. Another suggestion was that research focus on interactions between obstetric and psychological variables and look not only at the presence or absence of an event, such as instrumental delivery, but also how the event was handled. The inclusion of interpersonal factors as well as event factors may result in greater explanatory power in terms of why certain events lead to different reactions following a distressing childbirth. We considered whether the psychodynamic ‘victim and perpetrator’ model of PTSD from general trauma literature could be applied to PTSD after birth. This is not to suggest that medical staff are perpetrators but rather to encourage a shift in focus to include staff issues or characteristics that may be important.

A philosophical debate about whether research influences policy and/or whether values influence practice led to the suggestion that we examine values around birth. For example, the philosophy in midwifery emphasises normality in childbirth. It would be interesting to examine what happens when there is a mismatch or conflict between values of midwifery and those of women. There was a suggestion that when birth does not go according to expectations this may lead to “shattered assumptions” in both midwives and women. It therefore would be interesting to examine discrepancies between expectations, and differences associated with care and staff beliefs.

The discussion ended by outlining recommendations for future research, which are shown in Table 4.

- insert Table 4 about here -

Synthesis and conclusions

These discussions raised a number of themes for future research and conceptual tensions in the study of PTSD following childbirth. Themes that were raised throughout are (i) whether PTSD following childbirth is analogous to PTSD after other events; (ii) a need to broaden focus beyond diagnostic PTSD and recognise the range of possible responses; (iii) a need to account for the subjective experience of birth as well as obstetric events; (iv) the importance of examining what and how we measure aspects of traumatic birth and responses; and (v) a need to recognising social, organisational, and cultural influences on the birth experience and subsequent adjustment to birth.

It seems that we are moving towards more holistic models of conceptualisation and making explicit the values that guide our research, alongside a general critique of using diagnostics and focusing only on PTSD. However, diagnostic PTSD still requires consideration as it provides a common scientific language making research comparable, validating the area and having the potential to drive clinical provision. Hence, at the current time, a suggested way forward is to take a broad focus, including diagnostic PTSD as well as other outcomes.

A number of tensions were also identified during these discussions, such as (i) tensions between clinical and scientific needs; (ii) tensions between conceptualising PTSD as a diagnostic category or as part of a continuum of distress; (iii) tensions between process models that focus on change and processing of events as normal versus psychiatric models that focus on pathology; and (iv) tensions between practice and theory. Tensions between clinical needs on the one hand and scientific evidence are similar to those between theory and practice. This is exemplified in the observation that, although our theoretical and scientific understanding of PTSD following childbirth is developing, clinical services remain scarce and those that are provided are largely independent of existing knowledge. For example, in the UK debriefing services are frequently provided for women after birth, despite evidence suggesting it is ineffective [37].

Tensions between conceptualising trauma anxiety reactions after childbirth as a diagnostic category or continuum, and between process and psychiatric models of trauma reactions are also related. These views have implications in terms of how trauma anxiety reactions after childbirth and other reactions are examined and

measured, and point to different recommendations. At this stage, what is important is to be aware of these opposing views and the strengths and limitations of each. Which approach is actually taken should be guided by the research question. For example, research grounded in the medical model, e.g., whether PTSD after birth is similar to PTSD after other traumatic events, must inevitably take a psychiatric approach and examine diagnostic criteria. However, we do not need to confine ourselves to medical model based research, e.g., other work may examine trauma-related processes and their relation to outcomes other than diagnostic categories.

In conclusion, these discussions aimed to share and increase understanding of posttraumatic reactions following childbirth and identify how the field needs to be developed both scientifically and clinically. It is recommended that researchers strive to integrate their work with the general literature on trauma; both the psychiatric literature on PTSD, given the importance of this for developing clinical services, and other recent non-medical model developments such as the field of growth following adversity, given the importance of this for scientific understanding of how women emotionally process their experiences. A number of themes and tensions are identified and many recommendations for future research are made. Consequently, we hope this paper will be a useful resource for researchers and clinicians interested in this area and will serve as a stimulus in facilitating high quality and clinically relevant research to improve the wellbeing of women in the postpartum.

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Appendix: Participants of discussions

Helen Allott	UK
Susan Ayers	UK
Maria Helena Bastos	Brasil/UK
Ros Crawley	UK
Debra Creedy	Australia
Elizabeth Ford	UK
Jenny Gamble	Australia
Rachel Holland	Ireland
Jane Iles	UK
Stephen Joseph	UK
Cristina Maggioni	Italy
Kirstie McKenzie-McHarg	UK
Gill Mezey	UK
Eelco Olde	The Netherlands
Jean Robinson	UK
Cathy Rowan	UK
Elsa-Lena Ryding	Sweden
Pauline Slade	UK
Johan Soderquist	Sweden
Helen Spiby	UK
Maureen Treadwell	UK
Penny Turton	UK
Tracey White	Australia
Klaas Wijma	Sweden

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Figure 1. DSM-IV diagnostic criteria for PTSD

Criteria		
A	Stressor	<ul style="list-style-type: none"> • Trauma involves actual or threatened death/serious injury or threat to physical integrity of self or other • Individual responded with intense fear, helplessness or horror
	Symptoms	
B	Re-experiencing	<ul style="list-style-type: none"> • Recurrent and intrusive distressing recollections of the event
	1 or more:	<ul style="list-style-type: none"> • Recurrent distressing dreams of the event • Acting or feeling as if the event were recurring (e.g. flashbacks, hallucinations) • Intense psychological distress at exposure to internal or external cues that symbolise or resemble an aspect of the event • Physiological reactivity on exposure to internal or external cues that symbolise or resemble an aspect of the event
C	Avoidance & Numbing	<ul style="list-style-type: none"> • Efforts to avoid thoughts, feelings, or conversations associated with the event • Efforts to avoid activities, places, or people that arouse recollections of the event
	3 or more:	<ul style="list-style-type: none"> • Inability to recall an important aspect of the trauma • Diminished interest or participation in significant activities • Feeling of detachment or estrangement from others • Restricted range of affect • Sense of foreshortened future
D	Arousal	<ul style="list-style-type: none"> • Difficulty falling or staying asleep
	2 or more:	<ul style="list-style-type: none"> • Irritability or outbursts of anger • Difficulty concentrating • Hypervigilance • Exaggerated startle response
E	Duration	1 month or more
F	Disability	Symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Table 1. Recommendations for research

Prevalence and Comorbidity: Recommendations for research	
1	Prospective research is needed to examine PTSD in pregnancy and postpartum.
2	PTSD cases should be established using clinical interviews or questionnaires with established sensitivity and specificity.
3	Many gaps in our knowledge need to be addressed such as cross-cultural variations in PTSD following childbirth - particularly in developing countries; PTSD in men; and the course of PTSD over time.
4	Researchers should draw on general trauma literature to examine similarities and differences with PTSD following childbirth.
5	Research should directly examine whether PTSD following childbirth differs in symptoms, course, and duration, and comorbidity to PTSD following other events.
6	Research should compare and contrast postnatal depression and PTSD following childbirth.

Table 2. Recommendations for research and clinical applications

Screening and Treatment: Recommendations	
1	Innovations in clinical practice must be based on well-designed research, emphasising the need for evaluation.
2	International, cross-cultural, and multidisciplinary collaborations are to be encouraged, particularly as cross-cultural research is lacking in this area.
3	Screening and detection of PTSD must consider measurement issues.
4	Research is needed to design and validate appropriate screening and detection measures.
5	To find effective treatment there is a need for efficacy research using large, multicentre trials.
6	Education of healthcare workers and women is necessary to support clinical change.

Table 3. Recommendations for research

Diagnostic and Conceptual Issues: Recommendations for Research	
1	Research needs to examine whether PTSD following childbirth is similar to PTSD after other events in terms of symptoms, course, duration, aetiology, effects, and response to treatment.
2	Research should include measures of the subjective experience of birth as well as obstetric information.
3	Research should examine the range of psychological outcomes after birth including PTSD, but not use sub-clinical categories.
4	Research should consider the association between different types of symptoms and outcomes.

Table 4. Recommendations for research

Theoretical Issues: Recommendations for Research	
1	It is important to develop a research agenda that leads to ways of changing organisational infrastructure to prevent many traumatic births occurring, such as research into communication, staff awareness, values and expectations.
2	Research needs to focus more on the subjective experience of birth, rather than the presence or absence of obstetric interventions.
3	Researchers must consider measurement of broader outcomes. Focusing only on diagnostic measures of PTSD perpetuates emphasis on the presence or absence of disorder and ignores the full range of responses to birth.

Current knowledge on the subject	
1	A proportion of women develop post-traumatic stress disorder (PTSD) following childbirth.
2	Increasingly more research is being carried out in this area
3	However, there are many gaps in our knowledge that need addressing
4	Conceptual and methodological issues also need to be considered

What this study adds	
1	Summarises current understanding of PTSD following childbirth.
2	Identifies key conceptual and methodological issues that need to be considered in this area.
3	Identifies areas that need further research.
4	Provides recommendations for research.