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ORIGINAL RESEARCH – QUANTITATIVE

Responses to birth trauma and prevalence of posttraumatic stress among Australian midwives

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ABSTRACT

Background: Midwives frequently witness traumatic birth events. Little is known about responses to birth trauma and prevalence of posttraumatic stress among Australian midwives.
Aim: To assess exposure to different types of birth trauma, peritraumatic reactions and prevalence of posttraumatic stress.
Methods: Members of the Australian College of Midwives completed an online survey. A standardised measure assessed posttraumatic stress symptoms.
Findings: More than two-thirds of midwives (67.2%) reported having witnessed a traumatic birth event that included interpersonal care-related trauma features. Midwives recalled strong emotions during or shortly after witnessing the traumatic birth event, such as feelings of horror (74.8%) and guilt (65.3%) about what happened to the woman. Midwives who witnessed birth trauma that included care-related features were significantly more likely to recall peritraumatic distress including feelings of horror (OR = 3.89, 95% CI [2.71, 5.59]) and guilt (OR = 1.90, 95% CI [1.36, 2.65]) than midwives who witnessed non-interpersonal birth trauma. 17% of midwives met criteria for probable posttraumatic stress disorder (95% CI [14.2, 20.0]). Witnessing abusive care was associated with more severe posttraumatic stress than other types of trauma.
Discussion: Witnessing care-related birth trauma was common. Midwives experience strong emotional reactions in response to witnessing birth trauma, in particular, care-related birth trauma. Almost one-fifth of midwives met criteria for probable posttraumatic stress disorder.
Conclusion: Midwives carry a high psychological burden related to witnessing birth trauma. Posttraumatic stress should be acknowledged as an occupational stress for midwives. The incidence of traumatic birth events experienced by women and witnessed by midwives needs to be reduced.

Summary of relevance:

Problem or issue

Midwives' responses to witnessing different types of traumatic birth events and the prevalence of posttraumatic stress among Australian midwives have received little attention.

What is already known

Midwives witness traumatic birth events and may be at risk for developing posttraumatic stress symptoms.

What this paper adds

Evidence that witnessing care-related interpersonal birth trauma provokes strong emotional reactions in midwives and may have long-term implications for their psychological well-being. Almost one-fifth of Australian midwives meet criteria for probable PTSD.

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1. Introduction

Posttraumatic stress disorder (PTSD) is a trauma-related condition which may develop in response to experiencing or witnessing a traumatic event.[1] Research in the USA[2] and in the UK[3] has identified that midwives can develop posttraumatic stress symptoms following exposure to birth trauma.

PTSD symptoms in midwives are an important consideration because of the potential negative consequences for care. There is evidence that other health professionals reporting PTSD symptoms experience empathic impairment and emotionally-distant caregiving.[4–6] Health professionals with PTSD may also overestimate the likelihood of adverse events, known as 'judgment bias'.[7,8] PTSD symptoms in midwives may adversely affect their relationships with women in their care and reduce their clinical decision-making skills.

Maternity professionals have described a variety of events during labour and birth that can trigger traumatic stress responses.[9–11] These events included not only obstetric emergencies[10] but also "rough approaches" towards women by physicians, and disrespectful interactions between caregivers and women.[9,11] Traumatic events are commonly distinguished as being interpersonal, such as sexual and physical or psychological assault and abuse, or non-interpersonal trauma, such as accidental injury and natural disaster.[12,13] Epidemiological studies have consistently identified higher rates of posttraumatic stress following exposure to interpersonal trauma than to non-interpersonal trauma.[14–17]

Midwives' personal reactions to birth have not received much scholarly attention.[18] Emotional reactions during and shortly after a traumatic experience, referred to as peritraumatic distress, reflect the subjective interpretation of the trauma. Peritraumatic distress may heighten trauma-related memory and sensitise the neurobiological systems implicated in the pathogenesis of PTSD.[19] Individuals who experience more severe peritraumatic distress have a higher risk of developing posttraumatic stress.[20,21]

In Australia, as many as 43% of childbirth events are experienced as traumatic by women.[22] However, reports about midwives' exposure to birth trauma, including a description of different types of birth trauma and peritraumatic distress are limited.[11] The aim of the present study was explore midwives' emotional responses to witnessing different types of birth trauma and to estimate the prevalence of PTSD symptoms.

2. Methods

2.1. Study design

A descriptive, cross-sectional survey design was used.

2.2. Participants

Australian midwives who were members of the Australian College of Midwives (ACM).

2.3. Measures

Study-specific questions assessed personal and professional details including age, traumatic life events, length of registration, hours worked per week, main place of practice and number of births attended per month.

Participants were invited to identify a traumatic birth event they had witnessed when providing care for a woman (the 'index' trauma). This index event served as the basis for inquiry about trauma event characteristics, emotions during or shortly after the traumatic event and traumatic response symptoms.

2.3.1. Trauma event characteristics

The Traumatic Events in Perinatal Care List (TEPCL) is a study-specific measure to assess different types of traumatic events that can be witnessed by care providers during labour and birth. Research which describes nurses and midwives' experiences of witnessing traumatic birth events was reviewed to identify different types of traumatic birth events.[9–11] These descriptors, together with findings from research into traumatic childbirth experiences with women,[23] were used to create a list of care-related interpersonal and non-interpersonal trauma event features.

The TEPCL was pilot-tested with a convenience sample of midwives ($n = 45$) who were asked to indicate if they considered the feature relevant in the context of professional trauma exposure in midwives (on a scale of relevant, not sure, not relevant), and if the trauma feature would concern them personally (yes/no). In addition, midwives were asked for feedback regarding the clarity of wording in the description of the trauma feature (on a scale of clear, not sure, unclear). Features described in the list involved death and severe injury of mother or baby, disrespect of women's dignity, involvement in suboptimal care, and abusive care or management. The findings indicated that in addition to obstetric events involving death or severe injury of women and babies, midwives also identified witnessing trauma related to physical and psychological mistreatment by perinatal caregivers as potentially traumatic.

In the final version of the Traumatic Events in Perinatal Care List (TEPCL) non-interpersonal birth trauma was represented by the categories of (1) death (maternal or foetal, actual or threat of); and (2) injury (maternal or foetal, actual or threat of). Interpersonal birth trauma was represented by the categories of (1) abusive care (or management); (2) poor care (e.g., witnessing or participating in a procedure that is not in the woman's and/or the baby's best interest); and (3) interpersonal disrespect (e.g., witnessing the woman's dignity being ignored, her wishes overridden).

Participants indicated (yes/no) if their witnessed index traumatic birth event had any of the features described in each category; respondents could nominate more than one category to describe the nature of the witnessed index birth trauma.

2.3.2. Peritraumatic emotions

Midwives were asked to indicate whether or not (yes/no) they recalled feeling fear, horror, and helplessness during or shortly after the traumatic event. In addition, they were asked to indicate (yes/no) whether or not they recalled feeling anger or guilt during or shortly after the index birth trauma event about what happened to the woman, responsible for what happened, or powerless to change the management of the birth.

2.3.3. Primary outcome

The primary outcome, probable PTSD, was assessed with the PTSD Symptom Scale Self-Report version (PSS-SR).[24] Respondents rate their stress symptoms following an index trauma.[24,25] The PSS-SR consists of 17 questions which are presented on a four-point Likert scale ranging from 'not at all' to '5 or more times per week/almost always'. The questions are grouped in three symptom clusters identified in DSM-IV: re-experiencing, avoidance, and arousal (Criteria A, B, and C respectively).[24–26] The PSS-SR produces scores ranging from 0 to 51.

The PSS-SR has high internal reliability for the total scale ($\alpha = 0.91$) and each subscale of re-experiencing ($\alpha = 0.78$), avoidance ($\alpha = 0.80$) and arousal ($\alpha = 0.82$).[24] The PSS-SR has a specificity of 1.0 and a sensitivity of 0.62 using the Structured Clinical Interview for DSM (SCID) and identified 86% of PTSD cases.[24] The fact that the PSS-SR does not produce false positives (specificity of 1) confirms that probable PTSD in midwives

following professional exposure to birth trauma is a genuine phenomenon.

We assessed PTSD symptoms using DSM-IV criteria as the development of standardised measures that assess PTSD according to DSM 5 criteria are still in their infancy.[27] As PTSD is diagnosed through a structured clinical interview, we have adopted the term "probable PTSD"[28] to describe the cluster of symptoms reported by participants.

Participants were considered to suffer from 'probable PTSD' if they met DSM-IV criteria for PTSD[25] (a score of at least 'one' on the four-point frequency scale for a minimum of one intrusion, three avoidance, and two arousal symptoms) and scored 14 or more on the PSS-SR. A conservative estimate of 'probable PTSD' was achieved by the PSS-SR cut-off $\geq$14.

2.4. Data collection

The Australian College of Midwives (ACM) agreed to distribute an email to members (n = 4578) inviting participation and including a link to the online survey in March 2014. Two weeks after the initial invitation to participate, a reminder email was sent. Data were collected exclusively via the anonymous online survey questionnaire.[29] The survey was open for a period of three months.

2.5. Ethical considerations

The authors obtained approval for the study from the Griffith University Human Research Ethics Committee (Reference number: NRS/50/13/HREC). Contact details of the researchers were provided. Immediate support and referral to appropriate counselling services in the respondent's State or Territory were offered in case of distress being aroused by participation in the study.

2.6. Approach to analysis

Data collected from the online survey was analysed using the Statistical Package for Social Sciences (SPSS). Total and subscale scores for the PSS-SR were calculated and a variable "probable PTSD" was created. Descriptive statistics were used to explore the mean score, standard deviation, and range of all continuous variables. Frequencies for the birth trauma event characteristics and for peritraumatic emotions were assessed. Associations between birth trauma event characteristics with posttraumatic stress were assessed using Mantel–Haenszel test. Associations between birth trauma event characteristics and peritraumatic emotions were analysed using Chi-square tests and expressed as odds ratios (OR) with 95% confidence intervals (CI). Probability (p) of a Type 1 error was set at 0.05.

3. Findings

Of the surveys initiated online (n = 768), 81 respondents completed only the demographic information section and these surveys were discarded, leaving a final sample of 687 out of a possible 4578 (response fraction = 15.4%). Of these, 601 (88%) completed the PTSD Symptom Scale Self-Report (PSS-SR).

3.1. Characteristics of participants

Mean years of registration was 14.23 (SD 11.2, range = 0–44; 95% CI [13.4, 15.1]) for midwives in this sample. They attended an average of 7 births per month (SD 8.4, range = 0–60; 95% CI [6.5, 7.8]). The majority had a Bachelor's degree (56%), 19% a diploma or certificate and 24% a Masters or Ph.D. as highest qualification. Midwives in the current study sample were younger and more likely to work in a hospital than all employed midwives in Australia.[30] The proportion of midwives who had been involved in providing perinatal care in the last 12 month in this sample was more than double compared with employed midwives in the national workforce,[30] indicating that the study predominantly attracted the participation of midwives working with birthing women (Table 1).

3.2. Trauma event characteristics

Six hundred eighty-seven (n = 687) midwives described features of a witnessed index trauma. Midwives recalled an average of two (SD 1.3, range 0–5) event features associated with the witnessed index birth traumatic event. The index traumatic events selected by midwives were death (39.6%), injury (33.2%), poor care (49.4%), harmful acts (39.3%) and interpersonal disrespect (37.1%).

The majority of midwives (67%) recalled that their witnessed index traumatic birth event involved at least one care-related interpersonal event feature and more than one-third recalled a birth event consisting of interpersonal care-related trauma features (disrespectful, poor or abusive care) only (38%). An event consisting of at least one non-interpersonal feature (death or injury) was recalled by 61% of midwives and 32% recalled an event consisting of non-interpersonal features exclusively. An event that involved both interpersonal and non-interpersonal trauma features was recalled by 30% of midwives.

3.3. Peritraumatic emotions

Peritraumatic reactions to the index event were described by 684 midwives. A majority of midwives recalled reacting with helplessness (92%) or with feeling horrified (75%) to witnessing the

Table 1
Personal and professional characteristics of the sample compared to the national midwifery workforce.

Characteristics	Sample N = 687		National Midwifery Workforce
Mean (SD, range, 95% CI) age (years)	43.20 (10.86, 21–71, [42.42, 44.16])		48.1*
Mean (SD, range, 95% CI) hours worked per week	30.94 (11.78, 0–80, [30.06, 31,87])		37.7*
Main place of practice	n	%	%
• Hospital	552	80.3	68.5*
• Public	518	75.4	NA
• Private	34	4.9	NA
• Private midwifery practice	39	5.7	1.3*
• Birth centre	20	2.9	NA
• Education	18	2.6	2.8
• Private obstetric practice	3	0.4	1.0
• Other (including community practice, aboriginal health services, and outpatient clinics)	35	5.1	26.4*
Attended a birth in the last 12 months	564	82.1	37.6*

NA = data not available.
* Difference statistically significant ($p < 0.05$).

traumatic birth event. Half of the midwives (51%) recalled an immediate reaction of fear. In addition, a majority of respondents recalled deep concern (97.2%), anger (84.2%), and powerlessness (82%). More than two-thirds (65.3%) recalled feeling guilty about what happened to the woman and almost half (46.7%) felt responsible for the traumatic event they had witnessed.

3.4. Associations between peritraumatic emotions and birth trauma characteristics

Midwives who recalled an index birth trauma event that included interpersonal trauma features were less likely to recall fear than those who did not (OR = 0.46, 95% CI [0.33, 0.64]). However, they were significantly more likely to recall other forms of peritraumatic distress; they were 20 times more likely to recall anger (OR = 20, 95% CI [11,35]), six times more likely to recall feeling powerless (OR = 5.8, 95% CI [3.8, 8.8]), four times more likely to recall reacting with feelings of being horrified by witnessing birth trauma (OR = 3.89, 95% CI [2.71, 5.59]) and twice as likely to feel guilty (OR = 1.90, 95% CI [1.36, 2.65]) or responsible (OR = 1.95, 95% CI [1.40, 2.72]) for what happened to the woman.

3.5. Prevalence of probable PTSD

PSS-SR total scores ranged from 0 to 46 out of a possible score of 51. The mean score was 7.7 (SD 8.3; 95% CI [7.0, 8.3]). The mean score for the PSS-SR re-experiencing subscale was 2.9 (SD 2.8; 95% CI [2.6, 3.1]). Mean PSS-SR avoidance subscale score was 2.6 (SD 3.6; 95% CI [2.4, 2.9]). Mean PSS-SR arousal subscale score was 2.2 (SD 3.0; 95% CI [1.9, 2.4]). Reliability of the PSS-SR in the current study was excellent (Cronbach's alpha coefficient of 0.9). The prevalence of probable PTSD was 17% (n = 102, 95% CI [14.2, 20.0]).

3.6. Associations between posttraumatic stress and birth trauma characteristics

Respondents who recalled an index trauma event that included abusive care had a significantly higher PSS-SR total score ($Z = -2.33$, $p = 0.02$). These respondents were also significantly more likely to report trying to avoid situations that trigger memories of the traumatic birth event (avoidance symptoms, $Z = -2.20$, $p = 0.03$) and to feel constantly alert/on the lookout for signs of danger (arousal symptoms, $Z = -2.12$, $p = 0.03$).

Respondents who recalled an index event including injury had significantly higher total PSS-SR scores ($Z = -2.69$, $p = 0.01$) and were significantly more likely to report they are reliving the traumatic experience (re-experiencing symptoms, $Z = -2.90$, $p < 0.001$) and feel constantly alert/on the lookout for signs of danger (arousal symptoms, $Z = -3.17$, $p < 0.001$) than respondents who did not recall injury. Event features of 'death', 'poor care' and 'interpersonal disrespect' were not significantly associated with PSS-SR total scores or any of the three PSS-SR symptom clusters.

4. Discussion

This paper presents the findings of the first, population-based survey investigating the prevalence of posttraumatic stress in Australian midwives. Using a rigorous, conservative assessment approach, a 17% prevalence of probable PTSD was identified. This prevalence estimate is lower than the 33% established by Sheen et al.,[3] in UK midwives and 36% in US nurse-midwives reported by Beck et al.[2] The inconsistency is likely to be due to differences in conceptualisation and measurement of PTSD.

In contrast to other recent studies, the current study applied a very conservative approach to determining PTSD symptoms using the PSS-SR. Sheen et al.,[3] used the Impact of Event Scale (IES) which has lower specificity (0.77)[31] than the PSS-SR (1.0).[24] Determining PTSD with an instrument that is less specific leads to more participants meeting the threshold requirements for PTSD. The less specific PTSD symptom measurement may also explain why Beck et al.,[2] found a prevalence which is more than double the estimate identified in the current study. Beck et al.,[2] assessed trauma symptoms with the Secondary Traumatic Stress Scale (STSS). The STSS has only been validated for secondary traumatic stress (STS), occurring after indirect exposure to trauma, including hearing about a traumatic event.[32] Determining probable PTSD with the STSS may result in more respondents meeting threshold criteria.

Our study is the first to investigate the prevalence of midwives' perceptions of different types of birth trauma. The majority of midwives in the current study (67%) recalled an index birth trauma event that included care-related interpersonal trauma and more than one-third recalled an event that had care-related interpersonal trauma features only. The findings indicate that witnessing care-related trauma including disrespectful and abusive care can occur frequently. This is congruent with recent findings which describe mistreatment of women during labour and birth as 'obstetric violence',[33] and as a global problem.[34] The current findings also indicate that care-related trauma can occur in the absence of obstetric emergencies. This is significant, as previous researchers conceptualised care-related interpersonal birth trauma as an environmental factor that may amplify traumatic stress in maternity professionals[2,9] but not as a traumatic birth situation in itself.

This study is also the first to investigate the prevalence of peritraumatic emotions following professional exposure to birth trauma and associations with type of witnessed birth trauma. The findings show that witnessing birth trauma can lead to strong emotional distress in midwives, including feelings of horror, guilt, and anger about what happened to the women in their care. In the current study, respondents recalled particularly strong emotional reactions to witnessing birth trauma that included features of disrespectful and abusive care. This echoes qualitative findings by Rice and Warland[11] which also described strong emotional reactions in Australian midwives in response to witnessing obstetric interventions they deemed unnecessary and unwanted by the woman in their care.

Respondents who witnessed birth trauma including abusive care also had more severe posttraumatic stress symptoms. This is consistent with other studies where individuals who had been exposed to interpersonal trauma were at high risk of developing posttraumatic stress compared to individuals exposed to other types of trauma.[35] It has been suggested that interpersonal trauma may be particularly pathogenic because it can violate an individual's assumptions about the safety and predictability of the world and is a stark reminder of the capacity of other humans to engage in deliberately harmful activities.[16] Midwives' strong peritraumatic emotional responses of horror when witnessing care-related trauma in the current study suggest that this form of birth trauma may be perceived as a threat to their sense of personal and professional integrity.

The high prevalence of intense emotional distress following exposure to birth trauma and probable PTSD found by us suggests a substantial psychological burden in the Australian midwifery workforce and highlights the need to acknowledge midwives' exposure to birth trauma as occupational stress. Prevention strategies that target organisational practices and provide support for individuals have been identified to be most efficient in addressing occupational stress.[36]

At the individual level, introducing the notion of birth trauma for both women and midwives in midwifery education programmes may be useful to raise students' awareness. Understanding contributing factors and strategies to minimise such events

may assist to alter midwives' perceptual, information processing, cognitive and behavioural responses to traumatic birth events and reduce the probability of posttraumatic stress symptoms. Furthermore, continuing professional training for midwives needs to consider midwifery-specific features of trauma exposure such as midwives' close relationships with women during labour and birth[37,38] and midwives' potential to identify with women in their care.[11,39] It has been suggested that these features may render midwives particularly vulnerable to experiencing distress when witnessing birth trauma.[40]

'Trauma stewardship' refers to mindful avoidance of identifying with care recipients' trauma when providing care during or after traumatic events.[41] Mindful avoidance is an element of emotional literacy which is defined as a person's capacity to register and acknowledge their emotional responses, and recognise how they influence thoughts and actions.[42] Together trauma stewardship and emotional literacy may help midwives to effectively process their reactions following exposure to birth trauma. This may enable the midwife to minimise their own personal distress when witnessing birth trauma without withdrawing from the supportive relationship with the woman in her care. The high prevalence of care-related interpersonal birth trauma suggests that midwives may also benefit from developing "birth trauma literacy". This could include being able to distinguish between care-related, interpersonal birth trauma often induced by disrespectful and abusive care, and non-interpersonal birth trauma related to obstetric emergencies.

Occupational health and safety legislation reinforces employers' responsibility to provide a work environment that is free of risk to employees' psychological health.[36] In settings where traumatic stress is acknowledged as occupational stress, employers have a duty of care to develop strategies to reduce cumulative traumatic exposures that may affect the workforce.[43]

Maternity care organisations should systemically target exposure to birth trauma by introducing trauma-informed care and practice (TICP).[44] TICP aims to promote an organisational culture of trauma awareness, which may be an effective strategy to reduce trauma in the maternity care context. TICP approaches have been applied in a variety of health services to reduce the incidence of trauma in consumers and staff.[44] TICP is based on the assumption that many people experience trauma and recognises how trauma affects all individuals involved with an organisation or system, including the workforce. TICP acknowledge care providers' own reactions to trauma in those they care for, as well as their own traumatic life experiences.[45] An essential component of trauma-informed care and practice is that health services do not inflict additional trauma in consumers or staff.[46] The findings of the current study indicate that some maternity care services may be failing to prevent or adequately address disrespectful or abusive interactions from some care providers, and, therefore, may unintentionally contribute to trauma experiences for women and midwives.

5. Limitations

The response rate of this study was low at 15.4% and it was not possible to obtain data on the non-responders. Consequently, the results may be an under or over estimate of the phenomena at hand.

Retrospective reporting means that perceptions of the nature of the birth trauma event and peritraumatic emotions may have been modified over time and therefore might differ from reports obtained immediately following the witnessing of a traumatic birth event. In addition the cross-sectional design cannot exclude the possibility that participants' reported PTSD symptoms were associated with other, more current, traumatic experiences.

It is also possible that the wording of the survey "attuned" participants to their traumatic experiences. As such participants may have recalled particularly negative aspects of traumatic events. In the current study this may have led to a retrospect overestimation of negative responses to witnessing trauma in midwives.

Study questions did not include details about who perpetrated actions of disrespectful and abusive perinatal care witnessed by respondents. This makes it impossible to confirm if actions of abusive/disrespectful care were perpetrated by midwives or by other medical staff.

6. Conclusion

In this current study witnessing care-related interpersonal birth trauma was common. A significant proportion of the midwifery workforce meet the criteria for probable PTSD. Exposure to birth trauma needs to be acknowledged as an occupational hazard and posttraumatic stress as occupational stress for midwives. Trauma-informed care and practice are recommended to reduce the incidence of traumatic birth events experienced by women and witnessed by midwives.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.wombi.2016.06.006.

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