



## A socioecological model of posttraumatic stress among Australian midwives



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### ARTICLE INFO

#### Keywords:

Midwives  
Trauma  
Posttraumatic stress  
Occupational health  
Obstetric violence  
Workforce attrition

### ABSTRACT

**Objective:** to develop a comprehensive model of personal, trauma event-related and workplace-related risk factors for posttraumatic stress subsequent to witnessing birth trauma among Australian midwives.

**Design:** a descriptive, cross-sectional design was used.

**Participants:** members of the Australian College of Midwives were invited to complete an online survey.

**Measurements:** the survey included items about witnessing a traumatic birth event and previous experiences of life trauma. Trauma symptoms were assessed with the Posttraumatic Stress Disorder Symptom Scale Self-Report measure. Empathy was assessed with the Interpersonal Reactivity Index. Decision authority and psychological demand in the workplace were measured with the Job Content Questionnaire. Variables that showed a significant univariate association with probable posttraumatic stress disorder were entered into a multivariate logistic regression model.

**Findings:** 601 completed survey responses were analysed. The multivariable model was statistically significant and explained 27.7% (Nagelkerke R square) of the variance in posttraumatic stress symptoms and correctly classified 84.1% of cases. Odds ratios indicated that intention to leave the profession, a peritraumatic reaction of horror, peritraumatic feelings of guilt, and a personal traumatic birth experience were strongly associated with probable Posttraumatic Stress Disorder.

**Conclusions:** risk factors for posttraumatic stress following professional exposure to traumatic birth events among midwives are complex and multi-factorial. Posttraumatic stress may contribute to attrition in midwifery. Trauma-informed care and practice may reduce the incidence of traumatic births and subsequent posttraumatic stress reactions in women and midwives providing care.

### Introduction

Posttraumatic stress disorder (PTSD) is a trauma-related condition which may develop in response to exposure to a disturbing event (American Psychiatric Association, 2013). Posttraumatic stress in midwives is an emergent field of research. Sheen et al. (2015) investigated posttraumatic stress in UK midwives (n=421) and reported that 33% experienced symptoms commensurate with posttraumatic stress disorder. In the USA, Beck et al. (2015) found that 36% of a sample of 473 nurse-midwives showed clinically significant trauma symptoms. Little is known about PTSD among Australian midwives. However, in a qualitative investigation, Rice and Warland (2013) interviewed ten midwives about their experiences of exposure to birth trauma in the Australian health care context. Using thematic analysis of the data, the authors identified: (1) distress arising from midwives'

desire to provide 'woman-centred care' within the constraints of the medical model; (2) feelings of responsibility and guilt because some traumatic situations were caused by suboptimal care; and (3) midwives' strong empathic feelings for the women in their care.

The existence of PTSD symptoms among midwives may have important implications for midwifery practice. Posttraumatic stress can reduce empathic capacities (Nietlisbach et al., 2010; Parlar et al., 2014) and in health care professionals, can contribute to emotionally-distant care. In a qualitative study with ambulance personnel, Jonsson and Segesten (2004) found that posttraumatic stress symptoms led to emotional numbing. Ambulance personnel reported reduced empathy for patients as a means of coping with and preventing the development of trauma symptoms. Emotionally-distant midwifery care may contribute to feelings of being unsupported among women during labour and birth. Experiences of unsupportive care have been associated with

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decreased maternal perinatal mental health and can have lasting effects beyond the postnatal period (Creedy and Gamble, 2007; Ford and Ayers, 2011).

A relationship has been identified between exposure to traumatic events and an overestimation of clinical risk and defensive practice by health professionals. Exposure to a traumatic event almost doubled the likelihood of practising defensive medicine in a sample of 1313 physicians (Panella et al., 2016). In emergency personnel with PTSD (n=100), biases in risk judgement also extended to clinical situations that were previously perceived to be benign (Nortje et al., 2004). Qualitative research on midwives' experiences of witnessing birth trauma suggests that exposure to traumatic birth affects their assessment of obstetric risk (Beck et al., 2015) and leads them to practise in a defensive manner (Sheen et al., 2016).

Exposure to birth trauma among women for whom midwives provide care may contribute to the development of posttraumatic stress. In Australia, it is estimated that up to one-third of women experience childbirth as traumatic (Alcorn et al., 2010). Sheen et al. (2015) found that both witnessing and hearing women's accounts of a traumatic birth event predicted posttraumatic stress among midwives in the UK. However, Sheen et al.'s (2015) model accounted for only 6% of the variance in posttraumatic stress symptoms, suggesting that factors not considered in their predictive model may contribute to the development of posttraumatic stress.

Some researchers have proposed a 'socioecological model' of trauma based on the assumption that responses to trauma are determined by interactions among contextual factors (Harvey, 1996; Campbell et al., 2009). In line with tenets of a socioecological model, the multifactorial nature of PTSD has been confirmed by systematic reviews with large samples of military and civilian participants. These studies found associations between PTSD and interpersonal traumatic experiences, female gender, vulnerable personality traits, emotional reactions during and shortly after the event, lack of support and coincidental life stress (Brewin et al., 2000b; Ozer et al., 2003). Reviews of risk factors for work-related posttraumatic stress similarly suggest that an interplay of personal, trauma-related and work environment-related variables is key for the development of work-related PTSD (Johnston and Kumar, 2010; Sheen et al., 2014).

Previous traumatic experiences can increase the risk of developing posttraumatic stress following a current trauma experience (Graham-Kevan et al., 2015). The salience of previous trauma experiences in the development of PTSD following subsequent trauma exposure has been demonstrated in two meta-analyses of over 46 studies with 17348 participants (Brewin et al., 2000a, 2000b; Ozer et al., 2003). Brewin et al. (2000a, 2000b) concluded that a history of childhood abuse was correlated with the development of PTSD in trauma-exposed adults. Similarly, Ozer et al. (2003) found that prior trauma involving interpersonal violence predicted PTSD following current trauma exposure. However, Sheen et al. (2015) did not identify previous life trauma as a predictor for posttraumatic stress in midwives.

Negative emotions during or directly after a traumatic event, referred to as peritraumatic distress, are also known to increase the risk for PTSD (Ozer et al., 2003). As part of the World Mental Health Surveys, Karam et al. (2010) assessed the role of peritraumatic distress in lifetime PTSD in 52,826 respondents from 21 countries. They found peritraumatic fear, horror and helplessness, significantly predicted a diagnosis of PTSD. Wallbank and Robertson (2013) identified negative emotions experienced at the time of caregiving predicted stress in staff who in their professional roles, witnessed miscarriage, stillbirth, and neonatal loss. In Rice and Warland's (2013) qualitative investigation, midwives described strong peritraumatic responses such as guilt and anger about what happened to women in their care.

Empathy has been identified as a risk factor for traumatic stress reactions in health professionals, which may be of particular salience for midwives (Sheen et al., 2014). In trauma workers, empathy was found to moderate associations between previous exposure to the

traumatic event and secondary traumatic stress symptoms (MacRitchie and Leibowitz, 2010). Empathic identification, defined as the accurate emotional resonance and synchrony with another person (Newell et al., 2015), may serve as a professional tool for midwives (Leinweber and Rowe, 2010). Whilst empathic identification may facilitate supportive caregiving during labour and birth it may also place midwives at risk for traumatic stress.

Workplace decision authority describes the amount of influence employees have over the way they do their work (Karasek et al., 1998). In nurses, low levels of decision authority in the workplace have been associated with higher levels of occupational stress (Baba et al., 2013). The findings of studies with nurses suggest a relationship between opportunities for work-related control and work-related distress may also be relevant for midwives.

Work related stress is associated with trauma responses in health professionals (Sheen et al., 2014). Workplace psychological demand includes time pressure and the need to meet conflicting demands at work (Karasek et al., 1998). In nurses, high psychological demands in the workplace have been associated with increased anxiety and depression (Mark and Smith, 2012). These findings indicate that workplace psychological demands may adversely affect mental health and increase midwives' risk for posttraumatic stress.

A socioecological model has not been described in midwifery workforce research. The aim of the present study was therefore to identify the personal, trauma event-related and workplace-related variables that predict posttraumatic stress following exposure to traumatic birth events among Australian midwives.

## Methods

### Study design

A descriptive, cross-sectional design was used.

### Participants

Participants were midwives who held membership with the Australian College of Midwives (ACM). The ACM is the peak professional body for midwives in Australia. At the time of conducting the study the number of members, as estimated by an ACM representative, was 4578. A survey sample size calculation yielded a recommended sample of 580 in order to achieve a 99% confidence level with a 5% margin of error. Current registration as a midwife in Australia was the only inclusion criterion.

### Measures

#### Personal and professional information

Study-specific questions related to personal and professional characteristics including age, length of registration, primary place of work, number of births attended per month, hours worked per week, highest qualification and intentions to leave the profession. To assess participants' exposure to previous lifetime traumatic events, seven categories of traumatic events were created including (1) threat of death or injury, (2) sudden unexpected death of a family or a loved one, (3) physical assault, (4) witness to someone being assaulted, abused or killed, natural disaster, (5) victim of crime with threat of force, (6) sexual abuse or assault, and (7) a personal traumatic experience when giving birth to a baby. Participants were asked to indicate (yes/no) for each event category if they had experienced this form of previous life trauma. Three exposures: (1) physical assault; (2) being a witness to an assault, abuse or death; and (3) being a victim of a crime with threat of force, sexual abuse or assault, were recoded into a single variable called 'interpersonal life trauma'.

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