A socioecological model of posttraumatic stress among Australian midwives

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**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.
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 a predictor for posttraumatic stress following a current trauma experience (Graham-Kevan et al., 2015). Conclusions about lifetime risk of PTSD were also relevant for midwives (Sheen et al., 2015). 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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