



## Predictors of staff distress in response to professionally experienced miscarriage, stillbirth and neonatal loss: A questionnaire survey

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### ABSTRACT

**Background:** Nursing and medical staff in maternity and gynaecological settings regularly care for patients experiencing miscarriage, neonatal death and stillbirth as part of their work. Qualitative reports have suggested that perinatal death takes a significant emotional toll on staff but to date, reported distress has not been quantified.

**Objectives:** The present study, using Lazarus and Folkman's transactional model of stress, explored the extent of staff distress, and its predictive factors, in a sample of United Kingdom nursing and medical staff.

**Method:** A retrospective, cross-sectional, questionnaire survey was undertaken across five Midlands hospitals, inviting a total of 350 doctors, nurses and midwives to participate. In addition to sociodemographics, the questionnaires assessed staff distress, coping strategies and their perception of working environment via the Impact of Events Scale (IES), Positive And Negative Affect Scale (PANAS), Brief COPE, and Work Environment Scale (WES) respectively.

**Results:** 54% of eligible staff responded. IES scores revealed 55% of participants reporting subjective distress levels indicating a 'high' level of clinical concern. Multiple regression revealed that whilst no socio-demographic variable predicted distress, negative affect experienced at time of care ( $p = .002$ ; CI 0.164–0.683) negative appraisal of care given to the family ( $p = .003$ ; CI 0.769–3.358), cumulative number of losses experienced ( $p = 0.004$ ; CI 0.713–3.778), maladaptive ways of coping ( $p = .000$ ; CI 0.482–1.136), and staff perceptions of support outside work significantly predicted distress ( $p = 0.023$ ; CI –4.818 to –0.355). Working environment, specifically lack of supervisor support, was significantly correlated with negative coping strategies ( $r = -0.242$ ,  $p = 0.001$ ).

**Conclusion:** Staff working in these settings appear to experience significant levels of subjective distress, with appraisals of care and coping styles rendering staff more vulnerable. Formal training does not appear to be protective, however opportunity could be given to access support and supervision to mitigate distress and encourage reappraisal of care during which neonatal death has occurred.

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### What is already known about the topic?

- Health professionals exposed to perinatal death in the workplace may suffer significant emotional distress.
- The extent of distress in staff working in obstetric and gynaecological settings has not been systematically explored.

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## What this paper adds

- Using well validated psychometric measures, and an established model of stress, staff working in maternity and gynaecological settings show levels of distress in excess of norms.
- Distress is predicted by staff perception of the quality of care, coping strategies and limited exposure to death of patients.
- Given the extent and type of distress, organisations should consider restorative strategies to mitigate distress and optimise care quality.

## 1. Introduction

Health professionals working within obstetric and gynaecology settings must regularly manage miscarriage, stillbirth and neonatal loss as an integral part of their work. They will be exposed to varying levels of loss dependent on their role and workplace context: however as many as five losses per shift are reported in large hospital wards (McCraith, 2005). Delivering quality care in these settings is challenging in both complexity and sensitivity: Professionals must support parents experiencing intense distress, may be exposed to various products of the pregnancy, initiate discussions about funeral and disposal arrangements, but still continue with routine administrative duties in a busy unit (Gold, 2007). Yet nursing and midwifery staff particularly are expected to remain emotionally engaged with their patients and remain empathic in order to facilitate the beginning of a healthy grieving process for the family (Kohner, 2007).

The demands placed on professionals appear weighty yet their emotional impact seems little considered. The impact of working with loss during or in the aftermath of pregnancy is, as yet, little discussed although recent UK guidelines have acknowledged that doctors find their roles psychologically demanding, and the former make generalised recommendations for access to psychological support (RCOG, 2010). In a context where there is little acknowledgement that this work evokes intense and uncomfortable feelings, and with assumptions that maternity settings are positive environments where happy events occur, professionals working in such settings may find it difficult to voice their own upset.

A review of studies across the globe suggests that staff working in obstetric and gynaecological contexts suffer a range of psychological and emotional responses in caring for families experiencing loss (Wallbank and Robertson, 2008). This echoes data from other nursing specialties known to be at greater risk of developing work-related psychological disorders (Mauder, 2006; Healy and McKay, 2000), in which experience of patient death, particularly that of a child, seems profoundly stressful. Negative appraisal about the loss, and identification with those who have been bereaved, appears significantly associated with intensification of professional distress (Contro et al., 2004). Support through use of supervision can mitigate the impact of such loss but inexperienced staff appear particularly vulnerable (Regehr and Bober, 2005).

Whilst such emotional reactions are increasingly recognised, they have been unhelpfully equated in kind and intensity to bereavement experienced by parents (Wallbank and Robertson, 2008), and to date, research has surveyed only physician response to neonatal death in the US (Gold et al., 2008). The extent of nursing and medical staff distress to loss in obstetric and gynaecological settings has yet to be systematically explored. The transactional model (Lazarus and Folkman, 2004), one of the most robust and frequently used frameworks to assess stress in the workplace, has been deployed in a wide range of occupational settings including health care (McVicar, 2003). It identifies two processes as key mediators between events experienced by an individual (such as supporting parents through neonatal death) and their perception as stressful; cognitive appraisal (thought processes which underpin how events are interpreted and their cause understood), and coping (the efforts made by an individual to manage the demands of a stressful event). Knowledge, past experience, beliefs and values may all contribute to this appraisal process, and influence professionals' sense of competence to undertake work.

Our primary aim was thus to study responses of professionals working within maternity and gynaecology settings to miscarriage, neonatal death and stillbirth, using this well-validated theoretical framework appropriate to the reporting of distress in previous studies. A second aim was to assess the extent of professional distress, as well as theoretically-suggested factors which might predict it

## 2. Methods

### 2.1. Design

A cross sectional survey, informed by the transactional model of stress was used to investigate whether response to loss, coping strategies and work environment contributed to prediction of subjective distress. These domains were assessed with measures previously shown to predict variance in nurses' and doctors' distress in other settings.

### 2.2. Participants

A priori calculation of participant number, predicated on regression analysis assuming medium effect size ( $f^2 = .15$ ),  $\alpha = .05$ , power of .80 and up to sixteen predictor variables if required, indicated a minimum requirement of 143 participants (Faul et al., 2007). Thus a convenience sample of all nursing and medical personnel employed in obstetric and gynaecology settings across five hospital sites over two Trusts in the Midlands of the UK were approached. One hundred and five medical staff, 115 nurses and 130 midwives were eligible with management and senior clinical staff promoting the study to recruit potential participants. An initial letter was issued to all potential participants and reminders issued two weeks later to prompt completion of the questionnaires.

Inclusion criteria required that all participants be over 18 years old, currently working on maternity, or gynaecology wards and units and have experienced loss in a professional capacity (via miscarriage, neonatal death or

stillbirth) within the previous 18 months. Loss was defined as that occurring during pregnancy or within 30 days of birth. Staff working in neonatal or special care units were excluded since relationships with patients implied a relationship with an infant as well as the parents.

The study commenced following ethical approval from the Central Office of Research Ethics and Trust Research and Development departments. All staff meeting inclusion criteria were offered the opportunity to take part over a 3-week period in 2008 with a questionnaire made available in both paper format and on-line (hosted within a secure server on the University of Leicester website). Ethical standards in relation to internet use were rigorously adhered to, both to preserve informed consent with anonymity, and procedurally ensure integrity of data collection by preventing repeated submissions (Reips, 2002). Participants were given written or on-screen information about the research including details of further confidential support should they be experiencing difficulties related to experience of loss at work.

One hundred and eighty nine questionnaires were returned (response rate of 54%), however five of these were substantially incomplete and were excluded leaving a final sample of 184. Of the 161 non-responders, 62 were doctors (39%), 72 were nurses (44%) and 27 were midwives (17%). Responders and non-responders differed significantly regarding job role ( $t(344) = 7.066, p = .000$ ), with responders more likely to be midwives. Ethical requirements to minimise personal identifiers of participants precluded further exploration of non-responder demographics.

The questionnaire comprised five sections, piloted for brevity to encourage full completion. In the first section, respondents provided information about sociodemographic variables (age, gender, marital status, job role and ethnicity, as well as amount of training received, perceived support at home and work, personal experiences of loss and number of patient losses at work, a self-rating of their psychological and physical health on the day of questionnaire completion, and the length of time since the recalled loss). These were included as potential confounds given memory bias and participants' current situation can influence ability to recall previous events (Keuler and Safer, 1999).

### 2.3. Impact of Event Scale (IES) (Horowitz et al., 1979)

The IES in its original form was developed as a psychometrically robust clinical tool to measure subjective distress in patients following a specific stressful event. The original measure, adapted for research to reflect the DSM-IV criteria for PTSD (Joseph, 2000), is used extensively to assess staff responses to stressors at work, with average Cronbach alphas of .86 for the intrusion and .90 for the avoidance scale reported respectively (Fischer and Corcoran, 1994). The measure has been used widely in studies with nurses (Inoue et al., 2006) and doctors (Redinbaugh et al., 2003) to assess emotional sequelae of traumatic events.

The IES comprises 15 items; seven assessing intrusion symptoms and eight assessing avoidance, using a five-point Likert scale (0 = not at all to 4 = extremely), regarding

feelings at time of exposure to stressor and which combine to provide a total subjective stress score. Higher scores reflect increased frequency of symptomatology, and the measure can be used to identify levels of clinical concern with low, medium and high symptom levels based on the IES total score: low, <8.5; medium, 7.6–19.0; and high, >19 (Horowitz et al., 1979).

The current study included three further questions, informed by how obstetric and gynaecology staff stress have previously described stressors (Nallen, 2006): assessing whether respondents felt they had done a good job; that 'other things could have been done within their workplace for the family'; and how involved they believed they were with patients' care.

### 2.4. Positive And Negative Affect Scale (PANAS) (Watson et al., 1988)

The 20-item Positive and Negative Affect Schedule (PANAS), comprises two mood scales, one measuring positive, and the other measuring negative affect with items rated on a five-point scale (1 = very slightly or not at all to 5 = extremely) indicating affect experienced. Watson et al. (1988) have shown the measure has good internal consistency (Cronbach alpha of .84) and validity – demonstrated with the correlation of the PANAS with other measures of distress.

For purposes of brevity we used only the negative affect scale, which was incorporated with additional items. Participants were asked to rate the negative emotions experienced as a result of caring for one significant stressful loss.

### 2.5. Work Environment Scale (WES) (Moos, 1986)

The WES is a self-rating scale in which participants answer true or false to questions assessing their perception of the social climate of their workplace. Three domains were utilised relating to working relationships: involvement (assessing extent of staff's commitment to work); peer cohesion; and supervisor support. Dimensions were selected to reduce participant burden and with reference to factors previously shown to mediate the impact of a stressful loss at work.

The WES has been assessed for reliability and validity with Cronbach alpha of .85 (Moos, 1986), and has been used extensively to assess stress in midwifery and nursing contexts (Carlisle et al., 1994; Baker et al., 1992).

### 2.6. Brief COPE (Carver, 1997)

This abbreviated version of the original COPE assesses fourteen different coping strategies, and is regularly used to examine clinically relevant outcomes relating to stressors in health psychology (Lowe et al., 2000) ( $\alpha = .76$  (24)). Coping is assessed via two items relating to a specific behavioural or cognitive strategy. Respondents rate the extent to which they have engaged in the defined activity on a four-point Likert scale, from zero (the participant did not use the activity at all) to four (the participant used this activity frequently). Subscales were

divided dichotomously to define *adaptive* (active coping, planning, positive reframing, acceptance, humour, religion, use of emotional/instrumental support) and *maladaptive* (self-distraction, denial, venting, disengagement, substance use and self-blame).

### 3. Results

Demographic information is displayed in Table 1. Demographics of respondents reflected the constituent population served by the hospitals and dominant gender within professions sampled. Ninety percent of the sample were female and 76% were themselves parents.

Fifty five percent of participants recorded subjective distress levels exceeding a score of 19 on the IES, indicating a 'high' level of clinical concern, with a further 24% exceeding a score of 8 indicating a 'moderate' level of clinical concern.

Overall scores on the IES revealed a mean score for avoidance of 10.20 (SD 7.61), and for intrusion 12.06 (SD 8.31) with the total stress score 22.26 (SD 14.12), significantly higher than other studies investigating the impact of work events (mean results of 8.38 (SD 7.63) for avoidance, 7.88 (SD 6.64) for intrusion and 16.07 (SD 11.36) for overall stress respectively) (Joseph, 2000). No significant correlation was revealed between amount of formal training and total IES score ( $r(184) = 0.7, p = 0.341$ ).

#### 3.1. Inter-correlations of variables

Only variables showing a significant relationship with the dependent variables were used for subsequent multiple regression. To determine which variables significantly predicted the level of subjective stress for participants, parametric bivariate analysis was undertaken to examine

correlations between subjective stress and the independent variables (the correlation matrix of the variables is shown in Table 2 with significant correlations in bold).

The research question was informed by Lazarus and Folkman's (2004) model such that PANAS, WES and coping scores were first entered into the model. With insufficient evidence to suggest which other variable/s might have priority; all subsequent variables were entered in a stepwise manner. The *t* statistics were then visually inspected for the model. Significant results were identified with the regression re-run until only significant variables remained. The model progress is detailed in Table 3.

The regression equation explained 42% of the variance in predicting distress in staff to a high level of significance. Although self-rated ability to cope with loss was significantly negatively correlated with staff stress it did not remain significant once entered into the regression, nor did perception of workplace climate. Standardised coefficients revealed that maladaptive coping was the strongest predictor within the model ( $t = 4.878, p = .000$ ), followed by total PANAS score ( $t = 3.224, p = .002$ ). Unsurprisingly, those reporting more negative emotions reported more stress. Further predictors included staff perception that an episode of care was lacking ( $t = 3.050, p = .003$ ), number of losses the staff member dealt with ( $t = 2.891, p = .004$ ) (less experience of caring for bereaved parents predicted higher distress), and the staff member's perception of deficient personal support ( $t = 2.287, p = .023$ ). Experience of dealing with loss might appear protective given the mean IES total score for staff who had cared for more than 50 families was 19.50 (SD 12.93). Whilst not as elevated as for those who had cared for fewer than 50 families (26.93 SD 19.50) the former figure remains high.

**Table 1**  
Participant demographics.

Doctors ( $n = 38$ ), nurses ( $n = 42$ ), midwives ( $n = 104$ )			
Variable	Frequency (%)	Variable	Frequency (%)
Gender		Time since involved with a patient loss	
Male	18 (10)	Last few days	60 (33)
Female	166 (90)	Last few weeks	58 (32)
Marital status		1–6 months	38 (21)
Single	23 (13)	Over 6 months	28 (14)
Cohabiting	21 (11)	Number of losses	
Married	124 (67)	>100	20 (11)
Divorced	16 (9)	50–100	69 (38)
Age		10–50	30 (16)
16–25	10 (5)	<10	65 (35)
26–35	38 (21)	Time in profession	
36–45	77 (42)	Less than 1 year	16 (9)
46–55	44 (24)	1–5 years	62 (34)
56–65	15 (7)	5–10 years	40 (22)
Parental status		Over 10 years	66 (35)
Parent	140 (76)		
Non-parent	44 (34)		
Ethnicity			
Asian	24 (13)		
Black	8 (4)		
Mixed race	31 (17)		
White	121 (66)		

**Table 2**  
Correlation matrix for predictor variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Total stress	–												
2 Parental status	-.132	–											
3 Psychological health	-.101	.058	–										
4 Home support	-.187	.119	.399**	–									
5 Formal training	.094	.189	.021	-.023	–								
6 Number of losses dealt with	-.273	.095	-.022	.029	.233**	–							
7 Personal experience of loss	-.079	.277**	.133	.109	.132	.090	–						
8 Self-rated ability to deal with loss	-.145	-.146*	.376**	.259**	-.153*	.306**	-.023	–					
9 Self-rated perception of best job done	-.183	.069	.180**	.161*	.012	.022	.035	.101	–				
10 Self-rated perception that other things should have been done	.376**	-.083	.026	-.028	.078	.022	.043	.078	-.247**	–			
11 Total Panas score	.485**	.014	-.048	-.131	.108	.241**	.115	-.157	.289**	.318**	–		
12 Working environment score	.242**	-.053	.291**	.173	-.022	-.127	.019	.126	-.180*	-.199*	-.102	–	
13 Negative coping style	.523**	-.095	.061	-.078	.097	.150*	.125	.013	-.085	.337**	.457**	-.145	–

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

#### 4. Discussion

Organisations delivering obstetric and gynaecological health care across the globe have an unequivocal responsibility to ensure that patients receive the best care. One of the most effective ways of ensuring best practice is to support the wellbeing of professionals working in this field, which, as evidenced from US-data, is directly associated with patient satisfaction and indirectly linked to staff recruitment and retention (Haas et al., 2000). Professional wellbeing and its obverse distress, has become a more pressing concern as organisations strive to recruit and retain excellent staff in fiscally challenging times. However, in contrast to professionals employed other clinical domains, notably in oncology and palliative care, there is little systematic acknowledgement or examination of professional distress integral to working obstetrics and gynaecology, and little provision to address it (Gold et al., 2008).

This study examined the extent of subjective distress reported by UK-based midwives, nurses and doctors experiencing neonatal death in the course of their work. Findings suggested that, like other professional groups who regularly encounter loss at work, those in obstetric and gynaecological settings disclosed significant distress, with almost eighty percent of our sample intimating symptoms indicating moderate or high levels of clinical concern on the IES. Symptoms of avoidance and intrusion in our sample both exceed IES norms (Horowitz et al., 1979), and this quantitative data supports earlier qualitative reports of intense distress (Walpole, 2002).

Professional coping styles which are deemed to be maladaptive (such as self-blame, disengagement, and denial) explained the most variance in subjective distress, echoing studies which have found that such strategies may exacerbate the negative effect of a stressor and increase psychological morbidity (McPherson et al., 2003). Such findings are also consistent with narratives in which professionals, notably nurses, have indicated that they manage their emotional reactions to loss by withdrawing from a grieving family, focusing on physical aspects of care and immersing themselves in administrative tasks (Mander, 2006) – arguably forms of disengagement. Parental experiences of loss would appear to corroborate this, with a systematic review suggesting professional detachment is a common phenomenon (Gold, 2007).

Negative staff perceptions of care correlated significantly with higher levels of subjective distress, again consistent with previous literature – those professionals who blamed themselves or believed they should have done more or *acted* differently appeared to be more adversely affected than those who attributed failings to organisational systems (McCormick et al., 1989; Joseph et al., 1991). Self-blame or attributions of guilt about neonatal death may well enable a professional to gain a sense of control over events but often with detriment to their self-esteem and perceived competence (Resick, 2001). As self-criticism is associated with traumatisation, and perceptions under stress of may not reflect actual care (Steil and Ehlers, 2000), it may be crucial for professionals working as a team, to take time to review the care they have provided in cases

**Table 3**  
Hierarchical multiple regression predicting stress amongst respondents (N = 184).

	Betas				
	Step 1	Step 2	Step 3	Step 4	Step 5
Parental status	–1.598	–1.612	–1.633	–1.527	–1.648
Psychological health	–.317	–	–	–	–
Personal support	–1.394	–1.422	–1.444	–1.973	–2.046
Number of losses dealt with	1.925**	1.914**	1.892**	2.236**	
Self rated ability to deal with loss	–.978	–1.038	–1.063	–	–
Self rated perception that the best job has been done for the family	–.296	–.312	–	–	–
Self rated perception that other things should have been done	1.992***	1.980***	2.011***	1.982**	1.932**
Total Panas score	.363**	.362**	.372***	.389***	.446***
Total Wes score	–.399	–.406	–.412	–.445	–.377
Negative coping style	.759***	.758***	.753***	.730***	.754***
Total R <sup>2</sup>	.410	.414	.417	.420	.420
Total F	11.498***	12.613***	13.942***	19.409***	25.455***

<sup>p</sup> < .05.

\*\* *p* < .01.

\*\*\* *p* < .001.

where infants die to ensure they construct events accurately, minimise any sense of isolation and avoid harsh judgements of their role. Given that a busy labour ward requires that professionals' efforts and attention are constantly reoriented providing little opportunity to process a loss, reviews should also consider the contribution of organisational context. Organisations, however resource constrained, have reported significant benefits when offering such opportunities for reflection (Hyrkas et al., 2006)

Professionals who reported exposure to fewest losses reported greater levels of distress. Whilst study design precluded the reasons for this, there are likely to be a number of factors. Senior staff, for laudable reasons, may not deploy inexperienced or junior colleagues during training to manage loss (Downey et al., 1995). Both junior nursing and medical staff have reported discomfort with communication and interactions around loss (Mander, 2006). Whilst appropriately protective this may mean that some develop neither the competence nor emotional resourcefulness to manage difficult patient interactions, may subsequently avoid providing care to the bereaved and find themselves unduly distressed when faced with loss they cannot escape. This may be reinforced by colleagues who are more comfortable with loss offering to care for bereaved families (Mok and Chui, 2004). Managers should consider how they facilitate supported learning adopting whole team approaches to addressing bereavement to include observational learning, as well attempting early identification of staff who appear less confident

Interestingly, provision of formal training was not significantly correlated with reported stress and seemed to provide no mitigation for its experience. Training may be necessary but not sufficient to support staff and help them respond adaptively to unpleasant and distressing emotions. Training may also erroneously imply that emotional responses to death are containable, providing it has been undertaken, and may invalidate intense and sustained

responses of staff to loss, potentially rendering them isolated and vulnerable (Speck, 2006).

Beyond the workplace, perceived inadequacy of social support was also revealed to significantly predict increased distress, as has been observed in other nursing settings (Morano, 2003). Social relationships have long been identified as a buffer to stress (Cohen and Wills, 1985) because of their potential to prevent challenging events being viewed as threatening, and the support offered to adaptive responses and solutions to stressors. Given that isolation and the need for greater explicit support has been identified repeatedly in qualitative accounts of nurses' distress in response to neonatal loss (McCreight, 2005), as well as difficulties in discussing experience of loss within the demanding activity of the labour ward, this study would suggest far greater consideration be given to the integration of support structures and processes in obstetric and gynaecological settings.

## 5. Study limitations

The study has a number of limitations. Sampling bias may have been introduced by use of participants subject to the 'healthy worker effect' whereby those suffering unmanageable distress leave a service with distress undetected or cause prevalence rate inflation because they more readily volunteer for research (Arrighy and Hertz-Picciotto, 1994). It is also acknowledged that the majority of respondents were midwives, whose professional culture may be distinct from nursing and medical colleagues. Retrospective design meant that respondents were asked to recall a significant loss which had occurred within the last eighteen months. Although such profound experiences tend to have sustained impact, frailties of memory may mean that staff may have been responding to cumulative experiences of loss rather than a sole critical event. Furthermore, the requirement that respondents should have experienced a loss within the preceding 18 months does not preclude that the loss focused upon

occurred close in time to completion of the measures. Indeed a third of the sample reported a loss having occurred within the preceding few days and respondents may have been acutely distressed, potentially inflating distress scores.

Longitudinal research from a key instance of loss could clarify causal relationships further. Future studies might wish to triangulate data using clinical interview with behavioural and physiological indices of stress to provide more detailed information. They may wish to consider other conceptual models to examine stress, not least those assessing trauma symptoms and positive psychological growth, given both the importance of attributions of the loss revealed in this study, and that staff choose to continue to work in these contexts despite stressors.

## 6. Conclusion

This study is the first systematic exploration of the psychological impact of losses experienced in the workplace on professionals in obstetrics and gynaecology settings, and underpinned by well-validated theory. Although cross-sectional with a self-selecting sample (albeit across five hospital sites) it emphasises the extent of adverse psychological impacts – a majority of professionals appear to report distress at clinically significant levels, and suggests some of the predictive factors related to their distress, resonating with experiences of nursing staff in other countries and work contexts.

Negative coping styles appear to make staff more vulnerable to the impact of loss, as does the perception that care offered was not as good as it could have been and that personal support is lacking. Those professionals who appear at most risk of experiencing distress are those who report least experience of managing patient loss. Given that formal training does not appear to be protective, greater consideration needs to be given both to acknowledging this source of stress early in careers in obstetrics and gynaecology, and to offer restorative strategies to enable staff to reduce the aversive impact of this work. Clinical supervision which encourages identification and processing of distress may confer benefits, as demonstrated in other specialities (Hyrkas *et al.*, 2006). By this means, normalising emotional reactions, encouraging self-compassion rather than blame in attributions of care, and considering how more mutually supportive strategies within teams can be offered, staff wellbeing may be enhanced and the quality of care optimised, in a group of vulnerable professionals.

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