Slade, P, Balling, K, Sheen, K, Goodfellow, L, Rymer, J, Spiby, H and Weeks, A

Work-related post-traumatic stress symptoms in obstetricians and gynaecologists: findings from INDIGO a mixed methods study with a cross-sectional survey and in-depth interviews

Original article

Running Author: Slade et al.

Running Title: Work-related trauma in obstetrics and gynaecology

Work-related post-traumatic stress symptoms in obstetricians and gynaecologists: findings from INDIGO a mixed methods study with a cross-sectional survey and in-depth interviews

P Slade[1,✉]
Email Pauline.slade@liverpool.ac.uk
K Balling[1]
K Sheen[2]
L Goodfellow[3]
J Rymer[4]
H Spiby[5]
A Weeks[3,6]

AQ1
AQ2

[1] Institute of Health and Life Sciences, University of Liverpool, Liverpool, UK
[2] Natural Sciences and Psychology, Liverpool John Moores University, Liverpool, UK
[3] Department of Women's and Children's Health, University of Liverpool, Liverpool, UK
[4] Division of Women's Health, Kings' College London Faculty of Life Sciences and Medicine, London, UK
[5] School of Health Sciences, University of Nottingham, Nottingham, UK
[6] Liverpool Women's Hospital Foundation Trust and Liverpool Health Partners, Liverpool, UK

Correspondence: P Slade, Institute of Health and Life Sciences, University of Liverpool, Liverpool L69 3GB, UK. Email: Pauline.slade@liverpool.ac.uk

Objectives To explore obstetricians' and gynaecologists' experiences of work-related traumatic events, to measure the prevalence and predictors of post-traumatic stress disorder (PTSD), any impacts on personal and professional lives, and any support needs.

Design Mixed methods: cross-sectional survey and in-depth interviews.

Sample and setting Fellows, members and trainees of the Royal College of Obstetricians and Gynaecologists (RCOG).

Methods A survey was sent to 6300 fellows, members and trainees of RCOG. 1095 people responded. Then 43 in-depth interviews with trauma-exposed participants were completed and analysed by template analysis.

Main outcome measures Exposure to traumatic work-related events and PTSD, personal and professional impacts, and whether there was any need for support. Interviews explored the impact of trauma, what helped or hindered psychological recovery, and any assistance wanted.

Results Two-thirds reported exposure to traumatic work-related events. Of these, 18% of both consultants and trainees reported clinically significant PTSD symptoms. Staff of black or minority ethnicity were at increased risk of PTSD. Clinically significant PTSD symptoms were associated with lower job satisfaction, emotional exhaustion and depersonalisation. Organisational impacts included sick leave, and 'seriously considering leaving the profession'. 91% wanted a system of care. The culture in obstetrics and gynaecology was identified as a barrier to trauma support. A strategy to manage the impact of work-place trauma is proposed.

Conclusions Exposure to work-related trauma is a feature of the experience of obstetricians and gynaecologists. Some will suffer PTSD with high personal, professional and organisational impacts. A system of care is needed.

Tweetable abstract 18% of obstetrics and gynaecology doctors experience post-traumatic stress disorder after traumatic events at work.

Tweetable abstract

18% of obstetrics and gynaecology doctors experience post-traumatic stress disorder after traumatic events at work.

Accepted: 17 December 2019

Keywords

Obstetrics and gynaecology; post-traumatic stress disorder; trauma; work place

Introduction

The impact of doctors' work on their mental health is now a major global concern.[1, 2, 3, 4] The mental health of the medical work force affects the wellbeing of doctors and their families, and the care they can provide for patients. High levels of burnout have been reported among obstetricians and gynaecologists.[5] Doctors can be exposed at work to events that they find traumatic, and obstetricians and gynaecologists may be particularly at risk. Although the majority of births proceed straightforwardly to positive outcomes, adverse events in which a previously healthy mother or her baby is suddenly at risk of serious injury or death are frequent.

Exposure to trauma through the provision of care can lead to work-related post-traumatic stress disorder (PTSD). This is defined as a psychological response to exposure to an event involving actual (or threatened) death or serious injury and characterised by four symptom groups: (i) intrusions (e.g. intrusive thoughts or images, flashbacks), (ii) avoidance of reminders, (iii) arousal (e.g. feeling 'on edge'), and (iv) negative alterations to beliefs or mood (e.g. anger, guilt).[6] These symptoms cause distress, impairment in the individual's social interactions, capacity to work or in other important areas of functioning. At least 5% of midwives suffer with work-related PTSD[7] and show increased levels of emotional exhaustion and an increased tendency to depersonalise recipients of care. Other consequences included increased sick leave and staff turnover, with implications for organisational costs.

Wallbank and Robertson[8] in a study of midwives, nurses and doctors found that some staff developed symptoms of PTSD after a stillbirth, miscarriage or neonatal death. However, it was impossible to disaggregate the responses of doctors. There are similarities in clinical events encountered by midwives and obstetricians and gynaecologists, but direct extrapolation is unwarranted because of the differences in training and roles. The only study of prevalence of PTSD specifically in obstetricians was performed in the Netherlands where obstetric staff have a very different working role and client group.[9] A small qualitative study of Irish consultants highlighted the impact of stillbirth and, although not framed within the context of trauma, the responses documented reflected elements of PTSD.[10] Given the potential personal and organisational implications, a systematic study of PTSD in the obstetric work force in England is needed.

Study objective

To explore obstetricians' and gynaecologists' experiences of work-related traumatic events, to measure the prevalence and predictors of PTSD any impacts on personal and professional lives, and any support needs.

Methods

The work was overseen throughout by a study management group with representation from a consultant, a trainee and a senior elected representative from the Royal College of Obstetricians and Gynaecologists. Patient and public involvement is complex in this context as this study concerns the mental health of obstetricians and gynaecologists rather than patients directly. Individuals from the profession were therefore involved at every level and stage from inception, design, implementation, analysis and interpretation, to paper preparation.

Stage 1. Survey of members and fellows

In collaboration with the Royal College of Obstetricians and Gynaecologists (RCOG), a national survey was conducted with fellows, members and trainees to provide information on the frequency and impact of experiencing traumatic work-related events, measure prevalence of PTSD and assess symptoms of burnout. The survey was sent by email to 6300 doctors on the RCOG database (retired members were excluded): 4750 consultants/associate specialists and 1550 trainees/staff-grade doctors. Responses were returned anonymously direct to the researchers and not accessible by RCOG.

The survey covered the following: demographic details, professional designation and number of traumatic perinatal event experiences. Standardised scales were used to measure:

1. *Post-traumatic stress disorder:* The Impact of Event Scale Revised.[11] This measures symptoms of intrusion, avoidance and arousal. A cut-off of ≥33 has been

demonstrated to indicate symptoms of PTSD commensurate with a clinical diagnosis whereas subclinical levels are defined as 22–32.[12]

2. *Burnout:* The Maslach Burnout Inventory,[13] which measures three domains of burnout including emotional exhaustion, depersonalisation and personal accomplishment.
3. *Perceived impairment:* Sheehan Disability Scale.[14] This assesses the degree to which a traumatic perinatal event is perceived to have disrupted work, social and family/home life.
4. *Empathy:* Interpersonal Reactivity Index[15] (Empathic Concern subscale), measuring the degree of empathic concern felt for other individuals.
5. *Job satisfaction*: Attitudes to Professional Role scale[16] measuring professional satisfaction, professional support, client interaction, professional development.
6. Two additional questions were included as to whether specific support for obstetricians and gynaecologists following a traumatic event was needed (Yes/No) and if 'Yes', what participants thought would be helpful to support them in dealing with workplace traumatic events.

Core outcome sets are not relevant in this context. Planned analyses were as follows: consultant/associate specialists and trainee/staff-grade groups were disaggregated to check for differences. Descriptive statistics were computed for the number of traumatic perinatal events experienced and scores on the measures for PTSD, burnout, perceived impairment and empathy. Correlation analyses, *t* tests and analyses of variance (independent measures) were conducted to inspect initial associations and differences between PTSD scores according to personal experience variables (age, professional experience, trauma history), burnout and perceived impairment. Appropriate regression analyses were completed after bivariate inspection. Open questions were analysed by simple content analysis.[17]

Stage 2. Qualitative interviews

At the end of the online survey, respondents indicated if they were willing to participate in a telephone interview about their trauma experience, to provide in-depth information on the nature of impacts of these experiences and any helpful or supportive strategies. We aimed to complete 40 in-depth interviews with two purposively sampled groups in which all reported trauma exposure. Of these, 20 participants would have high symptoms of PTSD (≥33 on the IES-R suggested diagnostic cut-off) and a high score (5) on the Sheehan Disability Scale for impact on work (PTSD Group). Twenty others would have no significant symptoms of PTSD in relation to trauma exposure (<22 on IES-R) and no significant perceived work impairment (i.e. scored <3 on the work dimension of the Sheehan Disability Scale (No PTSD Group).

All interviews were audio recorded and transcribed. Information from the two groups was analysed separately using Template Analysis.[18] This allows for the same initial outline template of the main areas of enquiry but with emergent themes and subthemes. The outline template included the following: what made events traumatic, what were the impacts, in managing impacts what helped, what hindered and what was wanted. The primary analysis was conducted by KB. This was checked throughout progress by members of the team (KS, LG and PS) to ensure appropriate identification and labelling of the constituent themes with repeated checking of the evidential basis. The PTSD and No PTSD groups were then compared for consistencies and differences in emergent themes and subthemes.

Results

Stage 1. Survey of members and fellows

Participants

A total of 1095 participants responded to the electronic survey. Sub-groups were formed to compare demographics and experiences according to respondents' current level of responsibility: trainee/staff grades including those currently out of the programme (*n* = 447, 40.6% of the sample), consultant/associate specialist roles (*n* = 624, 56.7%), or those no longer working in clinical obstetrics and gynaecology (*n* = 24, 2.2%). A flow chart showing the participation process within the survey is shown in the Supplementary material (Figure S1). Sample characteristics are shown in the Supplementary material (Table S1). Overall response rate was 18%.

Exposure to trauma and post-traumatic stress

Approximately two-thirds of trainees and consultants reported exposure to work-related events that they found personally traumatic, defined as a situation where they had 'experienced fear, helplessness, or horror in response to perceived threat of death or damage to someone in their care' (Table 1).

Table 1 Presence of self-reported work-related trauma and rates of PTSD symptoms in respondents reporting work-related traumatic experiences split by total Impact of Event Scale-Revised score (IES-R) and categorised by clinical and subclinical threshold

	Trainee/ staff grade with trauma exposure (*n* = 447)	Consultant/ associate specialist with trauma exposure (*n* = 624)	RCOG members working outside of clinical O&G with trauma exposure (*n* = 24)	Total (*n* = 1095)
Work-related trauma exposure*				
Yes	304 (68.0)	404 (64.7)	20 (83.3)	728 (66.5)
No	143 (32.0)	220 (35.3)	4 (16.7)	367 (33.5)
Total IES-R (0–88)**				
*n***	207	302	17	526
Mean (SD)	16.27 (15.69)	16.26 (15.00)	19.76 (20.74)	16.37 (15.46)
Median (range)	11 (76)	12 (87)	15 (77)	12 (87)
IES-R Categorisations by clinical and subclinical thresholds				
n (%) Subclinical only (≥22 ≤ 32)	26 (12.6)	43 (14.2)	1 (5.9)	70 (13.3)
n (%) Clinical only (≥33)	37 (17.9)	53 (17.5)	4 (23.5)	94 (17.9)
n (%) Subclinical	63 (30.4)	96 (31.8)	5 (29.4)	164 (31.2)

and Clinical combined (≥22)				

*Work-related trauma experience inferred via endorsement of Criterion A1 and A2 of DSM-IV-TR; event involving actual or perceived threat to life, where the respondent appraised this with fear, helplessness or horror.
**Total scores on the Impact of Event Scale-Revised (IES-R) for respondents reporting work-related trauma and IES-R scores.

Of those reporting such trauma exposure, 31% of trainees/staff grade and consultants were affected by PTSD symptoms: 18% each of trainees/staff grade and of consultants/associate specialists reported PTSD symptoms in relation to work trauma exposure at clinical levels, with a further 13 and 14%, respectively, at subclinical levels (Table 1).

Risk factors for clinical PTSD in staff overall were being of black or minority ethnicity (BME) and having lower levels of perceived support in the workplace. Consultants/associate specialists with clinical PTSD also reported a larger number of traumatic events (see Supplementary material, Table S2).

Clinically significant PTSD symptoms were associated with lower job satisfaction and higher impairment in relation to work home and social lives for both trainees and consultants (Table 2).

Table 2 Levels of job satisfaction (Professional Attitudes to Role Scale) and perceived impairment (Sheehan Disability Scale) for respondents reporting clinical levels of PTSD symptoms and all those with trauma experience scoring below clinical threshold, split by level of responsibility

	Trainees/staff grade			Consultants/associate specialists			
	Clinical PTSD (*n* = 37)	<Clinical PTSD (*n* = 166)	sig.	Clinical PTSD (*n* = 53)	<Clinical PTSD (*n* = 240)	sig.	((
Job satisfaction							
Professional satisfaction	−0.04 (0.44)	−0.04 (0.41)	0.967	−0.21 (0.56)	−0.06 (0.42)	0.032*	- (
Professional Support	−0.22 (0.66)	0.01 (0.62)	0.047*	−0.26 (0.72)	0.12 (0.55)	<0.001***	- (
Client Interaction	−0.20 (0.51)	−0.15 (0.43)	0.56	−0.25 (0.45)	−0.30 (0.40)	0.455	- (
Professional Development	−0.25 (0.64)	−0.18 (0.51)	0.52	−0.43 (0.69)	−0.11 (0.52)	0.002**	- (
	Trainees/staff grade			Consultants/associate specialists			

	Trainees/staff grade			Consultants/associate specialists			
	Clinical PTSD (*n* = 37)	<Clinical PTSD (*n* = 166)	sig.	Clinical PTSD (*n* = 53)	<Clinical PTSD (*n* = 240)	sig.	((
	Clinical PTSD (*n* = 37)	<clinical PTSD (*n* = 169)	sig.	Clinical PTSD (*n* = 53)	<clinical PTSD (*n* = 248)	sig.	((
Perceived impairment following traumatic experience							
Work	5.65 (2.44)	3.87 (2.61)	<0.001***	5.87 (2.63)	3.39 (2.51)	<0.001***	5 (
Family/home	7.16 (2.38)	3.91 (3.11)	<0.001***	6.87 (2.59)	4.01 (3.11)	<0.001***	6 (
Social	6.03 (2.60)	3.22 (2.79)	<0.001***	6.38 (3.0)	3.47 (3.05)	<0.001***	6 (

*$P < 0.05$, ** $P < 0.01$, ***$P < 0.001$.

Organisational impacts

There were organisational impacts of work-related trauma with 14% of trainees and 11% of consultants reporting having taken sick leave as a result of it. The sick leave lasted for 1 week or less for half of the trainees, whereas for 26.7% it lasted for over a month. For consultants, 20% had trauma-related sick leave of a week or less, 32% reported 1 week to 1 month and 47% over a month. As a result of trauma, 20% of trainees and 12% of consultants had short-term changes in duty allocation, and 60% of trainees and 30% of consultants seriously considered leaving the specialty.

Trainees with clinical level PTSD were more likely than their colleagues to have asked for a short-term change in clinical duties, to have seriously considered changing speciality, or taken reduced hours or a career break. However, they were no more likely to have taken related sick leave. Compared with non-distressed colleagues, consultants with clinical level PTSD were about twice as likely to have asked for an amended short-term or long-term allocation, taken stress-related sick leave, seriously considered changing specialty or taken reduced hours or a career break (see Supplementary material, Table S3).

For the whole sample (with or without trauma exposure), levels of burnout were high with 30% reporting high emotional exhaustion (rates were higher in trainees, 35 versus 26%) and 28% reported high or moderate depersonalisation of those in their care. Feelings of low personal accomplishment affected 23 and 19% of trainees and consultants, respectively. Clinical levels of PTSD were associated with greater emotional exhaustion and increased depersonalisation but not with lower personal accomplishment (Table 3).

Table 3 Levels of burnout across the total sample split by level of responsibility

	Level of responsibility		Overall

	Level of responsibility			
	Trainee/staff grade	Consultant/associate specialist	RCOG members working outside of clinical O&G	(*n* = 854) Overall
	(*n* = 332) Trainee/staff grade	(*n* = 503) Consultant/associate specialist	(*n* = 19) RCOG members working outside of clinical O&G	(*n* = 854)
	(*n* = 332)	(*n* = 503)	(*n* = 19)	
Emotional exhaustion				
n (%) High	116 (34.9)	133 (26.4)	9 (47.4)	258 (30.2)
n (%) Moderate	116 (34.9)	160 (31.8)	3 (15.8)	279 (32.7)
n (%) Low	100 (30.1)	210 (41.7)	7 (36.8)	317 (37.1)
Depersonalisation				
n (%) High	37 (11.1)	24 (4.8)	3 (15.8)	64 (7.5)
n (%) Moderate	88 (26.5)	85 (16.9)	3 (15.8)	176 (20.6)
n (%) Low	207 (62.3)	394 (78.3)	13 (68.4)	614 (72.0)
Personal accomplishment				
n (%) High	116 (34.9)	200 (39.8)	5 (26.3)	321 (37.6)
n (%) Moderate	139 (41.9)	206 (41.0)	7 (36.8)	352 (41.2)
n (%) Low	77 (23.2)	97 (19.3)	7 (36.8)	181 (21.2)

Total sample includes all available data for the Maslach Burnout Inventory irrespective of work-related trauma exposure (*n* = 854). AQ3

What was wanted?

A total of 91% (*N* = 764/839) of participants felt that specific support in relation to trauma responses should be provided. This was consistent across consultant and trainees and was strongly supported whether or not the staff members themselves had experienced an event as traumatic.

Three themes were identified in the open responses:

Response after the traumatic event: Participants identified the importance of having someone available to discuss the event relatively soon afterwards; this could include either senior colleagues or a dedicated team. Some also suggested that it might be helpful to have the option of time-off after a traumatic event.
Factors that would facilitate implementation of a support system: Participants felt that any training around trauma must be regular and mandatory. This could be achieved through embedding it into the training process with ring-fenced time. It was also noted that the most beneficial training would include relevant information about how to manage factors that compound the traumatic experience for obstetricians and gynaecologists, e.g. attending coroner's court.
Need to address the culture within obstetrics and gynaecology: A programme would need to be well supported by managers and valued by clinical management to gain traction. It was highlighted that the current culture around traumatic work-related events needs to be addressed to try and generate a culture of support rather than blame, and to destigmatise the need to access help after a work-related traumatic event.

Stage 2: Interviews

Participants

Forty-three interviews were conducted: 20 in the PTSD group and 23 in the No PTSD group.

In the PTSD group, 11 were consultant/associate specialist grade, 7 were trainee/staff grade and 2 were other RCOG members. In the No PTSD group, 17 were consultant/associate specialist grade, 5 were trainee/staff grade and 1 was an RCOG member not currently working in obstetrics and gynaecology. The average age of respondents was 45 years (SD = 9.34); participants in the No PTSD group were aged on average slightly older (mean 46.17, SD = 9.50) than those in the PTSD group (mean 42.45, SD = 9.0). Most participants were female (*n* = 38, 88%), of white or white British ethnicity (*n* = 32, 74%) and married or cohabiting (*n* = 35, 81.4%). Those in the PTSD reported more traumatic events and the most difficult event was more recent but these differences were not statistically significant.

Findings

There were relatively few thematic differences between the groups. The original, and final, template of themes is shown in Table 4. Appendix S1 (see Supplementary material) shows exemplar quotes for each theme and subtheme.

Table 4 Final template

1. Impact of the event	1.1 During event	1.1.1 Intense feelings 1.1.2 Having to contain emotions
	1.2 Immediately after event	1.2.1 Tearful, deflated/sad
	1.3 Long-term after event	1.3.1 Impact on daily life and relationships 1.3.2 Constantly thinking about the event 1.3.3 It has got better (PTSD group only)

		1.3.4 Puts things into perspective (no PTSD group only)
	1.4 Impact on practice	1.4.1 Anxiety around the job (generally and when doing a similar procedure) 1.4.2 Considered leaving O&G/Left O&G/Looking forward to retirement 1.4.3 Questioned whether good enough for O&G/Doubted ability 1.4.4 Feeling less positive and more detached from the job 1.4.5 Learned from the experience and matured as a professional 1.4.6 Made me support colleagues better and shaped the supportive doctor I would like to become 1.4.7 Trained others so that they benefit from the experience (no PTSD group only)
2. Support – What helped, what hindered and what would you have wanted	2.1 What helped	2.1.1 Working in an available and supportive team who share ideas and stop the doctor from feeling alone 2.1.2 Family and (non-colleague) friend support 2.1.3 Colleagues actively supporting the doctor to allow them time to process the event (no PTSD group only) 2.1.4 Offers of informal/formal support from seniors that never blamed the doctor and gave an opportunity to make sense of it and talk through the impact 2.1.5 Informal positive discussions with the team 2.1.6 External support services (GP's, Psychologists, Legal support) 2.1.7 Closure on the case
	2.2 What hindered	2.2.1 No opportunity to process the event and no checking whether the doctor is alright after the event

		2.2.2 Flippant support from the team or inappropriate support from those who are poor at supporting 2.2.3 Being criticised or talked about by others
	2.3 What would you have wanted	2.3.1 An open and honest discussion about the event with the seniors and the rest of the team involved 2.3.2 Someone checking I was alright and what I needed (including time off)
3. Issues to consider in obstetrics and gynaecology and important components of care packages	3.1 These events do happen in O&G but the culture is to 'carry on' – therefore a doctor's wellbeing is rarely considered 3.2 Colleagues are often critical of each other and appointing blame 3.3 Currently support for work-related traumatic events is ad hoc/limited 3.4 Care for doctors' wellbeing needs to be built in and part of a process (the offer of time-off) 3.5 Routinely offer support so that it reduces stigma 3.6 Support needs to be offered by those who are good at supporting 3.7 There will be barriers: Need to ring-fence time. Reduce stigma of asking for help. Accept that some doctors will not feel they need it. Need to properly fund it and it will need to be highly confidential	

Theme labels from the outline template are shown below in bold, emergent main themes (bold italics) and subthemes (all emergent) in italics. The first theme of *What made events* distressing is outside the main focus of the paper and will be presented elsewhere.
AQ4

The impacts of traumatic events were experienced both immediately and in the longer term. They affected all aspects of personal and professional lives leading to *high levels of anxiety around particular procedures or more generally in the workplac*e and in some cases *a distancing from engagement with patients*. There was *consideration of leaving* and *a loss of pleasure in the work*. There were positives in terms of *learning* and also of *supporting colleagues better*. Those in the No PTSD group had used their experiences *to train others* to enable them to benefit.

What helped in managing the impact of traumatic events was focused on *sharing of the experience with a supportive te*am and *support from seniors preventing a sense of isolation*.

In particular, the No PTSD group reported help from receiving *support and time to process the event*. For both PTSD and No PTSD groups, the role of *support from family/friends* and external input was noted.

What hindered was the converse of what helped, i.e. *the event or its impact being ignored* or *no opportunities to process the event, being given minimal or 'flippant support',* or *support from those poor at supporting,* or *being criticised or gossiped about in relation to the event.*

What was wanted was *an open and honest discussion with someone supportive* and *someone in the system checking on how they were*.

How support should be provided participants thought there needed to be *a change in culture* so that the expectation was not *just to 'carry on'*. They suggested that provision of *support should be routinely embedded in the system*, *the need for support after traumatic events should be normalized rather than stigmatized* and *routinely provided for all after trauma, with assured confidentiality and supported in time and funding.*

Aspects of the culture in O&G made staff feel unsupported in relation to trauma events was an emergent major theme with subthemes focusing on the system supporting *a 'carry on regardless' approach*, and *doctors' mental health not being considered* and there being culture of blame and criticism and *stigma in asking for help*.

Discussion

Main findings

Trainees and consultants in obstetrics and gynaecology are routinely exposed to events at work that they experience as traumatic. As a result, 18% report clinical levels of PTSD with a further 13% reporting subclinical symptoms These responses were linked to high levels of anxiety in the specific situations resonating with the original event or more generally, which in turn led to changes in professional practice to become more defensive and interventionist. Those with PTSD reported providing less sensitive care and having higher rates of stress-related sickness. Both trainee/staff grades and consultants/associate specialists reported that these traumatic experiences and their consequences are not routinely acknowledged within the speciality, that informal and formal systems of support are often lacking and that an unsupportive culture exists. The higher risk for PTSD in BME staff requires further consideration. It is clear that low perceptions of support are a key risk factor for PTSD. The Fair to Refer report[19] investigating high rates of referral of BME doctors to the General Medical Council identifies an in-group/out-group culture that may well mitigate against a supportive working environment for BME doctors. Suffering from PTSD may also be a previously unidentified factor underpinning less sensitive care and poorer relationships with colleagues, which may place BME doctors at greater risk of referral.

A final key finding is that whether or not they were personally distressed, respondents thought that changes in culture and systems of care were urgently needed.

Strengths and limitations

The major limitation is the 18% response rate. Interestingly, this rate of response is consistent across nearly all studies of work-related traumatisation across different professional groups.[7, 20, 21] Although the demographic pattern of participation in the current study is reasonably representative of the specialty, reasons for participation and non-participation are likely to bias findings in both directions. First, those who are unaffected may have no interest in the topic and may be less likely to participate, even

though the invitation specifically encouraged recipients to respond whether or not they felt it personally relevant. Second, avoidance of all associated experiences is a feature of PTSD because of fears of re-experiencing distress. Therefore, those who are more highly distressed are also likely to have avoided participation. This is evidenced by an examination of the timing of respondent drop-out in the survey: at the point of having to briefly describe the trauma, 25% of those with a trauma experience stopped completing the survey, compared with just 2.5% for those without.

It is also notable that interviewees were often highly emotional when talking about their experience and frequently commented to the clinical psychologist interviewer how this was the first time they had really done so and how they welcomed this despite their distress. This suggests that for most, the material had never been adequately processed and was continuing to impact on them emotionally. The response rate does mean that PTSD rates may be less than the disturbing 18% but it is equally possible that this may be an underestimate within the profession. Given the potential implications for mental health, known impacts on care and the ongoing crisis in trainee attrition to ignore this finding would seem reckless. Nevertheless, the low response rate means that absolute rates of PTSD in this study need to be considered with caution.

Interpretation

A system of care and efforts to generate cultural changes in the specialty are needed. These findings mirror those from midwifery staff,[7] and suggest an unmet need at the level of the maternity workforce. Maternity staff may be particularly vulnerable in that they work in an environment that is focused on new life and hope rather than illness, recovery or death. When an outcome is adverse for baby or mother it can be swift and unexpected, and generate complex emotions. Addressing staff needs to intervene to protect staff from harm in the workplace is the responsibility of an employer. This is also in keeping with the focus on staff wellbeing in the ~~implementation NHS plan for the~~ 5-year Forward View Implementation Plan[22] and Health Education England's current published priorities.[23] The current loss rate from this specialty during junior doctor training is up to 30%, which is both wasteful and unsustainable.[24] Many factors are implicated, but exposure to trauma is most certainly one that is now known and could be actively addressed.

Conclusions

High rates of PTSD symptoms occur in obstetric and gynaecological trainees and consultants, especially those who are black or from ethnic minorities. Doctors describe considerable negative effects on their life and work. Their clinical practice is also affected, resulting in high rates of clinical intervention as well as insensitive and defensive care. Both those affected and unaffected describe a culture of denial and blame within the workplace, and suggest a range of interventions that could assist in prevention and the care of those affected.

As a result, we propose a strategic plan that can address this issue through (i) education of staff about trauma and self-help methods, which can reduce the probability that trauma exposure leads to the development of PTSD to be provided for trainees, staff-grade doctors and consultants; (ii) the development of a system of routinely provided support after any serious incident but also available to staff after any incident regardless of outcome from a trained workplace trauma champion within each trust; (iii) rapid access to trauma-focused psychological intervention; and (iv) reviews of trust guidelines after serious incidents to ensure staff care is included. Although this is tailored for the specific needs of the profession, this mirrors some of the initiatives that have already shown positive potential in the midwifery workforce and opens up the potential for a whole maternity workforce approach to this unmet need.[25] Future research needs to systematically evaluate the implementation of such systems of support in aiming to prevent the experience of traumatic

events leading to PTSD and in turn burnout, stress-related sickness and/or attrition from training. Reviews of organisational change strategies,[26, 27] which have considered the development of trauma-informed workforces have aimed to change at client-care level rather than directed at staff themselves. There is a gap in evidence for what works, which now needs to be addressed.

Disclosure of interest

Dr Balling was paid as a research associate from the grant from Wellbeing of Women, the remaining authors have no disclosures. Completed disclosure of interest forms are available to view as online supporting information.

AQ5

Contributions to authorship

PS was responsible for design, led the bid for funding and oversaw all aspects of the project and paper. KB implemented the survey, completed all qualitative interviews and analyses, and contributed to the paper. KS contributed to the funded proposal and led the analysis of the quantitative data, contributed to qualitative analysis and all drafts of the paper. LG contributed to implementation, qualitative analysis, interpretation and drafts of the paper. HS was instrumental in design, obtaining the funding, implementation, interpretation and drafts of the paper. JR facilitated the running of the project via the Royal College of Obstetricians and Gynaecologists and contributed to interpretation and the paper. AW contributed to the design, obtaining the funding, interpretation and contributing to the paper.

Details of ethics approval

Ethical approval for the study was obtained from the University of Liverpool Ethics Committee (UoLREC1171) on 2 March 2017 and all participants provided informed consent.

Funding

The work was funded by Grant RG1912 from Wellbeing of Women. The grant was awarded after external peer review for scientific quality. Wellbeing of Women had no role in the conduct of the research or writing of the paper.

Funding Information

Wellbeing of Women	RG1912

Supplementary Material

Figure S1. Participant flow chart to display attrition throughout the survey.

Table S1. Demographic (gender, marital status) and employment details split by level of responsibility (total *n* = 1095)

Table S2. Logistic regression analyses predicting clinical post-traumatic stress disorder from personal, work-related trauma and professional support variables.

Table S3. Specific work-related impacts reported by individuals who had experienced a traumatic work-related only split by those reporting clinical/non-clinical levels of post-

traumatic stress disorder symptomatology (*n*, %).

Appendix S1. Final template with illustrative quotes.

References

1 Lancet The. Physician burnout: a global crisis. Lancet 2019;394:93.

2 Gerada C. Doctors' mental health and stigma—the tide is turning. BMJ 2019;16:4583.

3 Gerada C. Doctors and their defences. BMJ 2019;4:l364.

4 Gerada C. Dissecting resilience. BMJ. 2018;28:k4974.

5 Bourne T, Shah H, Falconieri N, Timmerman D, Lees C, Wright A, et al. Investigating burnout, wellbeing and defensive medical practice among obstetricians and gynaecologists in the United Kingdom. BJOG 2019;1:121–122.

6 American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-5®). American Psychiatric Pub; 2013.

7 Sheen K, Spiby H, Slade P. Exposure to traumatic perinatal experiences and posttraumatic stress symptoms in midwives: prevalence and association with burnout. Int J Nurs Stud 2015;52:578–87.

8 Wallbank S, Robertson N. Predictors of staff distress in response to professionally experienced miscarriage, stillbirth and neonatal loss: a questionnaire survey. Int J Nurs Stud 2013;50:1090–7.

9 Wahlberg Å, Andreen Sachs M, Johannesson K, Hallberg G, Jonsson M, Skoog Svanberg A, et al. Post-traumatic stress symptoms in Swedish obstetricians and midwives after severe obstetric events: a cross-sectional retrospective survey. BJOG 2017;124:1264–71.

10 Nuzum D, Meaney S, O'donoghueK. The impact of stillbirth on consultant obstetrician gynaecologists: a qualitative study. BJOG 2014;121:1020–8.

11 Marmer CR, Weiss DS. The Impact of Event Scale-revised. Assessing Psychological Trauma and PTSD. New York: Guilford; 1997. pp. 399–411.

12 Rash CJ, Coffey SF, Baschnagel JS, Drobes DJ, Saladin ME. Psychometric properties of the IES-R in traumatized substance dependent individuals with and without PTSD. Add Behavbehav 2008;33:1039–47.

13 Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Schwab RL. Maslach Burnout Inventory. Palo Alto, CA: Consulting Psychologists Press; 1986.

14 Sheehan DV. The Anxiety Disease. New York: Scribner's; 1983.

15 Davis MH. A multidimensional approach to individual differences in empathy. JSAS Catalog Selected Doc Psychol 1980;10:85–10.

16 Turnbull D, Reid M, McGinley MC, Shields NR. Changes in midwives' attitudes to their professional role following the implementation of the midwifery development unit. Midwifery 1995;11:110–9.

17 Krippendorff K. Content Analysis: An Introduction to Its Methodology. Los Angeles: SAGE Publications; 2018.

18 King N. Doing template analysis. In: Symon G, Cassell C editors. Qualitative Organizational Research: Core Methods and Current Challenges. London: SAGE Publications; 2012. pp 426–450.

19 Sheen K, Slade P, Spiby H. An integrative review of the impact of indirect trauma exposure in health professionals and potential issues of salience for midwives. J Adv Nurs 2014;70:729–43.

20 General Medical Council. Fair to Refer? London: General Medical Council; 2019.

21 Leinweber J, Creedy DK, Rowe H, Gamble J. Responses to birth trauma and prevalence of posttraumatic stress among Australian midwives. Women Birth 2017;30:40–5.

22 NHS England. Implementing the Five Year Forward View for Mental Health. London: NHS England; 2016.

23 Health Education England. Facing the Facts, Shaping the Future. London: Public Health England; 2017.

24 Royal College of Obstetricians and Gynaecologists. O&G Workforce Report 2018: Update on Workforce Recommendations and Activities. London: Royal College of Obstetricians and Gynaecologists; 2018.

25 Slade P, Sheen K, Collinge S, Butters J, Spiby H. A programme for the prevention of post-traumatic stress disorder in midwifery (POPPY): indications of effectiveness from a feasibility study. Eur J of Psychotraumatol 2018;9:1518069.

26 Carrieri D, Briscoe S, Jackson M, Mattick K, Papoutsi C, Pearson M, et al. 'Care Under Pressure': a realist review of interventions to tackle doctors' mental ill-health and its impacts on the clinical workforce and patient care. BMJ Open 2018;8:e021273.

27 Purtle J. Systematic review of evaluations of trauma-informed organizational interventions that include staff trainings. Trauma, Violence, Abuse

2018;5:1524838018791304.