

Foundation doctors, transitions and emotions

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Executive Summary

Introduction

1. Emotion regulation (ER) is the conscious or unconscious effort by an individual to increase, maintain or decrease their emotions. In medicine, poor ER may have a negative impact on a doctor's health and well-being (including burnout, depression, premature departure from the profession and suicide) and a negative effect on patient care.
2. ER strategies targeting cognitive change (e.g. *reappraisal*) are more effective (and 'healthy') than those after the emotional response (e.g. *expressive suppression* which is linked to increased physical and mental ill health).
3. Foundation doctors experience greater emotional labour through their clinical practice than more senior doctors, and are most at risk of burnout and depression.
4. Little is known about how foundation doctors regulate their emotions in challenging clinical situations.

Aims

5. Following our secondary analysis of ER talk by Foundation Year 1 (FY1) doctors within a multi-site UK wide exploration of graduates' preparedness for practice, this follow-on study explored how foundation doctors regulate their emotions by analysing narratives describing their preparedness for clinical situations and considered the following research questions:
 - RQ1: What ER strategies do foundation doctors narrate before, during and after challenging clinical situations?
 - RQ2: Are there any predominant patterns in ER strategy use?
 - RQ3: Is there any evidence that participants change the type or pattern of ER strategies over time?
 - RQ4: Is there any evidence of gender differences in the ER strategies narrated?
 - RQ5: To what extent is ER an individual or interpersonal phenomenon?

Methods

6. As our research questions were explorative, we adopted a qualitative study design using audio-diaries and interviews with 26 Foundation Year 2 doctors (18 female, 8 male) across 4 UK sites, to collect narratives describing clinical situations for which they felt prepared and unprepared.
7. Data coding involved five researchers and analysis was undertaken both deductively, using a modified theory of emotion regulation, and inductively.
8. The resulting data include both frequency data and example quotes from the audio-diaries and interviews to illustrate the key points. Each participant offered a number of narratives and in reporting, we clearly label each speaker.
9. Existing data from participants who recorded their audio diaries as Foundation Year 1 doctors during our previous study were included in part of our analysis (for RQ3 only).

Results

10. We identified 235 narratives specific to the 5 research questions of this study.
11. The majority of narratives contained negative emotion talk, with foundation doctors frequently narrating the use of one or more ER strategies, particularly in situations where they felt unprepared.
12. Most of the negative emotional words employed in the narratives were anxiety-type words (rather than sadness- or anger-type words).
13. Most narratives contained a single (rather than multiple) ER strategy.
14. Males narrated a greater proportion of events containing one ER strategy whereas only females narrated events containing three strategies.
15. In most cases, a strategy was employed *during* the event (rather than, or in addition to, *before* or *afterwards*).
16. Two prominent patterns in ER strategies are identified:
 - a. '*suppression during, expression after*'; and
 - b. '*expression during, regret after*'.
17. Both patterns suggest that many F2 participants view the outward expression of emotion in the workplace as negative and inward suppression as desirable.
18. Our findings also demonstrate that ER is seen not only as an individual process but also an interpersonal phenomenon distributed amongst the team.

Discussion

19. We relate our findings from this explorative research to other published work and identify areas for further study. Although we collected rich data over a sustained period of time and from multiple sites, our sampling strategy was not designed to be representative and so we do not claim generalizability. With that caveat, our research suggests the following:
 - a. Some foundation doctors may need greater support in order to deal with their negative emotions before, during and after challenging clinical situations.
 - b. Formal and informal educational opportunities may be required to help them to adopt the most appropriate ER strategy for the context, with a focus on their long term health and patient care.
 - c. It may be helpful for the workplace culture to be discussed as part of the trainer- foundation doctor relationship in the following ways:
 - i. For foundation doctors and trainers to have frank dialogue about the place for emotions within healthcare practice and when emotional expression might be 'professional', or not.
 - ii. For trainers to be proactive in discussing emotions and the ER strategies adopted by foundation doctors with them.
20. Further research is needed:
 - a. To explore relationships between foundation doctors' ER strategies and other demographic data;
 - b. To evaluate the impact of any educational interventions on the development of foundation doctors' ER strategies;

- c. To undertake longitudinal research could provide important insights into the development of foundation doctors' ER strategies over time and across different contexts;
- d. To explore the impact of suppression using similar measures to that used in the psychological literature to assess whether links in pathology are found in these populations;
- e. To explore the association of suppression, rapport and relationship formation with patients when used by foundation doctors.

Introduction

Emotion, whether concealed or expressed, is an inherent part of the clinical care process, including clinical decision-making and interpersonal relationships with patients and colleagues (Austenfeld et al., 2006; Satterfield & Hughes, 2007; McNaughton, 2013; Figley et al., 2013). Positive emotion can help clinicians to form strong doctor-patient relationships, an attribute that can benefit history taking and clinical diagnosis. Negative emotion, especially when not appropriately managed, can leave clinicians feeling anxious and uncertain in their own abilities (McNaughton, 2013).

The emotional labour associated with clinical practice seems to be greater for foundation doctors (Redinbaugh et al., 2003; Austenfeld et al., 2006; Monrouxe et al. 2014). Doctors are often required to display positive emotions and conceal negative ones (Rogers et al. 2014). As such, when they face situations that challenge their emotional strength, they may struggle to find opportunities to openly express their emotions (Austenfeld, 2006). Foundation doctors often work on the front-line of care and are expected to work long hours, accept professional responsibility, undertake a broad range of clinical rotations, change teams regularly, manage patient expectations and demands and continue with their academic studies and examinations (Rogers et al., 2014). Foundation doctors frequently find themselves in critical, time-pressured contexts, which often call for emergency care where the potential for adverse outcomes is high. Such situations can become highly emotional events for junior doctors (Monrouxe et al., 2014). Foundation doctors are at the bottom of the hierarchy in the clinical setting and are those most at risk of burnout and depression (Miller, 2009).

The principle aim of regulation at an individual level is to maximise emotions that are perceived as constructive, and to successfully minimise negative ones. When emotions are not regulated appropriately, this can affect doctors' and patients' well-being, including aspects such as burnout and premature departure from the profession (Wu et al., 2014). In addition, emotion regulation has important consequences for doctors' attentiveness to patient care and for patient satisfaction (Sablik et al., 2013; Ogundipe et al., 2014; Kafetsios et al., 2014) and to protect individuals in the face of stress (Troy & Mauss (2011). However, despite the emotional labour associated with medical training and clinical practice (Mann, 2005; Rogers et al., 2014), there is little known about the strategies doctors use to regulate emotions associated with clinical experiences, and even less regarding foundation doctors' emotional regulation.

Emotion regulation (ER)

“opiate prescribing and getting analgesia to an optimum level for patients... something that I find very difficult, still four months in, I'm still struggling...I'm always very concerned when I have to prescribe these if there's no one close to talk to...this is quite stressful for me. I spend a lot of time checking the BNF, checking the palliative care guidelines, and it's something that I still do not feel comfortable doing....Usually if I can get a chance, I will speak to the ward pharmacist, they're always very, very helpful, I would liaise with the palliative care team. Again, they're really, really good for discussing the different patients' analgesia requirements...” (Foundation Year 1 doctor,

Audio Diary, 4 months in post: Monrouxe et al., 2014, p.132, our emphasis)

Emotions comprise a set of physiological, experiential and behavioural responses that together make up the emotion itself (James, 1884). When we are angry we might shake with rage and shout, although not always. When we are sad we might cry, but not every time. We don't always 'see red' and slam the door, or pound our fists on the desk when frustration hits us. This is because we often regulate these emotional responses; toning them down and sometimes dealing with them so they disappear (or making it look like they have disappeared).

Emotion regulation (ER) has been defined as “all of the conscious and nonconscious¹ strategies we use to increase, maintain, or decrease one or more components of an emotional response” (Gross, 2001; p.215). Gross has proposed a process model of ER in which he posits that specific regulation strategies can be employed along the temporal process of the unfolding emotional response (Gross, 1998). Emotional response tendencies (behavioural, experiential and physiological reactions) are generated when an event is evaluated as being significant enough for an emotional response. Gross distinguishes between emotion regulation strategies that either up-play or down-play our response tendencies as being either antecedent-focused (**AF**: devised/executed prior to the generation of the emotion), and those that are response-focused (**RF**: devised/executed post generation of the emotion).

Consider the narrative above, taken from Monrouxe et al. (2014), in which a Foundation Year 1 doctor tells us how she still struggles with opiate prescribing, despite being four months into practice. She tells us how concerned she is about having to do this, how she does not feel comfortable and how it is quite stressful for her (thus evaluating the event as significant enough for an emotional response). Rather than (or before) going into an outright panic (an emotional response tendency), she *checks the BNF²* and *speaks with the ward pharmacist or the palliative care team* (all being AF strategies, down-grading emotional response). Thus, the additional knowledge she gains from consulting the most up-to-date guidelines re-frames how she approaches the situation and has a calming effect on her, reducing or diminishing her experiential reaction. She might also *ask for emotional support* from the pharmacist or her team (to down-grade her potential emotional reaction).

Of course, in anticipation of having to undertake the prescribing, she could engage in *thought suppression* (trying *not* to think a certain thought without forming a substitute for it) or *distraction* (turning her mind towards pleasant or neutral thoughts). She could have chosen to *avoid the situation* altogether, or to *engineer the situation* to be sure that the pharmacist or member of the palliative care team is present (all AF strategies, down-grading or even avoiding emotional response). On the other hand, she could have *ruminated* on the stress of it all prior to or during the event (this AF strategy has the opposite effect of up-

¹ Nonconscious effort is a psychodynamic term referring to the ego, which works hard but often without conscious awareness.

² BNF stands for British National Formulary: this provides up-to-date guidelines on prescribing, dispensing and administering medicines.

grading her emotional response), directing her attentions on her own inadequacies, and exasperating her emotional response. All of these are options for her in anticipation of the onset of any emotional response tendencies. As she feels her emotional response welling up, *she can go with it*: she may experience physiological changes, such as shaking, she might cry or become snappy with others. However, she also has the option of regulating these responses by inhibiting their expression – either through *bio-feedback* (consciously noticing any physiological changes and working to reduce them, for example, deep breathing) or via *expressive suppression* (both RF strategies). These are the most common ways in which emotions can be regulated downwards, or upwards.

Research investigating ER: an overview

There are a plethora of studies exploring ER strategies outside the medical context. Such studies have examined many aspects including gender, strategy choice and the effectiveness of different ER strategies as defined by Gross (1998). A meta-analysis by Nolen-Hoeksema (2012) found that females are more likely to use ER (particularly rumination and emotional support) than males, who may turn to alcohol in an attempt to bypass dealing with their emotions (Tamres et al., 2002).

An individual's use of a particular ER strategy can depend on the intensity of the situation (Gross & Thompson 2006). When faced with high intensity events (e.g. emergencies), distraction is common, whereas in low intensity situations individuals are more likely to engage with their emotions, changing their mindset in an attempt at ER (Sheppes et al., 2011). Further, in high stress situations individuals tend to employ a single strategy (one that can be utilised quickly) and persevere with it, rather than weighing up options (Cheng, 2003). The latter is more likely to occur in situations associated with lower stress. However, in very high intensity situations, ER may not be possible at all (Raio et al., 2013).

In terms of efficacy, research is complex but the main findings suggest that ER strategies targeting cognitive change (e.g. reappraisal) are more effective (and 'healthy') than those after the emotional response (e.g. expressive suppression):

- **Reappraisal**: more effective than suppression in downgrading physiological arousal and negative experience; efficiently reduces fear and disgust resulting in fewer emotion-related biases during rational decision making (Heilman, Crisan, Houser, Miclea & Miu, 2010; Richards, 2004; Gross & Levenson, 1997).
- **Distraction**: fast, effortless downgrading of emotional responses, but can be maladaptive in the long-term (McCaul & Malott, 1984).
- **Thought suppression**: an effortful process that can be successful, but can also backfire leading to a rebound affect making the suppressed thought more accessible when under stress or when the individual has limited cognitive resources needed for the effortful process of suppression (Wegner et al. 1987).
- **Rumination**: largely maladaptive with a strong risk factor for mood and anxiety disorders and depression (Nolen-Hoeksema, 1991).

- **Bio-feedback:** controlled breathing (Philippot, Chapelle, & Blairy, 2002) and progressive muscle relaxation (Pawlow & Jones, 2002) are effective.
- **Expressive suppression:** compared with reappraisal, negative emotional experience is not reduced; sympathetic nervous system arousal is increased; when used over lengthy periods is associated with increased coronary heart disease and cancer; linked to an increase in psychopathology; results in inferior memory of the emotion-eliciting situation; socially, people (i.e. work colleagues) interacting others who are suppressing emotions show increased physiological responses (e.g. increased blood pressure), reduced rapport and inhibited relationship formation (Aldao & Nolen-Hoeksema, 2010; Butler, Egloff, Wilhelm, Smith, & Gross, 2003; Gross & Levenson, 1997; Diamond, 1982; Temoshok, 1987).

However, in addition to the work cited above, other research undertaken with people of unequal status (including doctors and patients) has found conflicting evidence: here, reappraisal by the leader (or doctor) is negatively associated with the followers' work satisfaction (or patient satisfaction) and suppression in leaders (or doctors) is positively associated with followers' emotion (or patient satisfaction) (Kafetsios et al., 2012, 2014). These findings have been explained with regard to followers' and patients' expectations of their leaders and doctors within these specific organizational and cultural contexts (Kafetsios et al., 2012, 2014).

ER in healthcare professionals: an overview

Whilst qualitative and quantitative research has been conducted into healthcare professionals' (HCPs') ER strategies (Vegni et al., 2001; Redinbaugh et al., 2003; Martínez-Iñigo et al., 2007; Kessler et al., 2012), evidence on how doctors regulate their emotions is limited. The majority of the available evidence is poorly indexed; most studies focus on one or two strategies explored without the use of a theoretical model. Of the literature relating to doctors' ER strategies, patient death, clinical error and difficult communications appear to be prominent contexts.

In the context of patient death, Kessler et al. (2012) found that healthcare assistants (HCAs) narrated the use of strategies that changed how they thought about the situation and shifting their attentions away from the event, without exploring other strategies. Doctors have been shown to use emotional support, reappraisal and distraction (focusing on non-emotional aspects of a situation) to deal with the emotional aspects of patient death (Redinbaugh et al., 2003). A negative emotional response following clinical error can put doctors at risk of becoming the 'second victim' (Millwood, 2014; Wu, 2000). This phrase refers to the circumstance where individuals experience many of the same emotions and feelings as the 'first victims', the patient and family members (Scott et al., 2009). The rationalisation of emotions has been employed as a distancing strategy by doctors during clinical interactions, with rumination, verbalisation and avoidance all being used in clinicians' descriptions of clinical errors (Laurent et al., 2014). Vegni et al. (2001) highlighted the challenges GPs face in regulating their own emotions when breaking bad news: commonly reported strategies include the avoidance of dealing with their own emotions and being wary of becoming too involved in the emotions of patients in order to remain

professional. Finally, gossip as a regulatory strategy is used to express concern and care in nursing (Waddington & Fletcher, 2005).

In terms of efficacy, GPs' use of suppression has been shown to result in higher levels of emotional exhaustion (Martínez-Iñigo et al., 2007). However, failure to regulate emotion can lead to unprofessional behaviour, such as friction with patients and colleagues, as well as personal feelings of anxiety, inadequacy and decreased empathy (Shanafelt et al., 2005; Halpern, 2007; West et al., 2009; McNaughton, 2013). The ER used by doctors through reappraisal and suppression was found to be positively associated with patient satisfaction (Kafetsios et al., 2014). In terms of other healthcare professions, the suppression of emotions through being stern and not showing self-compassion was found to be beneficial for the psychological well-being of paramedics (Mitmansgruber et al., 2008).

Relatively little is known about emotion regulation in foundation doctors. Our secondary analysis of audio diary and interview data with Foundation Year 1 doctors in the UK identified a range of ER strategies within their narratives of preparedness events (Lundin et al. in preparation), including the novel use of deploying clinical skills as a way of managing negative emotions during high-stress situations. As a result Lundin et al. (in preparation) developed Gross' model of ER for use within a healthcare context. However, with the focus of the study being on preparedness for practice (rather than ER), of the 406 narratives that were analysed, 39% contained negative emotion with no regulation with only 21% narrating emotion and regulation.

Aims and research questions

This study therefore brings an important addition to the dearth of literature with regard to foundation doctors' emotion regulation with the aim of purposively exploring how foundation doctors manage their emotions during difficult clinical situations. In doing so we specifically examine the following research questions:

- RQ1: What ER strategies do foundation doctors narrate before, during and after challenging clinical situations?
- RQ2: Are there any predominant patterns in ER strategy use?
- RQ3: Is there any evidence that participants change the types or patterns of ER strategies over time?
- RQ4: Is there any evidence of gender differences in the ER strategies narrated?
- RQ5: To what extent is emotion regulation an individual or interpersonal phenomenon?

Methods

The research questions we address are primarily explorative in nature and to accommodate this we adopted a qualitative study design using audio-diary (Monrouxe 2009a;b) and interview methods to collect narratives of preparedness and unpreparedness from a total of 26 Foundation Year 2 (F2) doctors.

Participants

Following completion of ethical approval at 4 UK sites (Cardiff, Exeter, Dundee & Belfast) in November 2014, fifteen participants from our original study examining preparedness for practice in Foundation Year 1 (F1) doctors (Monrouxe et al., 2014) agreed to continue with their audio-diaries. These participants comprise: 9 females, 6 males; from all four original study sites; 10 of whom also participated in initial and exit interviews for the present study. A further 11 F2s were recruited in Cardiff (9 females, 2 males) to participate in additional narrative interviews bringing our total number of participants in this study to n=26 (18 females, 8 males).

Narrative interviewing and audio diary methods

Both audio-diaries and interviews employed narrative methods (Riessman, 2008). The narrative method asks participants to talk about specific events they have experienced, rather than focusing on generalised beliefs and attitudes. Narratives (or stories of experience) are important sense-making activities: a narrative of personal experience enters into the biography of the speaker and is a way in which the narrator makes meaning of what happened, and their own and others' identities (Labov, 1997). Thus, narratives enable us to examine participants' reported attitudes and behaviours tied to specific events.

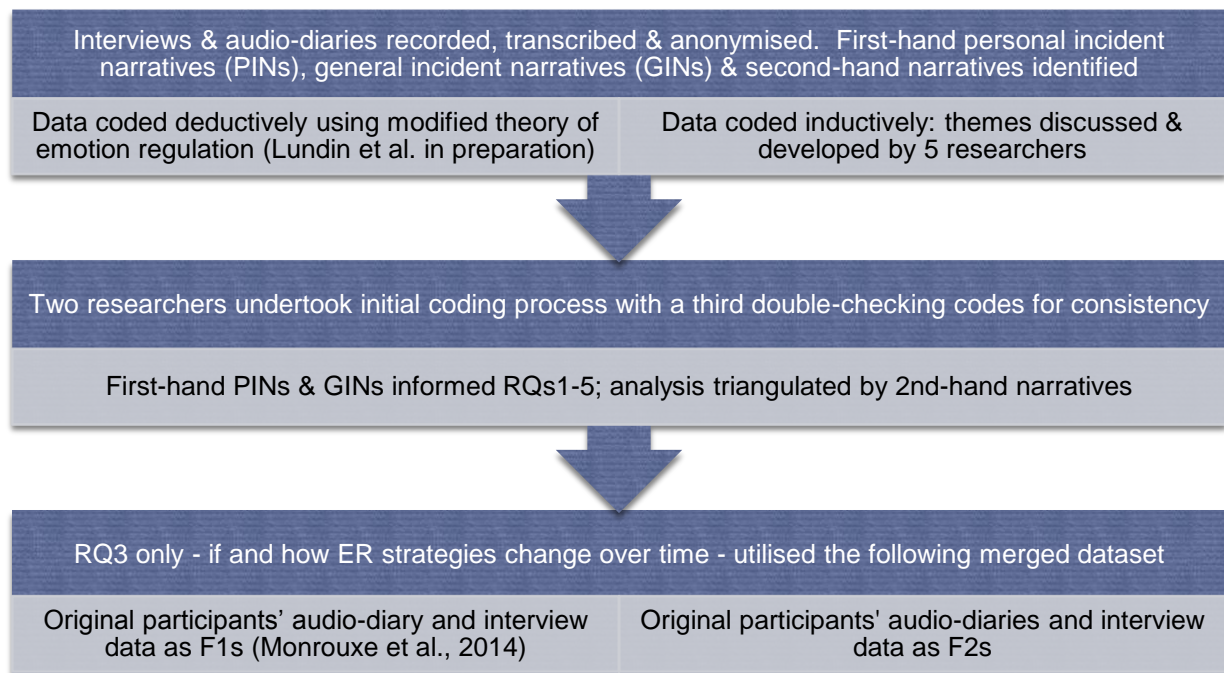
For the audio-diaries we asked participants to tell us about two events each week: one for which they felt prepared and the other for which they felt unprepared. We informed participants that we were interested in how they felt during these events. When interviewing participants, we asked them a variety of questions around how they dealt with their emotions at work, how they felt others dealt with their own emotions and whether they thought their emotions affected other people at work. In doing so, we asked them to tell us about a specific event or events in order to illustrate these aspects. It is worth noting that while we sensitised our participants to issues like their feelings and emotions in this follow-up study, we did not ask them to attune to such issues in our data collection for our original study (Monrouxe et al., 2014).

Analytical processes

We used a range of analytical approaches to the data depending upon the research question being addressed. For an overview, see Figure 1 below.

Our unit of analysis was primarily the narrative. We identified first-hand Personal Incident Narratives (PINs), first-hand General Incident Narratives (GINs) and second-hand narratives (Box 1). Each participant offered a number of narratives and in reporting, we clearly label each speaker. Although our data were qualitative, we also used frequencies to facilitate the recognition of patterns within the data, for example, when looking at possible gender differences.

FIGURE 1: ANALYTICAL PROCESSES



Results

A total of 99 audio diaries comprising 6:40:51 (hr:mm:sec) of audio data (mean diary length of 4min 5sec) was collected from 15 audio diary participants over a period of 16 weeks. Ten interviews were conducted at the beginning of this period, with a further 10 at the end, resulting in just under 11 hours of audio data. Finally, a further 3:24:07 of interview data was collected from the additional 11 participants recruited providing just under 21 hours of audio data. From this data we identified a total 397 narratives, comprising: 197 first-hand personal incident narratives (PINs), along with 167 first-hand general incident narratives (GINs) and 33 second-hand narratives (See Box 1 GIN/PIN for definitions). Of the GINs and second-hand narratives (n=200), 162 were in response to more general questions, for example around preparedness as a journey and the issue of competence versus capability. As these narratives did not specifically describe events relating to the focus of our research questions, we did not use them in our analysis. Table 1 outlines our classification of the remaining 235 narratives in terms of the levels of preparedness narrated and whether negative emotion and/or ER was narrated.

BOX 1: DEFINITION OF NARRATIVE TYPES AND CLASSIFICATIONS

Personal Incident Narratives (PIN): One (or more) participants recounting a specific event that they have personally experienced;

Generalised Incident Narratives (GIN): One (or more) participants recounting an event that frequently occurs, rather than going on to tell of a specific situation, they then provide a generalized story about what typically occurs – e.g. “it happens all the time...”;

Prepared PIN/GIN: Participant clearly specifies their overall feeling of preparedness (although there might be minor elements of feeling unprepared);

Unprepared PIN/GIN: Participant clearly specifies their overall feeling of unpreparedness (again, there might be minor elements of feeling prepared);

Unspecified PIN/GIN: Participant makes no clear attempt to classify the event narrated as being one

of prepared or unprepared for practice.

TABLE 1: TOTAL NUMBER (%) OF PINS/GINS CLASSIFIED BY NEGATIVE EMOTION, EMOTION REGULATION AND PREPAREDNESS (TOTAL N=235)

Narratives	Totals	Prepared PIN	Unprepared PIN	Unspecified PIN	Prepared GIN	Unprepared GIN	Unspecified GIN
No narrated negative emotion	53 (22.5%)	27 (38.6%)	12 (10.1%)	0 (0%)	5 (45.5%)	4 (21.1%)	4 (36.4%)
Negative emotion with ER	135 (57.5%)	30 (42.8%)	84 (70.6%)	1 (25%)	6 (54.5%)	10 (52.6%)	4 (36.4%)
Negative emotion, no ER	47 (20%)	13 (18.6%)	23 (19.3%)	3 (75%)	0 (0%)	5 (26.3%)	3 (27.3%)
TOTALS	n=235	n=70	n=119	n=4	n=11	n=19	n=11

The most commonly used negative emotional words across the 182 narratives classified as containing negative emotion (i.e. 135 negative emotion with ER; plus 47 negative emotion without ER) were: worried/worry(ing) (n=88), upset (n=79), frustrating/frustrations/frustrated (n=53), anxious/anxiety/anxieties (n=52), scared/scarily/scariest (n=46), tears/teary/cry(ing) (n=42)³, panicking/panic(ky) (n=37), horrible/horrendous/horrific(ally) (n=34), stressful/stress(ed) (n=33), terrified/terrifying (n=24), overwhelmed (n=21) and sad (n=20). Most of these words are associated with anxiety (rather than sadness, anger, etc).

Of the 135 narratives that contained negative emotion with regulation, 73 (54.1%) contained a single, rather than

multiple, regulation strategy, 50 (37%) contained two strategies and 12 (8.9%) contained three. Overall, our participants narrated 209 ER strategies, occurring prior to (n=42; 20.1%), during (n=107; 51.2%) and after (n=60; 28.7%) the event.

What follows are our findings in relation to each of the 5 research questions outlined in the introduction above. In the excerpts presented below, we have underlined emotional words and where emotional tone was narrated, with the ER strategy used in bold.

³ Including n=15 occurrences of the phrase “burst into tears” uttered by both male and female participants when describing their own feelings.

RQ1: What ER strategies do foundation doctors narrate before, during and after challenging clinical situations?

ER strategies narrated *prior to preparedness events*

One of the most common ways participants regulate their emotions prior to events was by modifying the situation in some way (i.e., 14 of the 15 participants who discussed ER strategies prior to events mentioned this). This was frequently achieved by calling upon, and involving, seniors or nursing staff, especially when F2s reached the limits of their own knowledge and skills (Box 2, excerpt 1). For example, realising her lack of experience as a new team member in a cardiac arrest situation, one participant consulted the team to carve out a designated role for herself. Involving seniors and finding a designated role not only enabled participants to down-regulate their negative emotions arising from their feelings of incompetence, but also facilitated patient care and safety. Very occasionally participants talked about choosing one situation over another based on their anticipation of a negative emotional outcome. For example, requesting on-call duties to avoid being in the operating theatre. By manipulating the situation participants avoided situations that they felt might result in them experiencing personal emotional distress.

At other times, participants down-regulated emotions prior to the event by reframing their thinking. Thus, many narrated using information prior to an event to calm themselves down. Sometimes this came from their existing knowledge base, while at other times they sought out new information (e.g. via mobile devices: see Box 2, excerpt 2 where both existing and new information was used to reassure the F2 in an 'overwhelming' situation). Participants' rationales for accessing information prior to events appear pragmatic and multifaceted: to enhance preparedness and safe clinical practice, to reassure themselves and others about their decision making, and to regulate their emotional response or anxiety to the given situation. As such, the management of emotions via information use is intertwined with clinical care.

Some participants narrated seeking and gaining support and encouragement prior to an event. Such reassurance and understanding mitigated feelings of anxiety and indecision, and increased confidence and sense of capability. Reappraisal of events was another strategy participants used in order to down-regulate anticipated negative emotional reactions: changing how they thought about an event in more positive ways therefore mitigated its emotional impact. For example, one participant narrated reframing what she described as a failure into a success by translating her negativity about 'timewasting patients' in A&E into positive thoughts about successfully reassuring the patients she saw.

Participants also narrated how they deployed their attention towards specific aspects of a situation. When this aspect was a negative one, this had the effect of regulating their emotions upwards (so, intensifying negative emotions, as they felt themselves ruminating around negative issues). For example, following a difficult shift, one participant focused upon feelings of apprehension, stress and limitations of their competency in the face of a daunting impending event. Rumination was also evident in the narratives as a stream of questions

used to pre-empt or anticipate the event, or as a series of generalised statements around their negative feelings (Box 2, excerpt 3). Occasionally, however, participants described how they attuned their attention to non-emotional aspects of the situation as a way to down-regulate their emotions by regaining control and interrupting physiological (e.g. sweating) and anxiety responses. By deploying their attentions in this way they were able to calm down and engage in a controlled performance.

BOX 2: NARRATIVE EXCERPTS WITH EMOTION REGULATION STRATEGIES UTILISED BEFORE EVENTS

Excerpt 1

“So the other night when there was a resus call... I knew that this was more than I’d be able to just cope with. So it’s just knowing your limitations. I think if you step outside of your limitations, step outside of your boundaries on what you’re capable of, you’re going to find yourself in a territory where you’re sinking quickly and that’s when your emotions are going to become overriding. Knowing your limits means that you’re able to control everything around you and **if you get a senior there** those emotions aren’t going to...” [M_INT_22]*

Excerpt 2

“I’ve not done a respiratory job, so both of those things were going wrong. **I know how to deal with them** and dealt with them the best as I could **using the very simple approach that I knew that was familiar to me**, and I also found it quite reassuring to use the Apps that I had on my phone... the BNF, up-to-date Oxford handbooks and all those things, and actually **drew a lot from all the resources that I have before** admitting defeat and **talking to the medical Registrar**... Again it’s what is right for the patient... So I was prepared, yeah, I think I was... the medical Registrar agreed in the end and I felt quite reassured that I’d done the right thing handing him over... hopefully he’ll be okay, but it was a little bit overwhelming at first” [M_AD_29]

Excerpt 3

“prior to on-call, even now, and I don’t know if this will ever go **but I always feel nervous**. **I always feel nervous because I don’t like the unknown**. Like even now on plastics you don’t know who’s going to refer. I suppose especially with outside referrals in general hospitals you don’t know who’s going to refer. How busy it’s going to be. What’s coming through the door? So **I generally always feel anxious before** I start an on-call shift and then even, sort of, at the start of the on-call shift you sort of have that anxiety” [M_INT_30]

* For the excerpts, we give each an identifier, firstly indicating participant gender [F] or [M], then the context of the narrative, either audio diary [AD] or interview [INT], finally, the participants’ unique number [1 to 45]⁴

⁴ Participants from the first study (Monrouxe et al., 2014) retained their original numeric identifier, additional participant numbers following on; hence identifier numbers are greater than actual participants in this follow-on study.

ER strategies narrated *during* preparedness events

In this section we discuss emotions and ER strategies deployed during events in order of frequency within our data. Over half of the strategies our participants narrated occurred during events. There were many kinds of situations that brought forth differing negative emotions in our participants including interactions with patients and colleagues (see Box 3, excerpt 1 for the numerous triggers one participant narrated around feeling frustrated). Across our data, situations that brought forth negative emotions include unpreparedness during emergency situations; in surgical settings when things did not go according to plan; when participants felt other colleagues had done something wrong, inappropriate or were uncooperative; when seniors shouted at them for mistakes (particularly when participants felt this was unjustified); when patients became overly demanding or abusive towards them; when a patient's story was particularly harrowing; when they knew the patient personally and/or when a patient in their care died. Only one participant talked of sharing her emotions with the patient: something they felt was beneficial to both foundation doctor and patient. Some talked about how they recognized their emotions welling up, or how they were sometimes aware of the ever-present negative emotional aspects of particular situations (Box 3, excerpt 2). Participants also talked about the kinds of physiological responses they had when emotions were high: these include sweating, fast heartbeat and feeling faint (Box 3, excerpt 3).

BOX 3: NARRATIVE EXCERPTS DESCRIBING NEGATIVE EMOTIONAL EVENTS AND PHYSIOLOGICAL RESPONSES *DURING* EVENTS

Excerpt 1

"Frustration probably would be the largest one. Frustration with patients. Frustration with colleagues. Frustration with your nursing staff, for example. That's **the emotion that I suppress the most** ... We all get frustrated severely in our job, purely because the kind of time constraints you work under..." [M_INT_35]

Excerpt 2

"...as I was doing my review I was talking to her and out of the corner of my eye I saw Christmas wrapping paper, and this was in October, and we knew she was not going to see Christmas, and she had a young son and he was there too... I was just, kind of, **focusing on the clinical stuff**, but that was all going on sort of constantly" [F_INT_11]

Excerpt 3

"...the patient became really quite agitated and he lashed out and swore... this had an instant, kind of, knock on effect to me. I haven't been suturing for very long. So I felt immediately that if I continued I might put myself or the patient at risk of a potential needle stick injury... I was worried that if I was to proceed that I might cause more harm than good. I also realised **I was beginning to feel a little bit faint** and was feeling as though I was getting quite anxious and nervous about the situation..." [F_AD_08]

In terms of emotion regulation, there were a few participants who mentioned worrying and ruminating over problems during events for which they felt unprepared: thereby up-regulating and intensifying their negative reactions during events in a similar way to those described occurring before the event. However, strategies for down-regulating negative emotions during events were

by far the most common form narrated. Of these strategies, the suppression of negative emotions (holding emotions in and not letting them show), was narrated most often (Box 3, excerpt 1). For our participants, this was considered to be the '*right*' thing to do in order to remain professional for the sake of the patient (Box 4, excerpt 1). So participants talked about situations in which they "bottle up" their feelings. They achieved this through a number of means, including breathing deeply (a *bio-feedback* strategy) and trying to down-regulate their negative emotions in the moment, putting on a smile or calmly leaving the scene and only returning once they had their negative emotions in check (Box 4, excerpt 2).

For some, suppression was not an easy thing to do as it required much conscious effort. Suppression did not always lead to the down-regulation of negative emotion. A few participants talked about how the perceived *necessity* to suppress their negative emotions had the effect of up-regulating and intensifying them, resulting in them feeling more annoyed or frustrated about the situation. Furthermore, participants narrated other down-sides to suppression. For example, when things became really difficult, rather than sharing their emotions with colleagues or friends, a few talked about how they found themselves hiding their emotions more and more, resulting in them becoming more and more withdrawn within the work setting. This was especially so when participants felt they were struggling clinically, when the team was not particularly supportive or when they felt unwelcome as part of the team (Box 4, excerpt 3). Finally, although there was recognition that the long-term suppression of emotions was not necessarily good for them, this aspect was not elaborated on (Box 4, excerpt 4).

BOX 4: NARRATIVE EXCERPTS WITH SUPPRESSION OF NEGATIVE EMOTION UTILISED DURING EVENTS

Excerpt 1

"**Suppressing an emotion... I was upset** and I did have **to hold that back**...there was probably a tear in my eye...it was upsetting and I felt like I was saying goodbye to him then ... if I was to burst into tears it doesn't look very professional. That's one thing to keep up" [M_INT_29]

Excerpt 2

"... was going to go on such a horrific rant and be so horrifically verbally abusive [*towards a patient*], **I did manage to remain quite calm and collected**, I didn't really say anything so and I **left the room quietly**... I just sort of **pulled myself together**. **I try not to show... my fear always comes out** though... what I try to do is sort of **get myself together**. **Take a couple of deep breaths, count to ten** and then go in and try to get through it, try to **prep myself mentally** I guess... sort of **keep calm** and carry on, I guess" [F_INT_09]

Excerpt 3

"I honestly do find that I've actually **become a bit more withdrawn** in A&E... there are certain members of the team now who I know if I ask a question... I'll get a scornful look... I would say it's been quite negative. **I've become a lot more withdrawn**... I don't feel like a valued member of the team at the moment. I feel like I'm in a lot of people's way and, you know, it doesn't make you feel the best" [F_INT_13]

Excerpt 4

"So I think **it's quite difficult to suppress my emotions** and not rant and be like, '*okay*'

why didn't you do this' and you, sort of, just be seen to be professional and sometimes like be, 'okay, sure' and say it in a polite way. Maybe sometimes you want to shout down the phone and get irate...doctors have to suppress their emotions quite a lot... you do have to suppress your emotions, especially as a junior... but I think long-term it's not very good to, sort of, suppress your emotions" [M_INT_30]

Although over half of the narratives that included an emotion regulation strategy during events talked about suppression, a large number of narratives were also about situations in which emotions were expressed (thus ER either failed or was not deployed). Participants told us how they were sometimes verbally snappy, abrupt or aggressive with others during stressful moments, sometimes even raising their voices or shouting (Box 5, excerpt 1). However, the most common form of expression of emotions was crying. At times like this, removing themselves physically from the situation was a common strategy (Box 5, excerpt 2).

BOX 5: NARRATIVE EXCERPTS WITH EXPRESSION OF EMOTION DURING EVENTS

Excerpt 1

"I was... annoyed and very angry actually... I was really angry of... she was kind of shouting at me and **I raised my voice as well** and there was one of the other doctors in the room as well" [F_AD_23]

Excerpt 2

"highest ranking of all of the consultants... throws his weight around a little bit... I phoned him and during it all I was so tired. I hadn't had my break. I was hungry. I was just... I felt distraught... and I just suddenly felt absolutely overwhelmed with the situation... just felt so frustrated by it all... I just felt like I'd advocated for hours for this poor man... but there was just a bit of resistance from this neuro surgical Reg... he'd been rude to me and it just really impacted on me... and I kind of started to cry and my senior said '*what's wrong?*' and I said '*I'm just a bit... I'm tired and emotional*' and he's like '*well just compose yourself*' and that's exactly what I did. **I took myself away for five minutes...**" [F_INT_04]

The final category of ER during events in which foundation doctors felt unprepared comprised ways in which to re-frame their thinking around the situation (also known as *cognitive change* strategies). Thus, as they felt the emotions coming on and were unsure of how to act, many participants told us how they managed the situation by reminding themselves of clinical skills they already knew, in order to down-regulate their impending negative emotion: this shift in cognitions also enabled them to tackle the task in hand (Box 6, excerpt 1). At other times, participants talked about how, on feeling their anxieties rise up, they reappraised the situation from being one in which they felt unprepared for, to one in which they felt prepared. For example, one participant talked about feeling unprepared but as he reflected on this during the event, he realized he was prepared 'subconsciously' (i.e. he didn't realise how prepared he was until he thought about it logically).

The use of information during events in order to down-regulate emotions was also discussed, as it was prior to situations. This included participants

seeking out new information (e.g. from the BNF or internet) to reassure themselves, as well as using existing knowledge (Box 6, excerpt 2). A further common way participants regulated their emotions during the event, as with strategies prior to the event, was by actively seeking advice and reassurance from their seniors (Box 6, excerpt 2).

BOX 6: NARRATIVE EXCERPTS INVOLVING COGNITIVE CHANGE STRATEGIES UTILISED DURING EVENTS

Excerpt 1

“just **keeping a cool head**, try and **stay sort of almost relaxed** about it, **don't get caught up in the moment**, and **just going through the basics** that we've always been taught throughout medical school and **just doing ABCD... it makes me feel a bit calmer** and you feel more collected and you feel like you've got somewhere to go, and a base to build upon” [M_AD_22]

Excerpt 2

“**So I go back into the literature and search** and make sure what I'd done wasn't completely dangerous ... I was panicking a little bit to be honest for about five or ten minutes and then, you know, we do all the bits and bobs and **they** [Registrars] **say 'it's fine'**” [M_INT_35]

ER strategies narrated *after* preparedness events

Emotion regulation strategies narrated following events (28.7% of the narratives) were fewer compared to during (51.2%) events. By far the most common strategy narrated was the sharing of emotions after the event, all of which involved face-to-face communication. Participants shared with (in order of frequency): peers, supervisors, nurses, family and others (e.g. patients). Peers included those with whom they worked, fellow medics with whom they lived and fellow F2s. Through sharing stressful events with peers, supervisors and nurses participants reported gaining a different perspective, along with practical guidance or feedback on the events. The main reasons that participants cited for sharing were to debrief (Box 7, excerpt 1), as a cathartic exercise (surrendering to emotional responses; e.g. crying, away from the work context), to vent bad experiences and to reconcile their emotional response to event outcomes (Box 7, excerpt 2). One participant also described the staffroom as a place to go for a “*sob and a biscuit*” before going back out to see patients. Some never reveal their emotions at work in any way, preferring to share them with loved ones at home (Box 7, excerpt 3).

However, not everyone shared their emotions, and those who did voice sharing did not do so on every occasion. Some participants talked about down-regulating their emotional response by physically removing themselves (or witnessing others remove themselves) from their immediate work environment to a place out of sight (e.g. to a cupboard) where they could cry alone for a few minutes and compose themselves before returning to clinical duties. One participant spoke about going home and writing in a personal reflective diary after being dissuaded from talking about an event (described later – Box 8,

excerpt 4). Another talked about how recording their audio diaries helped (Box 7, excerpt 4).

Many participants expressed how they focused their emotional responses inwardly after events, voicing feelings of sadness, anger and guilt around unexpected outcomes (e.g. death of a patient). Thus, inward focusing of emotions occurred as participants attempted to make sense of unexpected outcomes. One participant spoke of another colleague experiencing such feelings for a week after an event. Another described how she experienced feeling “depressed” and reclusive after a specific event (Box 7, excerpt 5).

For some, emotion was expressed through some kind of physical activity after events. Physical exercise was commonly spoken about as a vehicle through which individuals would work-out feelings and frustrations (Box 7, excerpt 6), along with going on holiday, having a social life and writing things down. Other physical expressions of emotion regulation were through consumption - coffee, cigarettes, alcohol and food (Box 7, excerpt 7).

BOX 7: NARRATIVE EXCERPTS WITH EMOTION REGULATION STRATEGIES UTILISED AFTER EVENTS

Excerpt 1

“So I didn’t say anything, **but I did speak to a close colleague, someone who I get on really well with** about it and she felt the same about the matter... I felt that **I needed to talk to someone** about it because it was frustrating me so much. **I knew I had that person or I had my mates back at home...**” [M_INT_22]

Excerpt 2

“The girls who had also been on the shift that day, **we spoke about it again the next day**, and they were just like ‘*what is it that had made you so upset?*’ I said ‘*oh I was just tired, just felt I was overwhelmed by it all and I felt a bit upset*’ and she said ‘*that’s not your fault... you can only do one thing at once so don’t feel it’s- you’re not clinically good because you can’t see all these patients, it’s just the nature of the hours that we work*” [F_INT_08]

Excerpt 3

“The most frequent emotion that I feel in work at the minute is anger and frustration just because of the amount of junk that comes in...a lot of the stuff that comes in should be at the GP and shouldn’t be referred to A&E....that frustrates me so much and **I have to suppress it on a daily basis** because I hate it and, like, **I go in with a smiley face ...I hate the work...** and **I suppress that every day...Put on my happy face ... and then come home and rant to my husband**” [F_INT_11]

Excerpt 4

“**Talking about it**, even though **you’re just talking about it into like a diary**, just sort of **verbalising it**, it makes you, sort of, **process it a little bit more...if you have a bad situation you can still learn from and turn it into something positive**” [F_INT_13]

Excerpt 5

“I actually had to ask for senior help on that one because I had no idea what was happening. I have never seen it before. I’ve heard of it but just, sort of, in passing and when I had first recognised that something was wrong I felt really, that’s after **I called for senior help, one of the Registrars had come to help**. I felt very scared and very worried both for the patient and obviously for myself, my job. The patient went to ICU on Friday

and for the rest of that weekend I was extremely concerned. I was really, really depressed at home. Almost wanted to give my resignation the next day, on Monday. **Just not even go to work**. A lot of sleepless nights that week. Didn't leave the house that weekend at all. Didn't eat much" [F_INT_09]

Excerpt 6

"**I do a lot of sport**. I've got a lot of **coping tactics outside work which mostly involves being very active**. Having a **social life outside the hospital** is so important. **It keeps you grounded**. It keeps you fit in the real world, and I thought I'd dealt with some cases but again they got brought up again at the meeting that I had today with your team and I realised that, at some level of me, those cases are still very difficult for me to talk about. Very difficult to process and can still make me feel very upset" [F_INT_09]

Excerpt 7

"I have a lot of bad habits. **I do drink a lot of coffee**. **I do drink alcohol and I do smoke on occasions...but I definitely started smoking a lot more since this A&E rotation**. That's **one way I have been coping with it**. It's bad. I think that's the things that I do find is very stressful, you know, **I do come back, have a beer, a glass of wine and I do drink a lot of coffee in the day**. I have a very long commute...12-hour days every day, so you know you often find you don't much of a life. So you kind of **have to do everything to cope**. I must say my coping mechanism is usually very good, but at the moment they're dreadful" [F_INT_13]

RQ2: Are there any predominant patterns in ER strategy use?

Just under half of all narratives with emotional regulation strategies contained more than one type of strategy. Analysis of the narratives identified two patterns used by our participants: the most common '*suppression during, expression after*' pattern and the less common '*expression during, regret after*' pattern. We outline these two patterns in answer to our second research question. As before, words underlined are where emotional words or emotional tone are narrated, with the regulation strategy used in bold.

Pattern ONE: Suppression during, expression after

It was evident from our data that participants who spoke about suppressing their emotion during a stressful event often outwardly expressed their emotions after the event. The emotional responses that our participants spoke of suppressing during an event can be categorised into three main groups: suppression of empathetic emotions (e.g. sadness, upset, crying, loss) as a direct response to critical care situations, suppression of emotional responses generated by negative interactions with others such as colleagues and patients (e.g. annoyance, anger, awkwardness, frustration), and also the suppression of emotional responses triggered by moral appraisals of inequity or misuse of systems, such as inappropriate referrals or admissions (e.g. frustration, anger, helplessness).

The use of suppression could be understood as a short-term response to the situation, rather than being a continuous process. Reasons provided by participants for suppressing their emotions at the time and expressing them later were various, such as to maintain professionalism, avoid being perceived as

weak and incapable, a general understanding that it is the 'done thing', and as a mechanism to protect themselves from emotional distress and so enable them to continue to work (Box 8, excerpt 1).

Once the event had passed these emotions were said to surface and were most frequently expressed outwardly through talking, crying or activities. One participant narrated being in the position where he had not received adequate training to progress in his chosen specialty, but found this very difficult to raise with his senior consultant so he suppressed his concerns. Later, in conversation with his registrar, he largely seemed to blame himself, voicing disappointment for not doing something sooner (Box 8, excerpt 2). Another participant who suppressed his emotions during difficult events but expressed them afterwards spoke about having to be *'very professional'* and, when breaking bad news, avoiding breaking down and crying yourself because that's *'not what you're there for'*. However, he went on to explain that it was important to share afterwards (Box 8, excerpt 3). This further supports the view presented by foundation doctors that the suppression of emotions is essential in order to function effectively as a foundation doctor when dealing with difficult events.

As illustrated in the above section in relation to RQ1, many participants who narrated suppressing emotion during an event spoke about the need to talk to others later. One participant spoke about suppressing a host of emotions and writing a reflection of the event that they found particularly distressing in the hope it would help others (Box 8, excerpt 4).

BOX 8: NARRATIVE EXCERPTS FOR 'SUPPRESSION DURING, EXPRESSION AFTER'

Excerpt 1

"Don't look at the whole, just each little bit and do it that way" was how someone described it to me, because ***if you look at everything you react as a parent or you react as a compassionate normal human being would and you'd stop working*** because you wouldn't be able to process it or cope with what's in front of you. So ***you shut out and you micro focus and you just do each task, and that's just how you have to do it to do the job...*** it's not long-term suppression. I definitely wouldn't agree with that. I would say that's completely unhealthy, but ***short-term suppression you have to be able to do"***
[F_INT_09]

Excerpt 2

"So myself and the Registrar had a ***sit down chat over a cup of coffee...*** when he sat down he just went *'how do you think the job has gone on'*, and ***we just really had a good chat about it***. He's a very, very you know good person. A really nice guy. Very easy to get on with and chat to. So I was open and honest with him and said, *'you know, to be completely honest I'm disappointed, I don't know whether I'm really disappointed in the job, the consultant or myself...* from an F2 point of view talking to a consultant it's very difficult to say, 'if you'd trained me more or do this', and I know obviously that would be the sensible thing to do and have a proper meeting and discussion with him, but it's much more difficult, and I'm quite a proactive person" [M_INT_35]

Excerpt 3

"You know, you'll feel sad when discussing with a family or you're breaking bad news and ***you have to act like you're not, even if you are... you can't break down crying when you're trying to explain to a family some bad news***. They don't want that. That's not what you're there for. Patients, like I say, can be frustrating. You can be angry with patients...

you can be really annoyed... **I think you do suppress your emotions a lot**, not always in a beneficial way... a lot of it is actually professionalism but I think **we bottle up our feelings in front of patients**, and I think that's the right thing to do... but I also believe it's important to show your emotions... I think it's wrong to then bottle up emotions fully. **It's important you then discuss it with someone else"** [M_INT_28]

Excerpt 4

"I remember the anger. There was a lot of anger in me and actually I was already thinking '*how can I make sure that this never happens to me again, how could I practice?*' and that's what I was thinking about the whole time... **I was functioning, I wasn't necessarily there.** So **I was there but not there...** **I was not engaging.** It was quite clear to my seniors and to my other colleagues that I had obviously been rocked by this... [afterwards] **I wrote an essay which is basically a reflection of this and I looked at the data and I looked at, you know, what we should have done and why we may not have done it.** So those are the types of actions that I took afterwards, but the way that I felt about it, my anger was... it was anger and it was frustration but at the same time **my mind was focussing...** I wanted to change a system" [M_INT_45]

Pattern TWO: Expression during, regret after

As mentioned earlier, there were times when either ER strategies were ineffective or simply not deployed, resulting in the outward expression of emotion during stressful events (as in Box 5 above). Those who spoke about outwardly expressing emotion during events often also spoke about experiencing feelings of regret afterwards (regret can be seen as a upward-regulation strategy, intensifying emotions rather than regulating them downwards). Outward emotion was mostly triggered by fatigue, pressure, fear, inequity (e.g. where it was felt patients were not in receipt of care that was equitable) and difficulties around challenging seniors over their clinical practice. Outward emotions were generally explained as reactive and in the moment. Feelings of regret, as revealed in the narratives, either surfaced instantly or some time afterward. An example of an expression of instant regret is shown in Box 9, excerpt 1. Here the participant realised that he had been abrupt with a child (or rather not as pleasant as he usually tried to be), as soon as he had left the room.

How long these feelings of regret lasted varied. Often those who expressed emotion during an event recognised the negative effect of their behaviour on others and were able to make amends for their emotive response shortly thereafter. For example, one participant spoke about high workload and being under pressure from constant 'bleeps' and as a consequence he sometimes let his emotions show, '*but I always like to think that afterwards I go and apologise*' (M_AD_30). However, for those participants who were not able to make amends, their narratives conveyed lingering feelings of sadness, awkwardness and guilt. This was more usually the case where participants had experienced challenging seniors, resulting in lasting 'frosty' relations, or in cases of patient death or inequity of patient care. For example, one participant spoke about a traumatic event where he was asked by his consultant to respond to a 'resus' call. His seniors did not attend when called and he felt the patient's dignity was compromised. He narrated speaking to his senior about what happened but that conversation ended up being confrontational. The lasting emotional impact of his experience was one which he shared with others as a

warning of the impact of emotional distress and regret (Box 9, excerpt 2). Overall, evidence for each of the ER strategy patterns suggests that many of our participants viewed the outward expression of negative emotions as detrimental, in that they subsequently experienced elements of regret or guilt over their reactions. Moreover, the majority of participants saw emotional suppression as a necessity.

BOX 9: NARRATIVE EXCERPTS FOR 'EXPRESSION DURING, REGRET AFTER'

Excerpt 1

"So I was already in a pretty crappy mood... there was more and more happening and these parents were kicking off... I came out and **I thought to myself I was not my usual happy, interactive self** with that child. I had certainly let my emotions come through and I'd been a bit more abrupt and just to the point... I wouldn't say I was unprofessional, but I do **remember looking back on it as soon as I walked out the room**... *'you weren't as pleasant as you usually try to be with the kids'* **because I always try**, and I obviously let my feelings of anger and everything else get on top of me... Which isn't nice."

[M_INT_22]

Excerpt 2

"I spoke to my senior about it and the fact about leaving the MDT[Multi-Disciplinary Team] and it was a very difficult conversation because I'm actually... **it's a little confrontational, and I wasn't necessarily wanting to be confrontational**, but I said, you know, *'I don't understand why none of you came out to be able to say'*, and he was almost, I think the shock and the horror on my senior's face was as if you're not really meant to ask that question to me, and it was very awkward because I don't even really remember him giving me a response... **I literally burst into tears as part of, you know, maybe thirty, forty minutes** and I share this with people. I share this with the juniors who are below me and my seniors because, you know, for me you have to be able to function and that's exactly what I did whilst I was at work, but **when I'm at home I need to also be able to function and really bottling things up isn't enough** and whilst I'm not necessarily the biggest talker to lots of people, **that was my way of, kind of, trying to get rid** because literally, I mean, it's horrific to feel that you've done something, whilst technically speaking the patient had already passed. I always refer back to things when I treat a patient and **I think 'is this the care that I would like my mother to have?'**" [M_INT_45]

RQ3: Is there any evidence that participants change the type or pattern of ER strategy over time?

Eleven of our longitudinal audio diarists gave us sufficient data for us to examine the types of emotion regulation strategies they narrated over time and whether these changed from those narrated during their F1 year (using data collected in our previous study: Monrouxe et al., 2014). These 11 participants described a total of 175 strategies within their F2 data (providing between 11-24 strategies each, averaging 16 per participant); and 68 strategies within their F1 data (2-16 each, average 6). All strategies by participants at Time 1 (F1) and Time 2 (F2) were entered into a spreadsheet and examined for similarities and differences where possible (e.g. participants with fewer than 6 strategies at Time 1 were excluded from this due to a lack of comparative data).

From the remaining 6 participants, although numbers were too small to examine differences across specific strategies, we were able to examine patterns of strategy across the events themselves. We noticed that four out of six participants narrated more than twice the number of regulation strategies *during* the event at Time 2 (compared with Time 1) with all participants narrating at least three times more *after* the event at Time 2. However, due to the small numbers overall and the focus on emotion within this follow-up study, it is possible that these additional numbers could be an artefact of the second study. We did not sensitise foundation doctors to the topic of emotion and emotion regulation in the original study (Monrouxe et al., 2014) and this could account for the fewer ER strategies identified during F1 compared with F2.

Furthermore, although we did not have sufficient data to examine changes in the types of emotion regulation strategies participants used over time, there was some indication within the narratives themselves that foundation doctors learned from their experiences, reflected on them, and sometimes altered the ways in which they reacted. For example, one participant talked about how her supervisor worked with her following a difficult event, turning it into a Supervised Learning Event (SLE) by encouraging her to reflect on how she was able to deal with it in a calm manner: something she could not have done a year ago as an F1 (see Box 10).

BOX 10: NARRATIVE EXCERPT FOR EVIDENCE OF CHANGE IN ER STRATEGIES

“It was still scary, kind of, after the event as well. What was quite helpful was **my consultant was quite a helpful consultant and he reflected on it with me**. So he **made it into a supervised learning event** and **we, kind of, discussed what I did right in that situation** and I hadn’t really done anything wrong. So there wasn’t really anything to reflect on what I’d done wrong, but my feelings about the situation because he was like “well you were scared in that situation, so this is what we can take from it, and you can know that you were way better than you ever would have done twelve months ago” and it **was quite helpful because I’d been under him for eight months and he could say “I’ve seen the transition, you know, seven months ago when you started on this ward you wouldn’t be able to do that”**. [F_INT_37]

RQ4: Is there any evidence of gender differences in the ER strategies narrated?

In Table 2 we provide the breakdown of narratives containing no negative emotion, negative emotion but no regulation and negative emotion with regulation, by gender. Of the 26 participants in this study, 23 narrated situations that included emotion with regulation (15 females, 8 males).

TABLE 2: NUMBER (%) OF NARRATIVES CLASSIFIED BY NO NEGATIVE EMOTION NARRATED, EMOTION NARRATED AND EMOTION WITH REGULATION BY GENDER (TOTAL N=235 NARRATIVES)

	Males	Females	Totals
No negative emotion narrated	27 (27.6%)	26 (19%)	53
Negative emotion, no regulation	17 (17.3%)	30 (21.9%)	47
Negative emotion with regulation	54 (55.1%)	81 (59.1%)	135
Totals	98	137	235

In Table 3 we provide a further breakdown of the 135 narratives that contained emotion with regulation in terms of the number of strategies we identified within each narrative by gender. As we can see from this table it appears that a greater proportion of narratives produced by the males in our study contained a single ER strategy whereas only females narrated events with three ER strategies.

TABLE 3: NUMBER (%) OF REGULATION STRATEGIES IDENTIFIED IN EACH NARRATIVE BY GENDER (TOTAL N=135 NARRATIVES)

Number of strategies	Narratives by males	Narratives by females	Totals
One	35 (64.8%)	38 (46.9%)	73
Two	19 (35.2%)	31 (38.3%)	50
Three	0 (0%)	12 (14.8%)	12
Totals	54	81	135

We then calculated the percentage of strategies used as narrated by males and females in our study in order to examine any further patterns within our data that might be useful in generating hypotheses for future research (further analyses were not undertaken due to the nested and non-independent nature of the data). Table 4 identifies all 209 strategies (136 identified across 81 narratives by females, 73 identified across 54 narratives by males), from the 135 narratives that contained evidence of emotion regulation by gender of narrator and the time point at which the regulation strategy was used: either before the event, during or after. From here we can see that there is a tendency for females to narrate more ER strategies after the event than males. An area for further investigation might be to explore if this difference is statistically significant and if so, why. As already mentioned, the most common strategy after events was the sharing of emotions. It might be that more males than females engage in this regulatory strategy.

TABLE 4: EMOTION REGULATION STRATEGIES BEFORE, DURING AND AFTER EVENTS BY GENDER (TOTAL N=209)

Gender	Before	During	After	Total
Male	18 (24.7%)	40 (54.8%)	15 (20.5%)	73
Female	24 (17.6%)	67 (49.3%)	45 (33.1%)	136
Total	42 (20.1%)	107 (51.2%)	60 (28.7%)	209

RQ5: To what extent is emotion regulation an individual or interpersonal phenomenon?

So far we have considered emotion regulation from the perspective of the individual: focusing on the question of how foundation doctors themselves manage their own emotions. However, in addition to narrating how they manage their emotions personally, participants also touched on aspects of emotion regulation arising from interactions with others as part of interactional approaches to managing emotions. Although asking for help in dealing with emotions is more of an individual way of managing feelings (see Box 4, excerpts 1 and 2), participants also narrated times in which the wider team rallied around to help foundation doctors manage their emotions during and following difficult events. These more interpersonal ways of dealing with things re-framed emotions and the regulation of them into a more distributed, rather than individual responsibility.

In terms of this interactional approach to ER, participants mainly spoke about how supervisors would initiate discussions with foundation doctors about their coping with difficult events. For example, as illustrated earlier in Box 10, one participant talked about how her supervisor turned the discussion into a supervised learning event, helping the foundation doctor to reflect on the situation and learn from it, as well as to see how much better she was at being able to cope than before. Team-briefs were also talked about in terms of helping foundation doctors manage their emotions, providing valuable time for closure (Box 11, excerpt 1), along with individual team members approaching and checking on foundation doctors when alerted to them being emotionally affected by a difficult situation (Box 11, excerpt 2). Although the majority of talk around the support of peers related to situations in which foundation doctors openly shared their feelings with peers (so pro-actively seeking support), participants occasionally talked about how they noticed moments of emotional fragility in their peers and actively looked after them, mindful that perhaps no one else was doing so (Box 11, excerpt 3).

Nurses also took the initiative, providing participants with a cup of tea, a shoulder to cry on and the voice of compassion and reason when emotions ran high (Box 11, excerpts 4 and 5). Finally, the efficacy of a distributed approach to ER was summed up by one foundation doctor who believed this aspect was critical for the smooth running of health care teams, beneficial in terms of feeling prepared for practice, good for patient care and the retention of doctors in the profession (Box 11 excerpt 6).

BOX 11: NARRATIVE EXCERPTS FOR EMOTION REGULATION AS AN *INTERPERSONAL* PHENOMENON

Excerpt 1

"And then afterwards, then you have the breakdown and... the **team debrief and then you go through everything and work out what went well, what went badly**" [F_INT_09]

Excerpt 2

"My senior kind of said, '*well I'll deal with that and I'll let you know what we do next*' then he spoke to the neuro surgical team and then it all kind of got sorted out, and **then another doctor** who I've spoken to recently, **he was like 'are you okay? I heard you had a bit of upset** so everyone checked that I was alright afterwards and **made sure I was fine**" [F_INT_08]

Excerpt 3

"I said '**let's go get a coffee**', we went and had a coffee together, **had a chat about it and I reassured her** that it wasn't her fault and she got back on with the day. Whereas if she hadn't have had that, it might be a very isolating experience" [M_INT_28]

Excerpt 4

M_INT_22: Oh I **have a vent**, yeah I **let it off to someone**, I don't let it build up inside me, someone will hear my full reasoning for me being worked up about something, and then they have a logical answer... a logical thing that I could do to sort it out, depending on what the reason is for me being in such a foul mood

M_INT_35: The nurses?

M_INT_22: Yeah it's usually the nurses.

M_INT_35: **If they sense you're angry they'll offer you a cup of tea...** You sit down and they'll be like '*what's up love?*'

M_INT_22: **A cup of tea and I'll vent...** and the nurses are a good bunch and obviously they go through exactly the same sort of emotions and stuff as we do.

Excerpt 5

"Whenever I came out I was... I didn't cry but I was really upset to the point where **the staff grade came along and was like 'are you okay?'** I just told her about it because she was dealing with her, and **she gave me a hug and said 'I know it was sad'** and that was okay then..." [F_INT_11]

Excerpt 6

"I think the **team are great because obviously they deal with highly pressured environments**, very emotional for patients, everyone is friendly, intelligent, compassionate, but can also function under pressure. Like **no one breaks down under the pressure. Everyone just copes with it and then they work really well as a team.** I think having a good team actually just makes the entire difference. If your team works well then that department works well and it's good care for the patients... The people that I know that don't have the support or teams that don't function and they can't talk, things tend to fall to pieces... don't want to go to work. They don't like each other. They don't feel they've got a senior support so they're left dealing with cases they feel completely unqualified to deal with. It's terrifying... I know people that have quit ... things had got so much for me that the only way they can think about dealing with it is to quit, and I do know people that have done that" [F_INT_09]

Summary and Discussion

The transition from medical student to professional doctor is a demanding time (Illing et al., 2008). New doctors are under increasing pressure to perform without making mistakes in an environment that expects regulation of emotions. The changing NHS with demands for ever increased patient through-put, rising patient expectations coupled with increasingly complex cases and patient co-morbidities makes the job progressively more difficult. This situation is not helped by the lack of time for team development and enhanced collaboration (Jackson & Moreton, 2013; Sweet, 2015). A recent survey of Australian doctors' and medical students' mental health (Beyond Blue, 2013) provides a candid account of the psychological distress experienced by doctors, particularly foundation doctors.

Our results confirm and extend other research, which demonstrates that the period of transition from medical student to new doctor provokes a great deal of negative emotion. Sometimes, highly charged emotional responses are invoked, including new doctors feeling "terrified" and "overwhelmed". Our results also provide further insights into the emotional labour associated with medical training and clinical practice incurred by foundation doctors (Mann, 2005). Prior to events participants sought to deflect such emotional response by modifying or reframing the situation. One common strategy was to use procedures to check their knowledge and skills (e.g. using mobile devices to check information and 'fire drills'). These strategies were also employed *during* stressful events and had the effect of empowering foundation doctors to take control, interrupting their emotional response as well as being good for patient care.

Although we evidence an array of ER strategies, most often a single strategy was employed *during* an event. Most commonly, suppression. It was clearly thought to be the professional thing to do. Our research shows this suppression strategy was linked to two support mechanisms: esteem and emotional support. Esteem support (either sought by the F2 or offered by others) preserved or enhanced their sense of competence or ability (e.g. the reassuring "you can do it" phrase, enabling them to get on with the job in hand). Emotional support was seen to safeguard the self and reconfigure the emotional association with events. As with esteem support, emotional support was sought by F2s or offered. It was interactional and provided by members of workplace teams. Another strategy was self-management of emotions through, for example, deep breathing; echoing successful bio-feedback techniques discussed earlier (Pawlow & Jones, 2002; Philpott, Chappelle, & Blairy, 2002). Emotion regulation strategies employed after the event were used to ward against the negative consequences of suppressing emotions during the event, in front of patients (e.g. feeling increasingly withdrawn, or heightened feelings of annoyance and frustration). The main strategy involved talking face-to-face with others: peers, co-workers, seniors, as well as family and friends. However, this raises questions about how such support can be legitimised and what happens in situations when the team does not or cannot support the individual.

Through the narratives we identified two emotion regulation patterns: 'suppression during, expression after' and 'expression during, regret after'. The challenge is to support foundation doctors to move from the second pattern to the first. Although there are indications in our data that foundation doctors learn from the 'expression during, regret after' pattern, the workplace team has an important role to play in supporting these doctors, particularly those who may be struggling with their emotions. Our findings also suggest potential gender differences in ER. The only difference that reached statistical significance however, is that females tended to narrate more strategies per event. This is an obvious area for further research.

Echoing many of the comments above, one further finding from our work is the role of the wider team in terms of regulating the emotions of foundation doctors. Although our research, in line with much of the work in this area, was essentially framed within an individualistic perspective – ER being something that a person does in anticipation of, or following an emotional reaction – we found this framework to be restrictive and incomplete. ER is not only an individual endeavour; it is a social, interactive, endeavour. This aspect was recognised by the wider team in some cases, resulting in very positive outcomes. However, the capacity and capability of the team to recognise and provide such support was variable. Historically new doctors have benefited from the peer support engendered by shared, on-site accommodation, but this is no longer the case. Indeed, Gajendragadkar & Khojraty (2009) report the 'erosion of social support networks' as a result of cutting of free accommodation for foundation doctors. The old arrangement facilitated opportunities for social interaction and developed camaraderie and peer support. Gajendragadkar & Khojraty (2009) cite one respondent who commented on the impact on the pastoral care of foundation doctors:

"More importantly, FY1s living together is most important for their pastoral care. They are the most empathetic to the strains of starting as an FY1 and give the best support. I believe that losing this would have a major negative impact on the junior doctor body as a whole. In particular: its sense of community, confidence and happiness."

<http://careers.bmj.com/careers/advice/view-article.html?id=20000374>

It is clear that individual and team emotional regulation assists doctors' performance and thus benefits patient care, yet time for tea and a chat seems to have diminished and with that the opportunity to facilitate young doctors' emotional regulation. Having outlined our key findings, what follows in Table 5 is a summary of our these findings for each research question, how our findings relate to and extend previously published research, and the implications of these key findings for educational practice and further research. Our research collected rich narrative data from 26 F1s from four UK sites. This sample, and the data generated, is sizeable for this type of qualitative research: with around 21 hours of rich narrative data, much of which is longitudinal. As such, we stand by our assertion that this really is a sizable sample as it goes beyond mere numbers of participants. Although the largest number of participants were

Wales-based for their foundation training, we note that not all would have attended a Medical School in Wales or be Welsh nationals. Our aim was not to recruit a sample that was representative of the wider population.

Although this was an exploratory qualitative study, it does suggest that a wide range of emotional regulation strategies are utilised during everyday working activities. We cannot generalise from this work to say how often each strategy is adopted across the country in a quantitative sense, but it is likely, given the range of situations covered, that trainees across other hospital sites adopt a similar range of strategies identified here. The answers to the research questions provided by this study, particularly when related to other research, suggest both avenues for further research and issues that are likely to apply in a variety of situations.

TABLE 5: SUMMARY OF KEY FINDINGS, RELATIONSHIP WITH EXISTING LITERATURE, EDUCATIONAL AND RESEARCH IMPLICATIONS MAPPED BY RESEARCH QUESTIONS 1-5

Research question	Summary of key findings	Relationship with existing literature	Implications for education and further research
RQ1: What ER strategies do foundation doctors narrate before, during and after challenging clinical situations?	<ul style="list-style-type: none"> The majority of narratives collected contained negative emotion with ER strategies, particularly in unprepared narratives; Most of the negative emotional words employed were anxiety-related; Just over half of the narratives contained a single ER strategy; Just over half of the ER strategies identified in the narratives occurred during the event; While foundation doctors employed a range of ER strategies before, during and after events, they most commonly used: <ul style="list-style-type: none"> - modifying the situation in some way (before event); - suppressing emotions (during event) - sharing emotions (after event). 	<ul style="list-style-type: none"> Previous research primarily induced emotions in lab-based settings via video clips (Gross & Levenson, 1997; Sheppes & Meiran, 2007; Sheppes et al., 2009; Aldao & Nolen-Hoeksema, 2013) and images (Sheppes et al., 2011; Vujovik et al., 2014) rather than obtaining personal narratives directly from participants; ER strategies have been examined for healthcare professions, with suppression being used by paramedics (Mitmansgruber et al., 2008) and reappraisal and suppression by doctors (Kafetsios et al., 2014). 	<ul style="list-style-type: none"> Foundation doctors need to be supported through their experiences, and in particular helped to deal with, and resolve where possible, their negative emotions (Satterfield & Becerra, 2010); Foundation doctors need learning opportunities to recognise and reflect critically on their ER strategies as part of the formal curriculum and informal workplace learning including the diversity of strategies they use and when; Medical students should learn about and practise proactive ER strategies facilitated by situation-relevant tools such as 'fire drills' and technologies prior to graduation; Trainers should be explicit about their personal choice of ER strategies and be proactive in discussing the ER strategies adopted by foundation doctors with them; Recent recommendations that emotional resilience training should be an integral part of the medical curriculum is supported by our research (Horsfall, 2014); Further research is needed to explore the impact of educational interventions on the development of foundation doctors' ER strategies.

Research question	Summary of key findings	Relationship with existing literature	Implications for education and further research
<p>RQ2: Are there any predominant patterns in ER strategy use?</p>	<ul style="list-style-type: none"> • We identified two prominent patterns across the narratives: ‘suppression during, expression after’ and ‘expression during, regret after’; • Both patterns suggested that many F2 participants viewed the outward expression of emotion within the workplace as a negative thing, that was not compatible with professionalism, and therefore emotion suppression was viewed as a necessity. 	<ul style="list-style-type: none"> • Suppression as an emotion regulation strategy has previously been linked to an increase in psychopathology (Aldao & Nolen-Hoeksema, 2010), being less successful in down-regulating the experienced emotion and a decrease in memory of the event (Gross, 2001); • Under controlled conditions, people interacting others who are suppressing emotions show increased physiological responses (e.g. increased blood pressure), reduced rapport and inhibited relationship formation (Aldao & Nolen-Hoeksema, 2010). However, in doctor-patient relationships, suppression has been linked with increased patient satisfaction due to the patients’ expectations (Kafetsios et al., 2014). • ER studies using the Gross model have primarily focused on examining 1-4 strategies (Gross & Levenson, 1997; Sheppes & Meiran, 2007; Kalisch, 2009; Kafetsios et al., 2012), often comparing one strategy against another meaning patterns of ER strategies could have been missed. By using a framework allowing for all strategies to be coded we have located patterns not previously described in the literature. 	<ul style="list-style-type: none"> • Foundation doctors need formal and informal educational opportunities to help them adopt the most appropriate ER strategy for the context and with their long-term health in mind; • The pros and cons of the two main patterns should be explored as a part of training; • Foundation doctors and trainers need to have frank dialogue as part of workplace learning experiences about the place for emotions within healthcare practice and to understand when emotional expression might be ‘professional’ and when it might not; • Further research is also needed to explore the impact of suppression in foundation doctors and their more senior colleagues using similar measures to that used in the psychological literature (Aldao & Nolen-Hoeksema, 2010) to assess whether links in pathology are found in these populations; • Further research could also explore the association of suppression, rapport and relationship formation with patients when used by foundation doctors.

Research question	Summary of key findings	Relationship with existing literature	Implications for education and further research
<p>RQ3. Is there any evidence that participants change the type or pattern of ER strategy over time?</p>	<ul style="list-style-type: none"> • Although we identified more ER strategies used when participants were in their F2 than their F1 year, this is most likely an artefact of our study design; • There was sufficient suggestion from individual narratives that foundation doctors altered ways in which they reacted emotionally based on their reflections on experience to warrant further investigation. 	<ul style="list-style-type: none"> • Although studies have determined that ER strategies differ between individuals (Gross, 2013), there has not yet been a longitudinal study looking at the change in strategies over time or how participants react to different type of situations; • It has been determined that the intensity of the situation will affect the type of emotion regulation strategy used (Sheppes et al., 2011). 	<ul style="list-style-type: none"> • See RQ1 and 2 above for educational implications; • Further research is needed to explore the impact of reflective practice on changes amongst foundation doctors' ER strategies; • Further longitudinal research is needed to purposively explore the development of foundation doctors' ER strategies over time and across different contexts.
<p>RQ4. Is there any evidence of gender differences in the ER strategies narrated?</p>	<ul style="list-style-type: none"> • Female participants used more ER strategies per event on average than male participants. 	<ul style="list-style-type: none"> • That females are more likely to employ more ER strategies than males (i.e. they narrate 2 or more strategies more often than males) is a new finding. Previous research examining number of strategies used during a single event has found that 65% of participants employed multiple strategies in response disgust-eliciting film (Aldao and Nolen-Hoeksema 2013). However, no research to date has been able to determine whether the use of single or multiple strategies can be considered more successful. 	<ul style="list-style-type: none"> • As we analysed 'free narratives' of events, rather than probing for responses based on a list of possible ER strategies, this finding could be an artefact of females' narrative strategy (e.g. being more detailed). Further research could explore the full range of possible ER strategies available purposively via questionnaires along with measures of what comprises a 'successful' outcome to determine whether gender differences are present and whether single or multiple strategies are efficacious. • Further research could explore the relationships between foundation doctors' emotions and the number of ER strategies utilised alongside various other personal identities (e.g. age, race, ethnicity, nationality, sexuality etc.).

Research question	Summary of key findings	Relationship with existing literature	Implications for education and further research
<p>RQ5. To what extent is ER an individual or interpersonal phenomenon?</p>	<ul style="list-style-type: none"> • ER is not only an individual process: it is also an interpersonal phenomenon distributed amongst the team; • Such interpersonal approaches to ER included foundation doctors discussing their emotional experiences with peers, supervisors and nurses and engaging in team-briefs; • Distributed ER strategies were thought to be essential for effective healthcare practice. 	<ul style="list-style-type: none"> • Previous research has discussed <i>emotion</i> as something that is distributed rather than individual (Lewis et al., 2005; Lewis & Rees, 2013), but our finding is unique in the emotion regulation literature that has examined this as an individual phenomenon. 	<ul style="list-style-type: none"> • The workplace learning environment and culture should be examined for the way in which it supports (or inhibits) foundation doctors' emotions and their learning to regulate emotions within the team; • Healthcare practitioners working with foundation doctors need to support foundation doctors through their experiences and specifically with their emotions and ER strategies; • Clinical and educational supervisors need to encourage dialogue with foundation doctors about their emotions and ER strategies; supervisors need also to be comfortable sharing with foundation doctors their own emotions and ER strategies; • Educators could help to develop 'team-based' and/or 'foundation doctor only' small group activities (perhaps including simulated scenarios) to give foundation doctors and other practitioners opportunities to discuss emotions and ER strategies based on simulated and real healthcare experiences; • Further research is needed to explore the impact of emotion-focused small group learning activities on changes amongst foundation doctors' (and team members') ER strategies.

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