

## **Abstract**

### **Aim**

Stress is prevalent amongst doctors and interventions are offered, often as part of their continuing professional development, to help doctors learn in the workplace about the recognition, prevention and management of the harmful effects of stress. The aim of this review was to look at existing research to determine the features of successful educational interventions and any factors that may affect outcomes.

### **Methods**

We searched key databases for papers published between 1990 and 2017 on the themes of stress which included an education-based intervention and practising doctors. Using an inclusive approach to the review, a broad evaluation was made of the primary research using both quantitative and /or qualitative evidence where the study reported a positive outcome in terms stress management.

### **Results**

Review criteria were met in 31 studies of 1356 originally retrieved. Three broad categories of interventions emerged from the coding process: Mindfulness-type [n=12]; coping and solutions focused (CSF) [n=12]; and reflective groups [n=7]. There is evidence that these interventions can be successful to help doctors deal with stress. Based on the results from this review, an original guide is advanced to help educators choose an educational intervention.

### **Conclusion**

Although evidence for some interventions may be ‘hierarchically stronger’, it is misleading to assume that interventions can be imported as successfully into any context. Factors such as medical specialty and health care systems may affect which intervention can be used. The guide offers an evidence base on which further research can be built.

## Introduction

Stress seems to be increasingly prevalent amongst doctors. Whilst some stress can be beneficial, work demands that are too onerous may cause harmful physical or psychological reactions. Serious consequences may include lost working days and personal distress.<sup>1,2</sup> Doctors are vulnerable to excessive work-related stress due to heavy work pressure, emotionally demanding roles and budgetary constraints.<sup>3,4</sup> They do not always prioritise their own health and wellbeing as illness is perceived to belong to patients.<sup>5</sup> To exacerbate the situation, doctors in the UK, like all NHS staff, need to work longer due to a raised retirement age and in certain medical specialties there are recruitment and retention issues.<sup>6</sup> More recently, there has been heightened attention on the importance of the health and wellbeing of caring professionals and the resulting benefits (or risks) to patient care.<sup>7-9</sup> Interventions such as Schwarz rounds have been implemented with the aim of helping staff to reduce stress through being able to provide more personal and compassionate care.<sup>10</sup>

Practising doctors are generally left to their own devices to cope with stress. Although activities outside work are important to maintain and enhance wellbeing, doctors also need to engage with work in a 'nourishing' way.<sup>11</sup> This article focuses on educational interventions intended to help practising doctors learn ways to prevent, recognise and manage the harmful effects of stress. Interventions for this cohort are increasingly offered as a part of continuing professional development (CPD). Recently other commentaries in this area have criticised the rigour and usefulness of existing research.<sup>12-16</sup> With the issue of stress amongst practising doctors being of utmost importance internationally in medical education and even beyond, we focused on what we can learn from existing studies so this descriptive review focused on those

interventions reported in the literature that have positive outcomes for doctors and their theoretical underpinnings, and was guided by the following questions:

1. What are the successful educational interventions to manage the harmful effects of workplace stress for doctors?
2. What are the features of these interventions and any factors that affect their application?

Based on this review an original guide has been produced to assist those involved in the support and development of doctors who wish to choose an intervention to manage the stress of doctors.

## **Method**

We searched key databases (Medline, PsycINFO, ERIC, PubMed, Web of Science, and Proquest) for peer-reviewed, English language articles published between 1990 (January) and 2017 (September) with use of the terms *doctor OR physician OR surgeon OR registrar OR psychiatrist OR general practitioner AND stress OR burnout AND education OR intervention*. The review was extended through web searches and using reference lists of articles found from database searches. We sought advice from an information specialist to help us design and maximize the search strategy. Initial searches were conducted of abstracts and subject heading (or MeSH) searches.

Educational interventions are taken to mean an intervention that is delivered in the workplace which aims to teach or develop those doctors in receipt of the intervention. Studies that focused on interventions to manage stress among medical doctors were included regardless of setting (e.g. hospital or community), specialty or country. For

our review the intervention is the starting point so potentially it could have been provided to doctors who were healthy, highly or just (a little) stressed. Articles relating to other health professionals (e.g. nurses, ANPs or other health professional groups) were included where results were specific to doctors separately, or where it is reasonable to assume from numbers included and/or analysis, the doctor sub group contributes to the results overall.

We kept a reflexive diary during the searching and analytical process in which we flagged issues about which articles were to be included. All papers were reviewed by both authors and any differences in perspective were discussed and resolved. One area of inclusion /exclusion that was subjected to scrutiny was how to determine whether an intervention was ‘successful’. A variety of criteria for success were identified due to the studies including a mix of measures (from a broad range of instruments that exist) that focused on different aspects of stress (e.g. actual or perceived). We responded by selecting studies based on primary research using quantitative and/or qualitative measures that revealed some positive outcomes relating to the impact of the intervention on doctors’ stress and related concepts relevant to the subject matter because of a found benefit to wellbeing. In this way our approach is appreciative and inclusive. This departs from other reviews that have focused on quantitative empirical research and the exclusion of studies that we argue can bring useful learning and enable us to see different things.<sup>13-16</sup>

EPPI-Reviewer 4 software was used for the purposes of the research synthesis. We worked together to code each paper from the final selection of studies according to a set of emergent categories and then extracted key data, using a standardized template, so

the studies could be compared. We sought to identify distinct groupings of the different types of interventions rather than focusing on one approach or lumping interventions together. This descriptive review systematically delved into the detail of the content of the different categories of such interventions which would be useful to those involved in the support and development of doctors. To draw out the broad practical implications for policy makers and practitioners we sought to establish the characteristics of successful interventions and the factors that affect their use.

## **Results**

From 1356 papers initially retrieved, 1213 were excluded as not relevant to the scope of the review on the basis of screening the article title and abstract (e.g. stress incontinence). Of the 144 remaining articles, 61 did not include an intervention or medical doctors; 39 were not based on primary research; 7 found no improvement as a result of the intervention; and 6 were not accessible or excluded on language. This left 31 studies in this review for closer examination of factors that lead to positive outcomes. Three broad categories of interventions emerged from the coding process: Mindfulness-type [n=12]; coping and solutions focused (CSF) [n=12]; and reflective groups [n=7]. These studies are summarised in table 1. Features highlighted are the educational intervention, country, participants, research design and measures, and outcomes in terms of intervention success.

### ***Mindfulness-type Interventions***

This group of studies involve interventions designed to help participants to learn to relax body and mind, of which the most well-known example currently is mindfulness. Mindfulness-type interventions include a mix of secularised forms of mindfulness (e.g. training in mindful awareness and relaxation) and also yoga and meditation which derive from spiritual traditions (i.e. Hindu and Buddhism). Primarily individual-focused, the interventions are intended to engage participants in their own personal process to enhance their capacity to deal with stress and avoid burnout. Participants are encouraged to learn to be in the present, be non-judgmental and accepting. Interventions in this group have been used preventatively rather targeted at ‘at risk’ doctors (secondary level) or for those experiencing difficulties (tertiary level)<sup>16</sup> participants were screened out where they suffered from depression,<sup>17</sup> or received psychiatric or psychological treatment.<sup>18</sup> Interventions were delivered to single,<sup>19</sup> and mixed medical specialties,<sup>17, 20, 21</sup> as well as mixed teams of practitioners in clinical settings.<sup>22-25</sup> An additional focus of some of the studies is the improvement in relationships with patients and the quality of care.<sup>21,22</sup>

There is compelling evidence that these interventions are successful in reducing stress with some studies using randomized control trials (RCTs)<sup>17, 18, 24</sup> and controlled research designs.<sup>19, 22, 26, 27</sup> Otherwise pre-post intervention type research designs (including follow up) are employed.<sup>20,21, 23,25, 28</sup> Quantitative measures are used in all studies with significant overlap in instrument types. Most commonly, stress is measured using the Maslach Burnout Inventory (MBI) and the outcomes of stress i.e. emotional exhaustion, depersonalization and personal accomplishment.<sup>29</sup> Statistically significant improvements are reported in terms of reduced stress or burnout using some

or all aspects of MBI.<sup>19-25, 27</sup> There was a positive trend in relation to changes in doctors' skills in empathy and patient interaction<sup>21,22</sup> although not in all studies.<sup>27</sup> Where the studies measured the success of mindfulness at building resilience, the results were less positive with no significant changes reported post intervention.

Mindfulness-type interventions can mean a significant commitment for both providers and participants. The full intervention that follows the original group-based programme, Mindfulness-Based Stress Reduction (MBSR), developed for patients in the United States in the 1970s, is 12 months long.<sup>18, 21,22,25, ., 27</sup> Between sessions participants can also be required to do homework or practice at home.<sup>18, 22, 25,</sup>

<sup>27</sup>Interventions were taught in the time allocated to CPD<sup>21,25, 27</sup> and offered in evening and weekend slots to fit in with doctors' workloads.<sup>23, 27</sup> They were accredited by professional bodies<sup>27</sup> and participants may be awarded educational credits for participation.<sup>21, 24,25</sup> The cost may fall to the participant to meet.<sup>25</sup> Abbreviated versions of mindfulness have been developed and these can produce significantly positive results for burnout. For example, Fortney et al's<sup>23</sup> study was based on what amounted to an 18 hour intervention 'dose' and showed improvements on MBI. At 12 hours, the brief video module administered mindfulness programme<sup>20</sup> showed a statistically significant decrease in stress, an increased sense of personal accomplishment and greater mindfulness skills. Where a small amount of taught mindfulness-type activity is combined with other approaches (e.g. Runyan et al's wellness curriculum,<sup>28</sup> the delivery of which took a total of 8 hours) there can be positive outcomes.

### ***Coping and Solutions Focused (CSF) Approaches***



These interventions are designed to help doctors recognize their own stressors, coping styles and thinking patterns and encourage change via the adoption of positive coping strategies. A move away from unhealthy coping strategies such as avoidance or alcohol consumption towards positive strategies of seeking social support and problem solving is encouraged.<sup>30</sup> An exception to this is Arora et al.'s study on the use of mental practice in surgery.<sup>31</sup> This intervention is uniquely focused on the implementation of a technique of mentally imagining the actions involved in carrying out surgical procedures without the associated gestures. A second study in this group incorporates mental practice into a broader curriculum on awareness of surgical stressors, coping strategies and relaxation techniques.<sup>32</sup>

CSF interventions work by offering physicians the tools to think and act differently. As a result doctors may take action to reduce/remove the source of stress or to seek additional social support, reinforcing the positive results of the intervention. Isaksson et al found that doctors who sought therapy following their intervention showed the largest move away from unhealthy coping styles.<sup>33,34</sup> These interventions are underpinned by theoretical approaches to stress, coping and behaviour change. These include elements of: cognitive behavioural coaching;<sup>35-37</sup> motivational interviewing;<sup>38</sup> mental practice;<sup>31,32</sup> emotional intelligence;<sup>39</sup> the transtheoretical model of change;<sup>40</sup> Pearlin and Schooler's hierarchy of coping mechanisms;<sup>30</sup> Duke Integrative Health Coaching Model;<sup>38</sup> and the theory of surgical coping.<sup>32</sup>

Interventions in this group are used preventatively, but also as a form of assistance to doctors already suffering from increased stress.<sup>34, 40</sup> It is suggested that evidence-based and less stigmatised interventions, such as cognitive behavioural coaching, are likely to

appeal to doctors who, as a group, may be resistant to seeking help themselves.<sup>35</sup> There is good evidence across the studies that these interventions are successful in reducing stress, emotional exhaustion and enhancing coping. Quantitative measures are used in all but one study, although there is a range that mostly do not overlap with the exception of some that use the General Health Questionnaire 12 (GHQ12). This set of studies do not seek to measure any improvements relating to changes of doctors' skills in patient interaction.

Issues of 'dose' are less important for CSF approaches, with relatively short interventions (e.g. McCue and Sachs<sup>1</sup>) half day workshop and Winefield et al's<sup>42</sup> three sessions producing measurable results. In Holt and Del Mar's study,<sup>40</sup> significant improvements were shown as a result of participants receiving a mailed intervention only. It is not clear, however, whether the improvements shown from these short term/'low dose' interventions endure beyond the short term, as the majority of studies took post test scores only a number of weeks after the intervention. Isaksson Ro et al's study,<sup>34</sup> describes a higher intensity intervention where 'struggling' doctors were provided with either a single day (6-7 hour) one-to-one counselling session with a psychiatrist/occupational health specialist, or as a 5-day residential group course. Improvements from baseline endured at a 3 year follow up.

### ***Reflective Groups***

Reflective groups are characterized by (usually single professional) groups of clinicians coming together with trained facilitators to discuss and reflect on challenging emotional and relational aspects of their cases. A strong feature of this design is the social support that derives from discussion and sharing with fellow group members. An important

intervention within this group of studies is the Balint Group,<sup>43-46</sup> which have their origin in the work of psychoanalysts Michael and Edith Balint and employ a particular format for guided reflection. All of the interventions in this group of studies encompass elements of reflective discussion, with some also incorporating elements of small group learning.<sup>47,48</sup>

The evidence for effectiveness of these groups in reducing stress is less developed than for the other two groups of interventions. There is low consistency of measures in quantitative studies and a number have been evaluated by qualitative only approaches. In terms of quantitative measures, for example, Bar Sela et al<sup>43</sup> reported a decrease in burnout (on MBI) for junior residents, but an increase for senior residents. West et al.<sup>48</sup> showed a significant reduction on the depersonalization scale of MBI, maintained at 12 months. However, West et al.'s<sup>48</sup> intervention incorporated additional elements alongside reflection, including elements of mindfulness. Koppe, Mortel and Ahern<sup>46</sup> showed an improvement on Warr's Work Related Affect.

Qualitative findings from the broader group of studies show that participants appreciate the support gained through these groups and that over a sustained period of time, involvement in a Balint group has potential to reduce stress, burnout and compassion fatigue.<sup>45,49</sup> A focus group in Sands et al study showed that participants felt their teamwork and resilience had improved.<sup>47</sup> Open ended questionnaires in Satterfield and Beccerra's study showed that participants perceived that the groups had a strong impact on their wellbeing.<sup>50</sup>

A number of studies also showed improvements in doctors' abilities to help families deal with emotions and psychological medicine skills.<sup>43,46</sup>

### *Features of Successful Educational Interventions*

Based on the 31 studies reviewed here, there is evidence in the academic literature that educational interventions can be successful in reducing harmful stress amongst doctors. Table 2 provides a summary of the evidence and displays the features of successful educational interventions to manage the harmful effects of workplace stress for doctors. It can be applied in practice as a guide to help determine how and why possible solutions work and thereby guide educators as to which of these techniques may be useful in a particular situation. So, for example, if a doctor is mentoring or appraising a doctor who is ‘struggling’, the guidance recommends a CSF intervention. Those responsible for the design and delivery of CPD courses can see that mindfulness-type interventions have been used in this way previously, with positive effect. Practising doctors themselves can see the choice of strategies that may help them cope with stress.

Table 2: Implications of the evidence for the prevention of harmful stress amongst doctors

	Mindfulness-type	Coping and solution focused	Reflective groups
Nature of intervention	Calming physiological effects achieved via: Mindful awareness,	Adoption of positive coping strategies (e.g. problem solving, seeking social	Support of colleagues, sharing concerns and learning new techniques

	meditation, relaxation and yoga exercise	support) and behaviour change	
Medical cohort	Any medical doctor in mixed or single specialty groups  'Healthy' participants (Not evaluated amongst doctors with depression or mental health issues) NB	Can be offered on an individual or group face-to-face basis or by mail  'Healthy' or 'struggling' doctors	Groups of doctors with shared clinical focus  'Healthy' or 'at risk' doctors
Required dose	Moderate to high doses (12 hours – 8 weeks +)	Moderate to low doses	Involvement over the longer term likely to be most effective
Pre-requisites	-High levels of organizational resources  -Trained coaches	-Lower levels of organizational resource  - Delivery requires expertise in relevant theoretical	-Aim of improving patient interaction/empathetic understanding  -Openness to reflective approaches

	<ul style="list-style-type: none"> <li>- Participants open to contemplative approaches</li> <li>- Offered as part of CPD or as part of curriculum</li> </ul>	<p>approach e.g.</p> <ul style="list-style-type: none"> <li>Motivational Interviewing,</li> <li>Cognitive Behavioural Therapy,</li> <li>Emotional Intelligence.</li> <li>- Individual readiness to change</li> </ul>	<ul style="list-style-type: none"> <li>-Not high resources, but long term commitment</li> <li>-Skilled facilitation</li> </ul>
Measurable impact	<ul style="list-style-type: none"> <li>Statistically significant reductions in stress/burnout</li> </ul>	<ul style="list-style-type: none"> <li>Improvements shown on a variety of measures</li> </ul>	<ul style="list-style-type: none"> <li>Short term impacts enhanced patient interaction</li> <li>Long term measurable changes to stress/burnout may require sustained involvement over time</li> </ul>

## Discussion

This review has identified three main types of interventions: mindfulness-type interventions, CSF approaches and/or reflective groups. These are similar to elsewhere but through greater inclusivity of evidence and a deeper delve into the workings of successful interventions and their theoretical underpinnings, we have been able to signify what is unifying in terms of the features of these interventions and their impact in terms of the value in helping to reduce harmful stress amongst doctors.<sup>12</sup>

Summarizing the implications of the evidence about successful interventions produced a practical guide to help recommend an intervention although of course such interventions will be introduced into an environment that will affect whether and how it can be implemented. Here we consider two important factors that may affect outcomes: medical specialty; and the broader health system.

Time given over to reflection and discussion is likely to be more valued in certain medical specialties - particularly where high levels of emotional attunement and empathy are required (such as mental health or general practice). The only two interventions reported that were designed for surgeons followed surgery specific mental practice techniques.<sup>31,32</sup> This reinforces the need for interventions to fit the particular medical specialty.

Mindfulness-types have a cost implication for the host organization and potentially the participant themselves. From the perspective of a cash-strapped National Health Service (NHS), this may not currently feel like a viable option. The broader health system may, at least in part, explain the predominance of United States based studies for this group of interventions. On the other hand, within the espoused medical culture of the NHS,

coping is held up as a necessary and admirable quality – coupled with the prevalent discourse around resilience.<sup>11,51</sup> Doctors may feel less stigmatized by attending CSF interventions, but this may just serve to detract attention away from the systemic causes of stress and burnout.<sup>52</sup>

Linked with this is the issue of how easy doctors may find it to admit that they are experiencing, or at risk of, harmful stress and therefore how open they are to seeking help. Kinman and Teoh<sup>53</sup> point out that for doctors, the stigma associated with mental health difficulties may mean that doctors do not wish to disclose them for fear of being judged as not coping, or may even fear sanctions or job loss. In this review, only two studies (using CSF techniques) targeted doctors known to be already suffering, or at risk of, psychological distress.<sup>34,40</sup> Both these studies recruited from outside the workplace which perhaps is an important consideration of how to reach those that may be harder to engage in workplace interventions. Other interventions were offered on a more ‘universal’ nature, or actively screened out those suffering from stress or burnout – which perhaps may inadvertently reinforce any stigma. Kinman and Teoh<sup>53</sup> point out that a culture change is necessary whereby support is offered from the start of medical training throughout the career trajectory, stigma is challenged and help-seeking encouraged. It is also important that workplace stressors are acknowledged and addressed. It may be that workplace interventions that offer inclusive recruitment techniques (such as Schwartz rounds that are open to all staff) accompanied by ‘normalizing discourses’ around the universal need for support, may contribute to such a culture change.



Limitations to our review include the fact that measures used in the studies focused on different aspects of stress including for example perceived stress, the outcomes of stress (e.g. MBI), stress and wellbeing (e.g. GHQ12). Reporting improvements in terms of reduced stress and burnout using MBI needs treating with caution as the developers of this measure define burnout only as having high scores on all 3 scales rather than one or two.<sup>54</sup> Furthermore, the studies could not all use the same type of measures as there is the issue of whether quantitative techniques exist that are suited to the measurement of the more subtle and relational benefits that may be expected from participation in reflective groups. Although evidence for some interventions may be deemed by some as ‘hierarchically stronger’, it is misleading to assume that interventions can be imported as successfully into any context. Our guidance (table 2) highlights a range of strategies and some of issues involved.

## **Conclusion**

Given the pressures that doctors are currently under and the potentially harmful stress this creates for them personally as well as for their colleagues and patients, it is timely to draw attention to possible solutions to assist with the management and prevention of this international-widespread issue. Our contribution to the field is the identification of the learning points from the literature about three main clusters of interventions and the presentation of guidance to advance the field of education in relation to the support and development of doctors. Future research could further investigate the influences of medical cultures across specialties and geographies on the utility and acceptability of particular interventions.



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