



School of Psychology

Doctorate in Clinical Psychology

Major Research Project

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This thesis (literature review and research paper) has been submitted in partial fulfilment of a Doctoral degree in Clinical Psychology
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Table of Contents

1. Literature Review

1.1 Literature Review Title Page.....	6
1.2 Abstract.....	7
1.3 Introduction.....	9
1.4 Methods.....	12
1.5 Results.....	14
1.5.1 Summary of intervention effects.....	31
1.5.2 Theoretical implications.....	33
1.5.3 Methodological issues.....	35
1.6 Conclusion.....	37
1.7 References.....	39
1.8 Appendices.....	47
1.8.1 Appendix 1: Inclusion and exclusion criteria.....	47
1.8.2 Appendix 2: Outcome measures.....	49
1.8.3 Appendix 3: Instructions for authors.....	50

2. Research Paper

2.1 Research Paper Title Page.....	56
2.2 Abstract.....	57
2.3 Introduction.....	59
2.4 Methods.....	63
2.5 Results.....	69
2.5.1 Qualitative analysis.....	70
2.5.2 Summary.....	86
2.6 Discussion.....	87
2.7 References.....	94
2.8 Appendices.....	98

2.8.1 Appendix 1: Recruitment support letter.....	98
2.8.2 Appendix 2: Participant information sheet.....	100
2.8.3 Appendix 3: Consent form.....	103
2.8.4 Appendix 4: Interview schedule & demographic questionnaire.....	104
2.8.5 Appendix 5: University ethics approval letter...	106
2.8.6 Appendix 6: NHS R&D approval letter.....	107
2.8.7 Appendix 7: Sample transcript with coding.....	109
2.8.8 Appendix 8: Dissemination statement.....	112
2.8.9 Appendix 9: Instructions for authors.....	113

List of Tables

1. Tables Included in Literature Review

1.1 Objectives of Review.....	12
1.2 Inclusion Criteria.....	12
1.3 Terms and Databases.....	13
1.4 Details of Studies.....	17
1.5 Assessment of Quality.....	28

2. Tables Included in Research Paper

2.1 Participant Demographics.....	70
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List of Figures

1. Figures Included in Literature Review

1.1 Study Selection Process.....	15
----------------------------------	----

2. Figures Included in Research Paper

2.1 Procedure of Data Collection.....	65
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2.2 Super-ordinate and Sub-ordinate Themes.....	71
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2.3 Brief Summary of Themes and Relationships.....	87
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**Reducing the impact of stress on personal and work-related health:
A systematic literature review of interventions for healthcare
professionals**

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Abstract

The literature consistently demonstrates that professionals working in demanding health services are at risk of experiencing distress that can significantly affect their wellbeing and functioning at work. The aim of this review was to investigate the effectiveness of interventions in preventing or reducing stress for health professionals. The effectiveness of interventions were evaluated by reviewing self-report outcomes (stress, burnout, general health and perceptions of the working environment) and objective outcomes (absenteeism and performance), alongside methodological rigour. PsychInfo, PubMed (MedLine) and the Cochrane Database of Systematic Reviews were searched to identify intervention studies with health professionals working in clinical health settings, where a comparison group was used to evaluate intervention effects. The review is restricted to studies published in English, in peer-reviewed journals since 1991. A total of 26 studies were included in this review. A broad range of interventions were identified, the majority being implemented with nurses or a mix of health professionals. The majority of interventions were person-directed, aimed towards improving individual symptoms of stress. Several studies implemented multi-level interventions that aimed to improve wellbeing and alter professionals' environment, skills and demands (person and organisation directed interventions). The outcomes of this review suggest that intervening at several levels is most effective for stress management and wellbeing. Maximising personal control and minimising the negative effects of stress through education and management strategies (based on theoretical approaches, e.g. CBT), problem-based learning and enhancing social support were key aspects of effective interventions. The implementation of effective, dynamic stress management interventions is warranted. The extent that these interventions reduce any

stigma attached to prioritising one's self-care is yet to be investigated. The effective implementation of interventions for professionals in highly demanding health specialties was not established here. This review highlights that interventions for high risk groups is under-represented in the literature.

Reducing the impact of stress on personal and work-related health:
A systematic literature review of interventions for healthcare professionals

Stress is particularly acute among people who work in helping professions (Siegrist et al., 2010). Distress among medical professionals is associated with poorer patient care, an increased risk of medical errors, depression, anxiety and a reduced satisfaction with life (Fahrenkopt et al., 2008; Shanafelt et al., 2010; Tyssen et al., 2009). Suicide rates for physicians are estimated to be six times higher than in the general population and cardiovascular mortality is higher than average (Wallace, Lemaire & Ghali, 2009). Burnout (characterised by emotional exhaustion, depersonalisation and reduced personal accomplishment; Awa et al., 2010) are more common among physicians than in other professions, with physicians in front-line emergency medicine services at greatest risk (Shanafelt et al., 2012).

Physicians in highly demanding contexts are dealing with difficult patient interactions, families and other professionals (Arnetz, 2001). The environment in emergency services involves uncontrolled patient volume and brief clinical encounters with patients of variable acuity. Complicated clinical decisions are made on the basis of limited information while managing competing cognitive demands and distractions (Kovacs & Croskerry, 1999). The communication load on emergency department (ED) staff is considered to be high (Kilner & Sheppard, 2010), with physicians being interrupted most among ED professionals (Berg et al., 2013). Excessive cognitive demands caused by the need to process vast amounts of information for long periods can negatively affect work quality (McMurray et al., 1997).

The stressors associated with highly demanding medical specialties are compounded by physicians' and nurses' tendency to give sub-optimal attention to their personal needs (Wallace et al., 2009), with physicians being particularly poor at seeking help from others (Arnetz, 2001). Burnout in these professions is associated with decreased workplace productivity and efficiency, partly due to high turnover of staff, interest in early retirement and less time with patients (Wetterneck et al., 2002).

Work-related stress is thought to be the response and effect of exposure to stressors at work, mediated by personal coping strategies (Cooper et al., 2001). Associations between high job-demands and work-related stress illnesses (e.g. psychiatric disorder and burnout) have been found (Tennant, 2001). Restrictions in autonomy and decision making ability are often associated with increased job dissatisfaction and stress (Sundquist & Johansson, 2008). Both organisational and personal factors should be considered together when attempting to understand stress and psychological wellbeing. Effective interventions that focus on the health and wellbeing of health professionals may see benefits at individual, organisational and public levels.

Stress management interventions have been developed using theoretical understandings of stress and coping. The premise of such interventions is based on the theoretical notion that one's resources and ability to cope mediates the stress response and are amenable to change, therefore allowing stress to be controllable. Interventions for preventing or reducing stress related ill-health and performance (e.g. psychiatric disorders, burnout, absenteeism and quality of care) can be person-directed (individual/groups), organisation-directed or a combination of both. Person-

directed interventions are usually cognitive-behavioural, aimed at enhancing personal coping skills, social support or relaxation. Organisation-directed interventions usually prioritise changes in work procedures, work evaluation and supervision. These aim to decrease job-demand, increase job control or the level of participation in decision making (Awa et al., 2010).

A number of reviews have reported the effectiveness of interventions to prevent or treat stress (DeFrank, 1987; van der Hek, 1997; van der Klink, 2001). People who take part in stress management interventions experience fewer symptoms of stress than those who do not (Lamontagne et al., 2007). Reviews have found that the level of psychological ill-health may be higher in healthcare than non-healthcare professionals (Mimura, 2003), but also that there is limited evidence available for the effectiveness of person and organisation-directed interventions to reduce stress in healthcare settings (Marine et al., 2006). Although self-rated health has been found to be a powerful predictor of morbidity and mortality (Kaplan et al., 1996; DeSalvo et al., 2006), the effectiveness of stress management interventions for healthcare workers has not yet been analysed with outcome data based on both self-reported health *and* objective measures. Individual, professional and organisation factors affect the wellbeing of health professionals; therefore a systematic review of interventions including these factors was conducted.

Objectives of review.

The objectives for the present review are displayed in Table 1.

Table 1

Objectives of Review

Objective 1	To compare the effectiveness of different kinds of interventions in preventing or reducing stress in a range of healthcare professionals
Objective 2	To evaluate the effectiveness of interventions on a range of outcomes, using self-reported and objective measures

Methods

Eligibility Criteria

Studies were eligible for inclusion for this review based on the criteria displayed in Table 2.

Table 2

Inclusion Criteria for Studies to be Included in this Review

Participants and settings	Any healthcare professionals working in a clinical healthcare setting
Interventions	The intervention implemented aimed to reduce participants' stress and/or improve their wellbeing at work
Comparator	A comparison group was utilised to evaluate intervention effects
Outcome	Outcome data was collected using self-reported measures of stress, burnout, general health and perceptions of the working environment and/or objective measures of absenteeism and performance
Design	Randomised controlled trials, cluster-randomised interventions and also study designs that allow for interventions at a group level, known as controlled before-and-after studies (otherwise known as prospective cohort studies or quasi-experimental studies)

Information Sources

The databases PsychInfo, PubMed (MedLine) and the Cochrane Database of Systematic Reviews were used to locate relevant studies. The UK Federation Access Manager was utilised to access papers using the University of Exeter access rights. Authors were contacted for papers when they were not accessible.

Search Strategy

The above sources were searched on the 4th February, 2014 using the terms displayed in Table 3.

Table 3

Terms and Databases used in Search Strategy

PsychInfo	PubMed (MedLine)	Cochrane Database of Systematic Reviews
Stress, intervention**, work**, burnout	Burnout, professional*, intervention**, stress	Stress, intervention**, burnout

*MesH terms used

** Boolean logic was used to combine groups of terms

Study Selection

Papers were excluded if they were not one of the following: a systematic review, literature review, treatment outcome/clinical trial, of randomised design, controlled before and after study or a meta-analysis. Abstracts were searched and papers were further excluded if they did not include the any of the key search terms above. Studies were selected if they met the selected eligibility criteria. Studies were excluded if they were published before 1991 due to the increase in laws and regulations for managing the causes of work-related stress in the 1990's. Studies were

excluded if they were not published in the English language and if they could not be fully accessible using the UK Access Management Federation with University of Exeter access rights or through contacting the author.

Data Collection Process

All studies that resulted from the review protocol were recorded using a data extraction sheet to assess if they were to be included against the inclusion and exclusion criteria, detailed explicitly in Appendix 1.

Results

The process of selecting studies for this review is displayed in Figure 1. This process resulted in 26 studies being included in this review.

Study Characteristics

The details of the 26 studies are displayed in Table 4.

Study designs. Several studies were classified as a randomised controlled design (11). 4 of these were randomised with a no-intervention/neutral intervention control group, 5 with a wait-list control group and 2 were cluster-randomised controlled with passive control groups. 1 study used a cohort-controlled design without randomisation, using a passive control group. The majority of studies were controlled before-and-after studies, using a control group comparison and pre-tests (14).

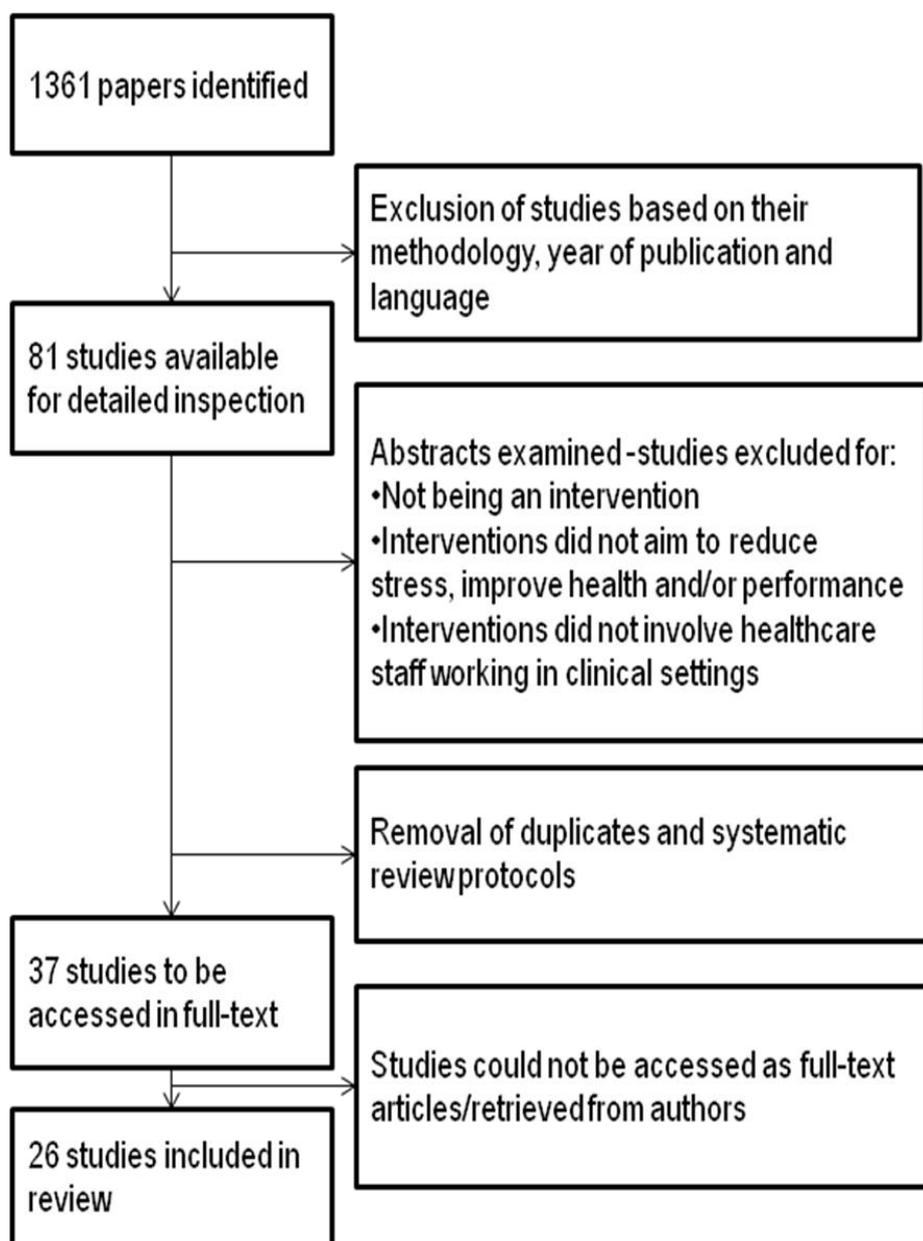


Figure 1. Study selection process.

Country and time period. The majority of studies were conducted in European healthcare settings (15), 10 studies were conducted in North America and 1 in Asia. The minority of studies published before the year 2000 (7), the majority being published after (19).

Population. The number of studies that involved a mix of hospital staff was 5. The population of 8 studies were nurses and 3 utilised student-nurse populations. Doctors were the population in 3 studies, and 1 study enrolled

student doctors. The remaining studies involved healthcare workers (2), dentists (2), social workers (1) and healthcare managers (1).

Types of measures. Validated self-report measures of stress, general and psychiatric health, burnout and the perceived working environment were utilised. Some bespoke instruments incorporating these measures were also used. Objective outcome measures included examination of exam or essay performance, sickness absence rates, and assessment of clinical performance against an established protocol before and after the intervention. Types of measured used in studies are detailed in Appendix 2.

Table 4

Details of Studies Reviewed (in ascending order of publication year)

Author (year) country	Participants	Intervention	Type of data collected	Outcome
Villani et al. (2013) Italy	30 oncology nurses	Self-help stress management training	General Health	↑*
			Perceived work environment	n/a
Brinkborg et al. (2011) Sweden	106 social workers	Training in stress management skills	Stress	↓*
			Burnout	↓*
			General health	↑*
Fillion et al. (2009) Canada	109 palliative care nurses	Professional skills education/training	Perceived work environment	↑*
			General health	ns
Milstein et al. (2009) USA	13 paediatric house officers	Training in stress management skills	Burnout	ns

Note. Increase/improvement ↑. Decrease/reduction ↓. *Significant change (p < 0.05). ns: no significant changes between groups

Table 4 (cont'd)

Details of Studies Reviewed (in ascending order of publication year)

Author (year) country	Participants	Intervention	Type of data collected	Outcome
Peterson et al. (2008) Sweden	151 health care workers	Peer support group	Burnout	ns
			General Health	↑*
			Perceived work environment	↑*
Griffith et al. (2008) USA	50 clinical hospital staff	Training in stress management skills	Stress	↓*
Jones & Johnston (2006) UK	853 student nurses	Professional skills educations/training	Stress	↓*
			General Health	↑*
			Performance	ns
			Absence	ns

Note. Increase/improvement ↑. Decrease/reduction ↓. *Significant change (p < 0.05). ns: no significant changes between groups

Table 4 (cont'd)

Details of Studies Reviewed (in ascending order of publication year)

Author (year) country	Participants	Intervention	Type of data collected	Outcome
Pryce et al. (2006) Denmark	117 nurses and health care workers	Employee directed working patterns	General health	ns
MacKenzie et al. (2006) Canada	30 nurse and nurse aides	Training in stress management skills	Burnout	↓*
Cohen-Katz et al. (2005) USA	25 nurses in pastoral care	Training in stress management skills, counselling	Burnout	↓*
Margalit et al. (2005) Israel	102 general practitioners	Professional skills education/training	General health Burnout	↑* ns

Note. Increase/improvement ↑. Decrease/reduction ↓. *Significant change ($p < 0.05$). ns: no significant changes between groups

Table 4 (cont'd)

Details of Studies Reviewed (in ascending order of publication year)

Author (year) country	Participants	Intervention	Type of data collected	Outcome
Delvaux et al. (2004) Belgium	115 nurses in cancer care	Professional skills education/training	Stress	↓*
			General health	ns
			Burnout	↓*
			Performance	↑*
Rosenzweig et al. (2003) USA	140 medical students	Training in stress management skills	General health	↑*
Ewers et al. (2002) UK	33 mental health nurses	Training in stress management skills	Burnout	↓*
Te Brake et al. (2001) Netherlands	171 dentists	Training in stress management skills, counselling	Burnout	↓*

Note. Increase/improvement ↑. Decrease/reduction ↓. *Significant change ($p < 0.05$). ns: no significant changes between groups

Table 4 (cont'd)

Details of Studies Reviewed (in ascending order of publication year)

Author (year) country	Participants	Intervention	Type of data collected	Outcome
Gorter et al. (2001) Netherlands	19 dentists	Training in stress management skills, counselling	Burnout	↓*
Jones & Johnston (2000) UK	79 student nurses	Training in stress management	Stress	↓*
			Health	↓*
			Absenteeism	ns
			Performance	ns
Lokk (2000) Sweden	26 health care managers	Training in stress management skills, specialist consultation	Stress	ns
			Perceived work environment	↑*
Rowe (1999) USA	113 health care professionals	Training in stress management skills	Burnout	↓**

Note. Increase/improvement ↑. Decrease/reduction ↓. *Significant change ($p < 0.05$). ns: no significant changes between groups

Table 4 (cont'd)

Details of studies reviewed (in ascending order of publication year)

Author (year) country	Participants	Intervention	Type of data collected	Outcome
van Dierendnock et al. (1998) NL	149 Mental health professionals	Counselling	Absence	ns
			Burnout	↓*
Weir et al. (1997) USA	164 nurse managers	Supervision	Burnout,	↓*
			Perceived work environment	↑*
			Absence	ns
			Performance	ns
Kandolin (1996) Finland	58 midwives	Employee chosen working patterns	Stress	ns
			General Health	↑*
Palsson et al. (1996) Sweden	33 district nurses	Supervision	Burnout	ns

Note. Increase/improvement ↑. Decrease/reduction ↓. *Significant change ($p < 0.05$). ns: no significant changes between groups

Table 4 (cont'd)

Details of Studies Reviewed (in ascending order of publication year)

Author (year) country	Participants	Intervention	Type of data collected	Outcome
Godbey & Courage (1994) USA	19 student nurses	Counselling	General health Performance	↑* ns
Razavi et al. (1993) Belgium	72 oncology nurses	Professional skills/education training	Stress Performance	↓* ↑*
McCue et al. (1991) USA	63 resident doctors	Training in stress management skills	Burnout	↓*

Note. Increase/improvement ↑. Decrease/reduction ↓. *Significant change ($p < 0.05$). ns: no significant changes between groups

Interventions Types

Person-directed. The majority of interventions were person-directed interventions, ranging in intervention type, length and theoretical orientation. Some studies used an intervention based on cognitive behaviour therapy (CBT); involving a combination of personal coping skills, social support or relaxation exercises (Cohen-Katz et al, 2005; Te Brake et al, 2001; Gorter et al 2001; Rowe, 1999; McCue et al, 1991). Villani et al.'s (2013) study implemented a self-help stress management intervention based on Meichenbaum's (1977, 1985) stress inoculation training (SIT). This involved developing cognitive, behavioural and emotional coping skills to change unproductive ways of responding to stress. In addition to utilising CBT techniques, the SIT devoted time to applying the learnt techniques to promote self-efficacy. One study's intervention developed self-administration skills of the psychotherapeutic BATHE tool (a rough screening test for anxiety, depression, and situational stress disorders; Milstein, 2009) This asked student doctors to reflect on their background issues, affect and most troubling problems during times of distress. One study used an adapted counselling model of crisis intervention and implemented a 6-week counselling programme (Godbey & Courage, 1994); this focused on assessing the situation, using problem solving skills, promoting self-reliance and self-efficacy in participants' coping skills.

Some studies used interventions based on Acceptance and Commitment Therapy (ACT) or mindfulness-based stress reduction (MBSR), to enhance psychological flexibility through ACT's core principles, e.g. acceptance and committed action (Brinkborg et al, 2011; MacKenzie et al 2006; Rosenzweig et al 2003). An intervention based on Qigong was

implemented in one study (Griffith et al, 2008) which involved 8 physical exercises to promote the flow of vital energy and synchronise one's breathing. One study implemented a psychosocial intervention based on Equity Theory (van Dierendnock et al, 1998), using cognitive restructuring to reduce feelings of inequity resulting from a discrepancy between goals and expectations between recipients and organisations.

Organisation-directed. The minority of studies were implemented at an organisational level, aiming to improve the working environment, skills and demands placed on healthcare professionals. Two studies aimed to increase employee participation and increase choice over their work by implementing employee self-scheduling of hours or an open-rota system (Kandolin, 1996; Pryce et al, 2006 respectively). Another study provided 3 full-day workshops for managers to support them with participative decision making with their healthcare employees (Weir et al, 1997). Another study provided consultation or advice through a CBT group for managers (Lokk, 2000). One organisational intervention implemented a psychosocial skills training intervention for healthcare staff (Ewers et al, 2002).

Organisation and person-directed interventions. Several studies implemented interventions aimed to improve employees' wellbeing and alter their environment or ways of working. Some interventions taught skills using process-orientated, interactive psychosocial approach or problem-focussed teaching (Fillion et al, 2009; Jones & Johnston, 2006; Margalit et al, 2005 respectively). These were compared to traditional or more didactic teaching of clinical skills. Another study adopted a problem-based learning approach (Peterson et al., 2008), using a peer-support group. Palsson et al, (1996) implemented professional-skills training in supervision for district nurses.

Psychological Training Programmes (PTP) was implemented in three studies, but with different durations (Jones and Johnston, 2000; Delvaux et al, 2004; Razavi et al, 1993). These focussed on giving nurses psychosocial skills, as well as communication and organisational skills to implement in their work.

Assessing Risk of Bias and Study Quality

The first author independently assessed the potential risk of bias of included studies. Published systematic reviews of preventative interventions for healthcare professionals have used the Cochrane Effective Practice and Organisation of Care (EPOC; van Wyk & van Wyk, 2010) criteria for randomised control trials to assess risk of bias. Using similar criteria would be inappropriate here due to the variable study designs. This review used a bespoke method of assessing against selection and detection bias; evaluating if participants were randomised to control groups, if the number of participants included in the study was equal to or greater than 80, whether studies conducted short-term (1-6 months), medium-term (7-12 months) and long-term (13 months or more) follow-up measures and if the intervention was explicitly underpinned by theoretically-informed hypothesis. In general, the reported sample sizes in trials is small; a cohort of trials (n=616) indexed in PubMed in 2006, found the median number of patients recruited for parallel group trials was 80 (Moher et al., 2010). Therefore this number was used to evaluate whether studies used a similar number of participants as found in commonly published trials. Explicit reference to theory allows assessment to be made of whether all the necessary elements of a programme are included. In evaluation studies, this type of analysis can be done to identify type III errors, the rejection of the effectiveness of a programme, when the programme itself was inadequate in terms of design or delivery (Green, 2000). Studies that fail

to tie their hypotheses, design and outcomes to a theoretical basis, limit their ability to be explanatory and predictive. Table 5 describes whether a study met all, most, some or none of the quality assessment criteria described above.

Table 5

Assessment of Quality in Included Studies

Author, year	Randomisation of participants	Sample size = or > 80	Follow-up*	Strongly theoretically informed intervention	Amount of criteria met
Villani et al., 2013	✓	✗	✗	✓	Some
Brinkborg et al., 2011	✓	✓	✗	✓	Most
Fillion et al., 2009	✓	✓	✓	✓	All
Milstein et al., 2009	✓	✓	✗	✓	Most
Peterson et al., 2008	✓	✓	✓ ✓	✓	All
Griffith et al., 2008	✓	✗	✗	✓	Some
Jones and Johnston, 2006	✗	✓	✗	✓	Some
Pryce et al., 2006	✓	✓	✓ ✓ ✓	✗	Most
MacKenzie et al., 2006	✓	✗	✗	✓	Some
Cohen-Katz et al., 2005	✓	✗	✗	✓	Some
Margalit et al., 2005	✗	✓	✗	✓	Some

* ✓ = short-term follow-up, ✓ ✓ = medium term follow-up, ✓ ✓ ✓ = long-term follow-up

Table 5 (cont'd)

Assessment of Quality in Included Studies

Author, year	Randomisation of participants	Sample size = or > 80	Follow-up*	Strongly theoretically informed intervention	Amount of criteria met
Delvaux et al., 2004	✓	✓	✓	✗	Most
Rosenzweig et al., 2003	✗	✓	✗	✓	Some
Ewers et al., 2003	✓	✗	✗	✗	Some
Te Brake et al., 2001	✗	✓	✓ ✓	✗	Some
Gorter et al., 2001	✗	✗	✗	✓	Some
Jones and Johnston, 2000	✓	✗	✓	✓	Most
Lokk, 2000	✓	✗	✗	✗	Some
Rowe, 1999	✓	✓	✓ ✓ ✓	✓	All
Van Dierendnock et al., 1998	✗	✓	✓ ✓	✓	Most

* ✓ = short-term follow-up, ✓ ✓ = medium term follow-up, ✓ ✓ ✓ = long-term follow-up

Table 5 (cont'd)

Assessment of Quality in Included Studies

Author, year	Randomisation of participants	Sample size = or > 80	Follow-up*	Strongly theoretically informed intervention	Amount of criteria met
Weir et al, 1997	✓	✓	✗	✗	Some
Kandolin, 1996	✗	✗	✓	✓	Some
Palsson et al., 1996	✗	✗	✓ ✓ ✓	✓	Some
Godbey & Courage, 1994	✗	✗	✓ ✓ ✓	✓	Some
Razavi et al., 1993	✗	✗	✓	✗	Some
McCue et al., 1991	✗	✗	✗	✗	None

* ✓ = short-term follow-up, ✓ ✓ = medium term follow-up, ✓ ✓ ✓ = long-term follow-up

Summary of Intervention Effects

Stress, burnout, general health and psychological wellbeing.

Several studies measuring stress had a significant positive effect following interventions. These studies involved training in stress management at a person-directed level (Villani et al, 2013, Brinkborg et al 2011; Griffith et al, 2008; and Jones & Johnston, 2000) or training in professional skills at an organisation directed level (Jones and Johnston 2006, Delvaux et al 2004; Razavi et al, 1993). Several studies measuring burnout found significant positive effects following intervention; 8 of which were person-directed interventions offering training in stress management skills or in combination of with counselling (Brinkborg et al, 2011; MacKenzie et al, 2006; Cohen-Katz et al, 2005; Te Brake et al 2001; Gorter et al, 2001; Rowe, 1999; van Dierendnock et al, 1998; McCue et al, 1991). One study involved both organisation and person directed interventions, using professional skills training (Delvaux et al, 2004), and two studies involved organisation-directed intervention through the use of offering consultation workshops or psychosocial training (Weir et al, 1997; Ewers et al, 2002).

Several studies measuring the general health and psychological wellbeing of participants showed positive improvements following intervention. Half of these were both person and organisation directed interventions, involving professional skills training, peer support or training in stress management (Peterson, et al, 2008; Jones & Johnston, 2006; Jones & Johnston, 2000; Margalit et al, 2005). The remaining interventions were person-directed involving training in stress management or counselling (Villani et al, 2013; Brinkborg et al, 2011; Rosenzweig et al, 2003; Godbey &

Courage, 1994), and one study was organisation-directed (Kandolin, 1996) allowing employees to have choice regarding their work patterns.

Health professionals' perspective of the workplace environment and performance. Some studies reported significant improvements in healthcare professionals' perception of their environment following intervention, half of these being organisation-only interventions (Lokk, 2000; Weir et al, 1997) and the other being a combination of both interventions (Fillion et al, 2009; Peterson et al. 2008). Some studies reported significant improvement in the performance of healthcare workers following an intervention that was person and organisation-directed, using professional skills training (Delvaux et al, 2004; Razavi et al, 1993). Measuring employee wellbeing objectively through sickness absence or examination performance did not reveal any positive intervention effects (Jones & Johnston 2006; Jones & Johnston 2000; Godbey & Courage, 1994; Weir et al, 1997; Jones & Johnston, 2006; Jones & Johnston, 2000; van Dierendnock et al, 1998).

Intervention effects over time. 12 studies reported measuring outcomes at one or more follow-up time points (Table 5). Rowe (1999) found that healthcare workers who participated in a 6-week stress management programme experienced temporary decreases in burnout, while those who received 1-hour coping "refresher" sessions at 5 months, 11 months, and 17 months showed consistent decreases in burnout throughout a 2 1/2 year period. van der Dierendnock et al (1998) found that burnout significantly decreased for mental health professionals following their counselling intervention; this effect was also found at 6 month and 12 months for those healthcare workers who used social support. Godbey & Courage (1994) found significant reductions in trait anxiety, depression and improvement in self-

esteem, which were stable over time for the intervention group. Peterson et al (2008) found significant improvements at 12 month follow-up for their peer-support group intervention, showing: increased perceived general health and reduced perceived work demands, increased perceived participation and development opportunities at work and support. For Jones & Johnston (2000), stress was only significantly decreased in the short-term following their training in stress management intervention, but reduced state and trait anxiety levels were maintained at 3 month follow-up. Although a PTP significantly improved stress and performance in Razavi et al.'s (1993) study, it was Delvaux et al (2004) who found that these intervention effects can be maintained at 3 month-follow up, in addition to significant effects on general health for healthcare professionals, if they are enrolled in a more intensive PTP. Kandolin's (1996) significant improvement on general health (tiredness) following the organisation-directed intervention was maintained at 6 month follow-up.

Theoretical Implications

The experience of occupational stress is modelled on demand-control, effort-reward and demand-resource imbalances at work. Personal stress models emphasise the perception of coping; when pressure exceeds one's perceived ability to cope. The findings from this review support these models; a number of beneficial personal and work-related outcomes were directly linked to changing the demands and resources from personal and occupational perspectives. Person-directed interventions based on CBT, ACT, SIT or Equity theory showed improvements in the experience of stress and symptoms of burnout; these interventions were strongly linked to personal stress models. Theoretically, these interventions promoted skills in cognitive

restructuring and psychological flexibility to enhance participants' perceived coping abilities. Interventions that were directed at both the person and organisation through professional skills training, peer-support and increased control over time management, were most effective in improving general health and wellbeing. In addition to enhancing one's perception of being able to cope, these interventions enhanced job resources organisationally. Interventions directed at the organisational level were less explicitly linked to theoretical constructs, such as demand-control, effort-reward and demand-resources imbalances, than the person-directed aspects of interventions.

When one's resources are supported in conjunction with healthy cognitive appraisals, the resulting effect can be fewer perceived demands, increased perceived efforts at work and improved wellbeing along a number of dimensions. Studies that showed positive intervention effects at two levels, the personal wellbeing of participants and performance at work, were person and organisation-directed (Razavi et al, 1993; Delvaux et al, 2004). These interventions supported job resources through enhancing social support, enhancing control and motivation through self-directed learning and personal coping through psychological training. How job demands, resources and cognitive skills theoretically relate to outcomes, such as absenteeism and general performance, have not been clarified by the studies reviewed.

Knowledge alone of adaptive coping behaviours may not lead to the adoption of effective stress management behaviours. One study reviewed here linked problem-based learning to an increase in control and motivation to implement teachings from the intervention into their working lives (Peterson et al, 2008). Enhancing the self-efficacy of healthcare workers may allow the benefits of increased job resources and psychological flexibility to translate

into behaviour change, resulting in increased productivity in the healthcare setting. The inclusion of this social-cognitive construct could be an additional cognitive mediator in the relationship between job resources and managing job demands. Research has shown that health professionals are less good at tending to their own wellness needs; therefore they may fear alienation for adopting self-care behaviours and attitudes. The extent that interventions may have seen significant results through de-stigmatizing engaging in psychological support was not reviewed here, but deserves investigation because of the unique relevance to healthcare professionals.

Methodological Issues

Research on work-related stress symptoms and outcomes has taken place world-wide. Different countries operate different healthcare systems which limits generalising some findings. Measurement tools for assessing stress outcomes must be evaluated in terms of validity and reliability. All studies that measured stress used some form of validated measure, although these differed between studies. When measuring burnout, perceived work-environment and general health, some studies used bespoke instruments despite the availability of validated measures. Variety also existed within validated measures and together these issues make it difficult to directly compare findings between studies.

The effectiveness of stress management programmes depends on whether the programme is aimed towards prevention or treatment. In this review, 6 studies used participants that self-reported significant levels of stress (Villani et al, 2013; Brinkborg et al, 2011; Te Brake et al, 2001; Gorter et al, 2001; Godbey & Courage, 1994; Jones & Johnston, 2000). Findings from this review suggest that individuals with different levels of stress respond

differently to interventions, showing a positive effect for those who need it most. These findings could be explained by pre-assessment scores, with less-stressed participants having little room to show improvement. It could also suggest that individuals with low stress already implement effective coping skills. Clarification of these findings could lead to useful organisational applications, such as screening staff stress levels to offer interventions to those who need it most.

The effectiveness of stress management programmes then depends on the accuracy of initial diagnosis of the targeted stress symptom. If targeting stress or burnout, than either person-directed or a combination of organisation and person directed interventions are likely to produce positive outcomes. In attempts to improve general health, any level of intervention can be effective on symptoms of anxiety and physical health (e.g. tiredness). Organisation-directed only or both person and organisation-directed interventions appeared to have the biggest impact on health professionals' perspective of the workplace environment and performance. These findings suggest that common measurement approaches would enable participants to be compared more easily across the studies evaluated here.

Small sample sizes tend to increase the probability of obtaining a markedly non-representative sample (LoBiondo-Wood & Haber, 2006). It is possible to estimate the sample size needed with the statistical procedure power analysis, but it was unclear if this procedure was implemented in the reviewed studies. A failure to detect a significant effect in the reviewed studies may be due to inadequate sample sizes, rather than incorrect hypothesis (Burns & Groves, 2001). It is difficult to compare the results of studies that evaluated different intervention -types, were informed by different theoretical

approaches, and ranged in duration of intervention and length of follow-up. Inherent with studying this population, participants are also likely to leave their workplace during implementation of intervention or when follow-up measures are collected. These methodological issues give rise to problems of generalisability and rigour.

Conclusion

The aim of this review was to compare the effectiveness of interventions in preventing or reducing stress in healthcare professionals, using self-report and objective measures. Most stress management interventions are directed at the individual level. These interventions were more likely to show significant effects on stress and burnout than interventions based solely at an organisational level. However, stress management interventions that are implemented at both organisational and person-directed level show a strong level of quality and effectiveness in improving general health, perceptions of the work environment and performance as assessed here.

Interventions that involved problem-based and process orientated adaptive coping strategies, emphasised and promoted peer support, incorporated CBT and relaxation skills and included follow-up sessions on psychological training showed significant improvements in stress outcomes for healthcare professionals. Effective stress management interventions that were person-directed implemented interventions based on: mindfulness or ACT, developing self-efficacy, adapting cognitive appraisal using cognitive restructuring or reducing perceptions of inequity between the organisation and patient, enhancing personal coping skills, social support or different kinds of relaxation exercises. The only effective component of organisation only-

directed interventions in this review was allowing healthcare professionals to have more control over their working hours. It is difficult to determine what the active components of these interventions were. Direct treatment comparisons between different stress management interventions could clarify the effective theoretical components of these interventions. The combination of an organisational and individual approach may be reducing stigma associated with stress management for healthcare professionals in highly demanding professions and deserves further investigation.

There is a demand for low cost, efficient, stigma-reducing stress management interventions, especially in highly demanding medical specialties (Litz et al., 2007). This review highlights that interventions for high risk groups, e.g. emergency medicine (EM) physicians is under-represented in the literature.

This studies included here conclude that the most effective way of managing stress is through intervention at several levels; preventing problems occurring in the workplace by maximising personal control, minimising the negative effects of stress through education and management strategies using the theoretical applications of CBT, ACT, Equity Theory problem-based learning and social support. Individuals who are experiencing the effects of stress should be supported by interventions using these strategies, delivered using a refresher or follow-up session design. Research suggests the benefits of prioritising the wellness of healthcare professionals will be systemic; improving individual satisfaction and reducing burnout, organisationally improving recruitment and efficiency issues, and publicly improving care-quality and satisfaction.

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Appendix 1

Detailed methodology of inclusion and exclusion criteria

Types of participants and settings
Included studies were evaluations of interventions directed at workers who may or may not have actively sought help for conditions such as burnout, depression or anxiety disorder. Included interventions were directed at healthcare workers officially employed in any healthcare setting, including management, or student nurses or physicians in training who were also working clinically. This excluded studies in which the participants were caregivers and were not employed by a healthcare organisation.

Types of interventions
Any intervention aimed at preventing or reducing stress arising from work was included. Studies that used non-intervention controls and/or one or more alternative intervention control groups were included. Interventions were categorised into two groups; studies were included if they fell into one or both of the categories below.
Person-directed interventions: Aimed at teaching personal skills, techniques or remedies to decrease the effects of stressors at the individual level
Organisation-directed interventions: Directed towards work tasks or working methods, containing measures to change the working environment

Types of outcome measures

Self-reported outcome measures: All validated and bespoke self-reported questionnaires using elements of validated instruments that measured stress, general and psychiatric health, burnout, and perceptions of workplace environment were included.

Objective outcome measures: All outcome measures that could be collected objectively were included if they measured employee absence, work performance measured by observers, and academic performance for students. Other outcomes that did not measure stress or its effects on individuals were excluded, such as coping skills, attitude change and patient satisfaction.

Appendix 2

Table A1

Types of outcome measures used in included studies.

Construct	Person-directed Intervention	Organisation-directed Intervention	Both
Stress	Perceived Stress Scale (PSS)	Dergalis Stress Profile	Student Nurse Stress Scale; Nursing Stress Scale
General Health	General Health Questionnaire (GHQ-12); Profile of Mood States; State Trait Anxiety Inventory (STAI); Brief Coping Orientation to Problems Experienced (COPE)	Behavioural, Cognitive and Somatic Symptoms; Global Self-reported Health; Bespoke work-related strain; GHQ-30	General Satisfaction Survey; Hospital and Anxiety Scale, Short-form Health Survey, GHQ-30, Quality of Life Questionnaire C-30.
Burnout	Maslach Burnout Inventory (MBI)	MBI, Bespoke burnout	MBI, Oldenburg Burnout Inventory
Perceived-work environment	Job Content Questionnaire (JCQ)	Nordic Questionnaire for Psychological and Social Factors at work, Copenhagen Psychosocial Questionnaire, Bespoke Psychosocial Questionnaire	Benefit Finding Instrument
Performance			Exam performance, essay performance, sickness absence, recorded performance of work task

Appendix 3

Instructions for Authors: International Journal of Occupational Medicine and Environmental Health

The *International Journal of Occupational Medicine and Environmental Health* publishes in English editorials, original contributions, communications on occupational and environmental health policy, review papers, discussion papers, instructive case reports, letters to the Editor and book reviews. Special preference is given to papers concerning industrial hygiene, preventive medicine, diagnosis and treatment of occupational diseases, physiology and psychology of work, toxicological research, environmental toxicology, environmental epidemiology and epidemiological studies devoted to occupational problems. Manuscripts must be original and previously unpublished. Only manuscripts written in correct English will be accepted. The authors should submit to the Editorial Office the original typescript and figures along with the editable electronic copy (the tables and figures should also be editable). They should be typed in double-spacing on one side of A4. All pages should be numbered consecutively in the right upper corner including references, tables and figure legends. The manuscript can be mailed to the Publishing Office (with attached disk): Nofer Institute of Occupational Medicine, Editorial Office, św. Teresy 8, 91-349 Łódź, Poland or e-mailed: ijomeh@imp.lodz.pl.

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Arrangement of the manuscript

Title page: It should be typed on a separate sheet and include the title of the paper (concise, but informative), the author(s)' name(s) and the complete name(s) and address(es) of the institution(s) where the work was performed (indicating by superscript number which address relates to which author), a running title of not more than 50 characters, including spaces, and no more than 6 key words. If the author's present address differs from that at which the work was carried out, it should be given as a footnote and indicated at the appropriate place by superscript letter. The name, university degree, forwarding address, e-mail, telephone, and fax number of the author to whom correspondence and reprint requests are to be sent should be included on the title page. The number and title of the project under which the study has been carried out should also be given as a footnote. Since the review process is anonymous, contributors are requested to submit two reviewers' copies with the title page containing only the work's title.

Abstract: Each paper must be preceded by a comprehensive structured abstract of no more than 300 words, consists of four sections: Objectives, Materials and Methods, Results, Conclusions. The abstract of a review paper should contain 250 words, without divisions into sections. Polish authors are asked to attach a Polish version of the abstract.

Introduction: It should give a clear, concise account of the background of the problem and the rationale behind the investigation. Only references with a direct bearing on the work submitted should be cited.

Materials and Methods: This chapter should be detailed in length so as to give the reader a clear idea of what has been done. Drugs, chemicals etc. should be named fully, together with their sources of supply. A chemical's full name should precede its trade, common-usage name, or its abbreviation. Non-metrical measurements units, if used during the investigation, must be accompanied by their metric (SI) equivalents. Sub-sections should be used wherever possible.

Ethics: When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 1983. Do not use patients' names, initials, or hospital numbers, especially in illustrative material. When reporting experiments on animals, indicate whether the institution's or a national research council's guide for, or any national law on the care and use of laboratory animals was followed.

Statistics: Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify the reported results. When possible, quantify findings and present them with appropriate indicators of measurement error or uncertainty (such as confidence intervals). Avoid relying solely on statistical hypothesis testing, such as the use of P values, which fails to convey important quantitative information.

Results: These should be presented in logical sequence in the text, tables, and figures. Do not repeat in the text all data given in tables or figures; emphasize or summarize only important observations.

Discussion: Emphasize the new and important aspects of the study and a comprehensive interpretation of the results obtained against the background of existing knowledge. Quotations should be restricted to those with immediate relevance to the author's findings. A review-like approach should be avoided.

Acknowledgements: These should be placed directly after the Discussion section. One or more statements should specify (a) contributions that need acknowledging but do not justify authorship, such as general support by a departmental chair; (b) acknowledgements of technical help; (c) acknowledgements of financial and material support, which should specify the nature of the support; and (d) relationships that may pose a conflict of interest.

References: These should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by Arabic numerals in square parentheses. References cited only in tables or in legends to figures should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure. Use the style of the examples below, which are based on the formats used by the US National Library of Medicine (NLM) in Index Medicus. The titles of journals should be abbreviated according to the style used in Index Medicus. If the article/book has DOI number, it should be included in the references.

- Standard journal article

Śliwiska-Kowalska M. *Exposure to organic solvent mixture and hearing loss: Literature overview*. Int J Occup Med Environ Health 2007;20(4):309–14. DOI 10.2478/v10001-007-0032-2.

If more than six authors:

Jędrychowski W, Pac A, Choi H, Jacek R, Sochacka-Tatara E, Dumyahn TS, et al. *Personal exposure to fine particles and benzo[a]pyrene. Relation with indoor and outdoor concentrations of these pollutants in Kraków*. Int J Occup Med Environ Health 2007;20(4):339–48. DOI 10.2478/v10001-007-0035-z.

- Article not in English (The title should be translated to English, and language of the original version should be given in square brackets after the page numbers)

Wesołowski W, Czernski B. *Exposure to organic solvent vapors in the production of lacquers*. Med Pr 1992;2:129–35 [in Polish].

- Books and chapter in a book

Philips SJ, Whisnant JP. *Hypertension and stroke*. In: Laragh JH, Brenner BM, editors. *Hypertension: Pathophysiology, Diagnosis, and Management*. 2nd ed. New York: Raven Press; 1995. p. 465–78.

- Conference proceedings

Kimura J, Shibasaki H, editors. *Recent advances in clinical neurophysiology*. Proceedings of the 10th International Congress of EMG and Clinical Neurophysiology; 1995 Oct 15–19; Kyoto, Japan. Amsterdam: Elsevier; 1996.

- Journal article in electronic format

Morse SS. *Factors in the emergence of infectious diseases*. Emerg Infect Dis (serial online) 1995 Jan–Mar (cited 1996 June 5). Available from: <http://www.cdc.gov/ncidod/EID/eid.htm>.

Tables: Should be typed on separate pages and numbered with Arabic numerals. They should be self-explanatory without reference to the text.

Figures: Should be numbered with Arabic numerals. Each figure should have a label pasted on its back indicating the number of the figure, author's name, the running title of the paper, and top of the figure. The brief but descriptive legends to figures should be typed in sequence on a separate sheet; they should make the figures comprehensible without reference to the text.

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The Psychological Health of Emergency Medicine Consultants

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Abstract

Objective—To explore the experience of psychological distress and wellbeing in emergency medicine (EM) consultants.

Methods— A qualitative, Interpretative Phenomenological Analysis (IPA) study based on interviews with EM consultants working in emergency departments (EDs) across South West England. 18 EM consultants were interviewed, representing a response rate of 54.55% across 5 EDs. The mean (SD) age of participants was 43.17 (5.8) years. All participants worked full-time as EM consultants, with the average years-in-role being 7.64 (5.76). The personal meanings that participants attached to their experiences were inductively analysed and explored alongside their perceived psychological health.

Results— The analysis formed three super-ordinate themes: systemic pressures, physical and mental strain, and managing the challenges. Pressures within the ED and healthcare system contributed to participants feeling undervalued and unsatisfied when working in an increasingly uncontrollable environment. Participants described working intensely to meet systemic demands, which inadvertently contributed to a diminishing sense of achievement and self-worth. Consultants perceived their experience of physical and emotional strain as unsustainable, as it negatively impacted: functioning at work, relationships, personal wellbeing and the EM profession. Sustainability was promoted by the presence of social support and through evolving with the consultant role.

Conclusions— EM consultants experience considerable physical and mental strain. This strain is dynamically related to consultants' experiences of

diminishing self-worth and satisfaction, alongside current socio-political demands on EM services. Recognising the psychological experience and needs of EM consultants through promoting a sustainable EM consultant role could have wide-reaching benefits for the delivery of emergency care.

The Psychological Health of Emergency Medicine Consultants

Emergency departments (ED) in the National Health Service (NHS) have dominated recent media headlines due to the increased pressure on services across the UK. EDs are facing their biggest challenge in coping with unsustainable workloads and insufficient numbers of senior Emergency Medicine (EM) physicians required for the delivery of consistent, quality care (College of Emergency Medicine (CEM), 2013). Rates of emergency department attendance continue to rise annually by 3-5% and on average 8% of EM consultant posts are vacant (CEM, 2013). These figures represent significant clinical and financial risk implications for the NHS. Growing workloads in EDs are contributing to intolerable working environments for senior physicians, who are experiencing significant strain in being able to meet senior staffing level standards. This strain and burden has an additional impact on physicians training in the ED, contributing to negative experiences and influencing their upcoming career choices and subsequently the future of the specialty (Shanafelt et al., 2012).

Psychological distress among physicians in highly demanding specialties is well documented and carries significant risks to patient care, organisational health and individual mental-health. Emergency physicians, but not other ED staff, have been found to be at increased risk of psychological distress (Yates et al, 2012). A concerning finding is the high level of psychological distress reported among ED consultants; over 44% of ED consultants reported GHQ-12 scores indicative of possible psychiatric caseness, levels of depression were found in 18% and almost 1 in 10 reported

suicidal ideation (Burbeck et al, 2002). This proportion of possible psychiatric caseness compares with 17.8% found within the general population and 21-27% for consultants in other specialties (Blenkin, Deary, Sadler & Agius, 1995; Ramirez, Graham, Richards, Cull & Gregory, 1996).

Attempts to explain these phenomena have concluded that untreated or inadequately treated depression, coupled with knowledge and access to lethal means (Gagné, Moamai & Bourget, 2011), increase physicians' risk of psychological distress and suicide. Historically, individual factors associated with higher levels of stress and depression among EM physicians includes gender, marital status and level of training (Whitley et al., 1989). More recently, contributing factors to poor EM physician wellbeing are thought to be high patient loads, high patient mortality, peer competition, long hours and sleep deprivation (Houry, Shockley & Markovchick, 2000). Poor psychological health for EM physicians has been indicated by a lack of perceived social support (Yates et al., 2012). Clinical indicators of burnout in physicians can include work-life conflicts, poor teamwork and the perceptions of effort-reward imbalances; subsequently burnout and low-quality teamwork can be significantly associated with intent to leave the profession (Estryn-Behar et al., 2010).

The role of an EM consultant is to provide significant 'shop-floor' presence and maintain safety in the ED. Using limited resources, consultants are expected to provide significant 'out-of-hours' support. They offer managerial support of EDs during busier times, highly skilled supervision of junior staff and protected training time (Academy of Medical Royal Colleges, 2012). The EM speciality is evolving in the UK and as a result EM consultants

face particular challenges: unpredictable workloads, high patient attendances, repeated exposure to traumatic events, potentially violent situations, target-driven practices and penalties, repeated interruptions and critical decision making often based on incomplete information (Paltved & Musaeus, 2012). Gallery et al. (1992) found that when they surveyed EM physicians, 12.4% indicated they were likely to leave the specialty within one year and 26.7% planned on leaving within five years. The NHS and government have been asked to urgently focus on, and commit to, the creation of consistent, safe and sustainable working patterns for consultants in EM (CEM, 2013).

Research has indicated that EM consultants are at an increased risk of experiencing clinical levels of psychological ill-health with detrimental effects when compared to other EM nurses and doctors, consultants in other specialities and the general population. In order to improve this group's wellbeing, maintain high quality patient care and career longevity a detailed understanding is needed concerning how EM consultants are experiencing their role and working environment and how it relates to their experience of stress. A review of qualitative studies examining the complex medical and social environment experienced by ED physicians resulted in four main themes emerging: education and training, communication, professional roles and organisational factors (Paltved & Museus, 2012). Of the 46 studies included in this review, only one study explored what ED staff perceived the stressors of the workplace to be, with the aim of improving ED team functioning (Flowerdew et al. (2011). No studies included in this review aimed to investigate or improve individuals' psychological wellbeing directly (e.g. anxiety, depression, burnout). Flowerdew et al. (2011) found that excessive

workload and staff shortages were key stressors for ED staff, with leadership being the principle component of team-functioning and training. This study was based on the views of consultants, registrars, junior doctors and nurses within the ED. Therefore the individual experiences of specific professional groups within the ED could not be established in detail. The impact of identified stressors on psychological wellbeing is yet to be investigated and therefore the risks these stressors represent to EM professionals remain poorly understood.

The heightened risk of psychological ill-health for EM consultants is well-established, but the extent to which this knowledge can be used to support individuals, and the speciality, during this current crisis is limited. The processes which relate stressors to psychological ill-health have not been consistently identified for this group. Improvements cannot be effectively driven until the processes by which stress for EM consultants elicits its detrimental effects are identified. Thus far, the literature has tended to overlook the lived experience of psychological ill-health and coping with stress in EM consultants, a population that is most at risk within the ED and possibly most able to explain the mechanisms behind these increased risks. There is a need to move beyond description of the ED experience and develop an emphasis on concepts, theories and individual experiences. Such an enquiry could help inform practice, enhance patient safety, and improve sustainability and continuity of care by conceptualising EM as being dynamically related to senior physicians' wellbeing. Such in-depth understanding hopes to equip EM consultants and stakeholders with meaningful details concerning

psychological wellbeing. Therefore, the following questions need further clarification:

1. How healthy do EM consultants perceive their psychological health and wellbeing to be?
2. What challenges does their role present for their psychological health?
3. How do they cope with these challenges and what is the impact of these coping responses?

A qualitative study is proposed to explore the experience of psychological stress for EM consultants, particularly how they make sense of their personal and social world, through the meanings they give particular stressful experiences, events, and states.

Methods

Design

An inductive, contextual qualitative research design based on Interpretative Phenomenological Analysis (IPA; Smith, 1996) was employed. Semi-structured interviews were used to collect data on the lived experiences of EM consultants regarding their experiences of stress and psychological wellbeing.

Participants

Physicians working at consultant level in EDs across the Southwest (UK) region were invited to take part in the semi-structured interviews using purposive sampling techniques. Of the 19 Type 1 EDs¹ in this area, 5 EDs were chosen to recruit participants from due to the availability of a field

¹A consultant led 24-hour service with full resuscitation facilities and designated accommodation for the reception of emergency patients.

collaborator to support recruitment, homogeneity of the sites (e.g. EDs with less than 100,000 attendances per annum) and practical considerations of research time. The estimated total patient attendances per annum (for the year 2011) across the 5 sites were 321,000; the average attendance per site being 64,000 (minimum 42,000 and maximum 90,000). The estimated total number of whole-time equivalent (WTE) consultants in post at this time was 33, the average number of WTE consultants per site being 7 (minimum 3 and maximum 9). A total of 18 EM consultants were interviewed, representing a participant response rate of 54.55% and a sample size that substantially meets the criteria for IPA research (Brocki & Wearden, 2006).

Procedure

The procedure for data collection is detailed in Figure 1. Study information was distributed by Lead Consultants across the ED sites (see Appendix 1). For those participants wishing to take part, participant information was distributed (see Appendix 2) and an interview time arranged directly with the researcher. Informed consent was obtained for all 18 participants (see Appendix 3). The recruitment procedure was developed following consultation with lead consultants of two EDs in the Southwest region (field collaborators for this project). Demographic information was also collected to gather a descriptive picture of participants².

Piloting the data collection (interview schedule and demographic information) was conducted with two EM consultants from this area. This data

² Originally a mixed-methods design was proposed. This information is included in the recruitment/participant information sheets and quantitative data was originally collected. Due to the small quantitative comparator sample that was recruited, this information was discarded and only the qualitative part of the study alongside demographic information will be reported here.

was included in this study as the interview schedule and demographic questionnaire did not change following these pilots. Obtaining consent, completion of the demographic questionnaire and interviews were conducted in a private room at the consultants' ED, maintaining confidentiality. All interviews (including pilot interviews) were conducted by the first author.

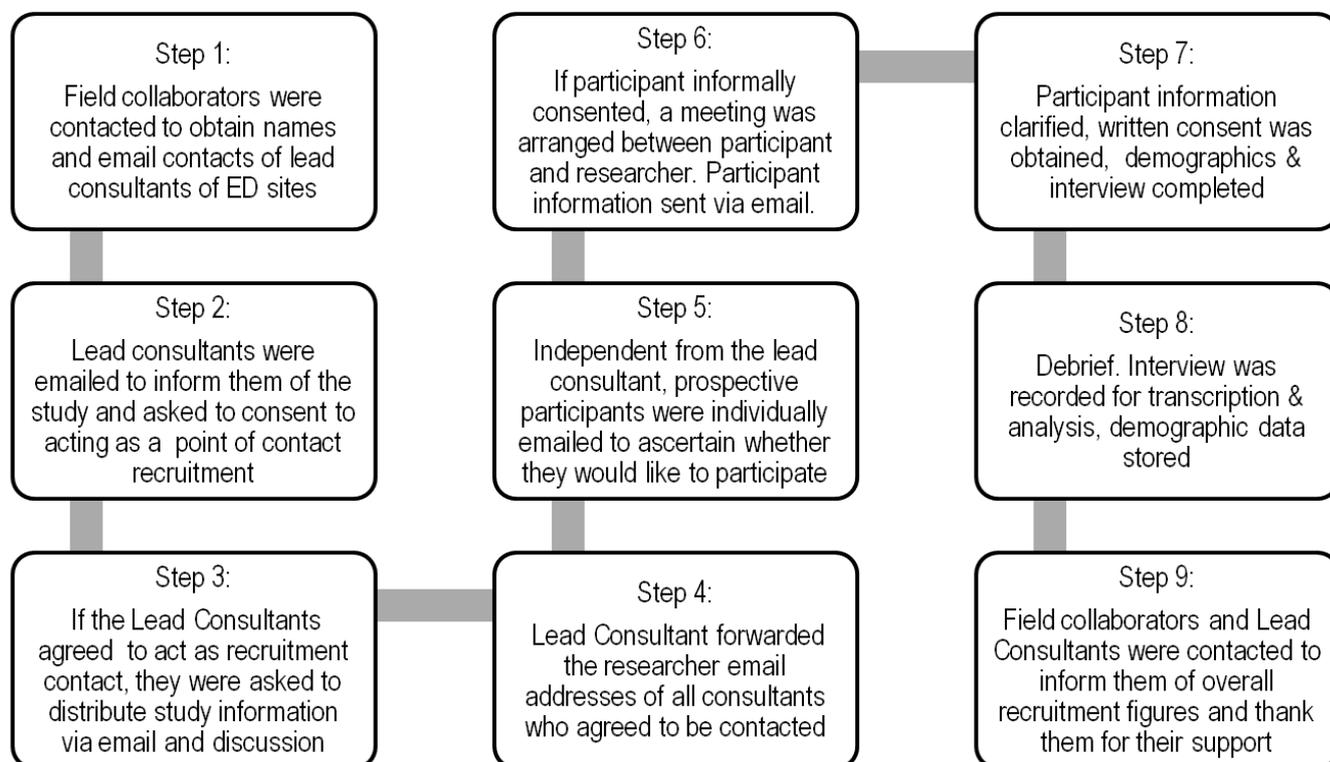


Figure 1. *Procedure for data collection.*

Prior to the interview starting, participants were asked to complete the demographic questionnaire (Figure 1, Step 7). The demographic information required included: age, years as a consultant, length in current post, gender, additional titles, hospital type, working pattern, marital status, if their partner is a doctor, pay-scale, reported hours worked in the previous week for NHS and non-NHS hours.

Qualitative semi-structured interviews. Consistent with IPA methodology, the interview schedule (Appendix 4) was flexible and non-

directive to facilitate the participants in telling their story. The interview schedule comprised of a small number of open-ended, non-directive questions informed by previous research asking participants about their experiences of: (1) stressors and/or challenges at work, (2) how these relate to their psychological health, (3) their experiences of coping in these circumstances and (4) the implications of these experiences on their working career. The interviewer attempted to approach each interview as independent from the others, using the interview schedule as a guide but allowing the conversation to flow naturally, being led by participants wherever possible. A dynamic, reflective, probing approach to interviewing was adopted, concentrating on building rapport to allow participants to disclose their perspectives freely. All interviews were recorded with a Dictaphone and the interviewer made brief notes throughout.

Ethics

This study obtained ethical approval through the University of Exeter ethical committee (see Appendix 5). For each ED site, approval was obtained from the corresponding NHS Trust's Department of Research and Development (R&D), allowing research to take place on site (see appendix 6³).

All participants were offered an additional opportunity to opt-in to the study after the researcher was given their contact details. This aimed to clarify that participation was voluntary and the decision to participate remained confidential. In arranging and conducting interviews, all names and e-mail

³ R&D approval was granted for all ED sites. See Appendix 6 for a sample R&D approval letter which has been anonymised to retain confidentiality of the ED sites participants were recruited from.

addresses were kept separate from interview data by means of a code, known only to the first author. Participant names were not collected on any questionnaires. Demographic information, interview transcripts and recordings were held on the first author's computer, secured with a password. The computer was protected with a firewall and up-to-date anti-virus software. Only anonymised data was stored on the computer. The first author kept CD and paper copies of all data in a locked cabinet separately. Interview audio files were transcribed by the first author using the Express Scribe software (<http://www.nch.com.au/scribe/>) for more than half of the interviews. The remaining interview files were transcribed using a transcription service⁴. All interview transcripts were entered into NVivo 10 software for qualitative analysis by the first author. Demographic data was entered into Microsoft Excel by the first author.

The academic context of the present research was made clear to participants and field collaborators. The content of the interview was not expected to be particularly distressing, so standard procedures for the management of distress during or after research interviews was followed. Before the interviews, participants were informed that talking about stressful and intense experiences might make them feel distressed. Appropriate debriefing was offered following participation, in the form of subjective assessment by the interviewer and providing signposting and contact details of support services available to all participants (e.g. their general practitioner, the Samaritans, counselling and advice telephone services for doctors).

⁴ Transcriptions were completed by Devon Transcription, a transcription company that adheres to strict confidentiality measures as standardised by English law and covered by the Official Secrets Act. This service provided a highly secure encrypted file transfer system for security and confidentiality.

Participants were aware that confidentiality would be broken if participants disclosed significant risks to their safety or to others (see Appendix 2 for full details).

Analysis

Consistent with IPA methodology, the first author read each interview a number of times, paying particular attention to semantic content and language use, key words, phrases and explanations. Each was coded with a key word or phrase, known as emergent themes, and flagged those that were repeated by the same participant, or different participants. These recurrent themes represented a shared understandings emerging from the data. Extracts containing all instances of each recurrent theme were marked and similar recurrent themes were grouped into super-ordinate themes.

The most articulate or powerful examples within each super-ordinate theme were selected to illustrate the theme further, with emphasis on similarity and consistency between participants. Instances of marked contradiction and polarity were also highlighted. As a result, each theme provides a distinct representation of thoughts and feelings about an issue. The first author attempted to suspend existing knowledge and experience, in order to see the world as experienced by participants. The first author is a (trainee) clinical psychologist with specialist interest in acceptance and compassionate-based, third-wave psychological approaches and psychological wellbeing in 'at-risk' populations. These interests influenced the interpretative level of the analysis, which is encouraged by IPA methodology. What emerges is a co-construction built by the ebb and flow between participant and researcher, encouraged by two-way communication. This method allows meaning to

unfold during the construction of the interview, as well as the analysis of the texts (Smith, 2007).

For purposes of validation, the research supervisor read a sample of transcripts and checked that themes: were grounded in the data, representative, and constructed in a way that made intuitive sense. Two post-graduate psychologists (in-training) provided further validation by analysing a sample transcript and generating themes, checking for consistency against the present analysis. Two participants from different ED sites were invited to comment on a draft of the analysis, checking the themes for their representativeness and intuitive sense.

Results

Interviews were completed between May and October, 2013. The interviewer was 29 years old, white and female. The cumulative time of the 18 interviews was 9 hours and 54 minutes, the mean interview duration being 33 minutes (maximum 48 minutes, minimum 24 minutes). Demographic information for all participants is displayed in Table 1.

Table 1

Demographic Information of Participants (n = 18)

Demographic Information	Mean (SD)
Age (years)	43.17 (5.80)
Female	6 (33.33%)
Married	15 (83.34%)
Years as EM consultant	7.64 (5.76)
Working in a Teaching Hospital	11 (61.1%)
Years in current post	7.47 (5.88)
Full-time working pattern	18 (100%)
NHS hours worked per week	48.39 (10.67)
Non-NHS hours worked per week	4.94 (6.13)
Annual leave days taken over the last 3 months	9.67 (3.60)
Annual salary equal to/ less than £89,370	9 (50%)

Qualitative Analysis

The analysis was formed of three super-ordinate themes: (1) systemic pressures, (2) physical and mental strain, and (3) managing the challenges. Participants perceived themselves as managing a number of stressful challenges, as a result of their role, in the current socio-political context. Their experiences sat within the context of uncertainty: surrounding their perceived ability to sustain a functional level of physical and emotional wellbeing, and concerning the future of the EM profession.

The emergent themes that are sub-ordinate to their corresponding overarching theme have been included in this analysis and are displayed in Figure 2. To communicate the data as authentically as possible, material from

transcripts has been quoted (see Appendix 7 for a sample interview transcript and coding). These themes were considered within the context of existing literature in the discussion section of this paper.

Super-ordinate Themes	1. Systemic Pressures	2. Mental and Physical Strain	3. Managing the Challenges
Sub-ordinate themes (within the corresponding super-ordinate theme)	Uncontrollable patient flow	Threat to professional identity	Comfort in one’s professional skills
	Compromised clinical risk management and decision making	Trapped in a cycle of physical and mental exhaustion	Proving one’s worth
	Changing socio-political demands and expectations	Uncertainty of individual sustainability	Evolving with the pressurised context: developing status, influence and purpose
	Imbalances between demands and resources	Pain of professional and personal vulnerability	A sustaining environment: knowing that you are not alone

Figure 2. Super-ordinate themes and their respective emerging themes.

Super-ordinate theme 1: systemic pressures.

Participants described the challenges of their role in terms of the pressures placed on them from external sources. These pressures had notable impacts on their clinical work and professional relationships.

Uncontrollable patient flow. The ED environment was felt to be a source of great satisfaction and great pressure, particularly when the quantity of patients reached a critical point.

“...sometimes it feels like it can be moving out of control...we see a lot of patients, and if things are outside of my immediate control like bed availability in the hospital generally that are causing my systems in the emergency department to clog up...patients begin to accumulate.... So I do find that difficult.” (Participant 7)

During times when consultants are in high demand, participants can feel trapped; without a protected space from interruptions and unsatisfied with their clinical approach.

“...we are all things to all men, we are the place that everyone goes to for advice and therefore we can have in long periods where we do nothing but answer questions one after each other, with...junior doctors and middle grade doctors, nurse practitioners queuing up to ask for our advice and input...what makes it especially stressful is that if we have very sick patients...so I will be clinically managing maybe one or two or maybe more patients but still having to be this repository device.” (P2)

“...you can see patients are waiting and they are not being treated in the way that you would want them to be treated...so providing less than quality care is stressful...because you want to try and help them, but at the same time you can't.” (P1)

Compromised clinical risk management and decision making.

During busy times decision-making can become relentless, repetitious and predictable and impacts one's approach to clinical practice. Participants' clinical case management shifts towards a more risk-averse approach.

“...what you can do is become safer, you become more risk averse, because you haven't got the time to take the full risk decision...” (P8)

“...I find that I get...decision fatigue, where after about 6 hours my ability to make accurate decisions decays and I choose not to make them, I choose a risk averse strategy, which usually means for ill people or potentially ill people, admitting them to hospital which perhaps isn't in their interests.” (P2)

Changing socio-political demands and expectations. The demands of the wider healthcare context are perceived to be growing. When consultants are unable to meet patients' expectations, it can feel unsatisfactory and attacking.

"...they[patients] will turn up here... and if somehow or another we can't wave a magic wand or immediately sort things out for them they get annoyed, they get unhappy, they think we're not taking them seriously and then we get letters of complaint." (P13)

Participants experience some targets and interactions with professionals outside the ED as stressful. Objectives and policies can feel counterintuitive and are incongruent with the clinical care consultants strive to deliver.

"... [It's stressful] if the expectations from the management are that you will deliver a certain service which is not in-line with your training or with your clinical expertise. So if unnecessary targets or non-clinical targets which don't make sense to you come in, and then you're pressured to do things which clinically don't make sense, then that makes it a very unsatisfactory alliance." (P4)

The mismatch between systemic expectations and effective clinical care within the ED can lead participants to feel punished, without due cause. Participants feel they are required to continue regardless of this incongruence.

"...so the daily thing of coming into work and thinking, so...how many targets are we going to be shouted at and beaten with but are not within our control because it's not about emergency department functioning, it's about onward patient flow, capacity within the wider system." (P14)

Imbalances between demands and resources. Increasing demand on emergency services has led to a growing imbalance between supply and demand, which is perpetuated by the instability of the EM profession.

“...The intensity would be ok if the resources matched, but they don't and that's the stressful bit.” (P15)

“...if there were twice as many consultants on the shop floor every day, I'd still really enjoy my job.” (P2)

Participants feel investment in consultant job planning is lacking, creating an unstable future for the EM profession. Participants' career longevity is at risk.

“... [There are] reduced levels of people wanting to get into the [EM] speciality...which increases the demands on the seniors who are left...” (P5)

“...I am unaware of any department that has a different job plan that is specifically based on age for somebody that is 35 versus someone that is 65”. (P5)

Super-ordinate theme 2: physical and mental strain.

Participants described the impact of these stressors in terms of their physical and mental wellbeing.

Threats to professional identity and self-worth. Participants felt concerned that their ability to exert meaningful clinical decisions is undermined. The systemic stressors contribute to participants' feeling that their perceived status is low. Participants described feeling powerless to

defend against this at times. This impacts participants' feelings of self-worth and threatens the motivation to continue with one's role.

"...From time to time we feel very unappreciated and disrespected...these things undermine feelings of self-worth and without self-worth it is hard to come in and do what you like doing...we work bloody hard, we think we do special stuff... we tell ourselves we do and nobody bloody appreciates us and I think that is pretty undermining....well I know it's undermining." (P2)

"...We're the default bottom line, if nobody else wants to take it [clinical responsibility]-it comes to us and we have to sort it, we don't have the opportunity to say no....you feel a bit dumped on at times..." (P6)

Participants expressed a reluctance to reduce their cognitive efforts and clinical workload. Participants' identity as an EM consultant is ambitious and driven to make meaningful changes for others in stressful circumstances. Participants described striving to achieve tight control when managing the ED, particularly when it is overwhelmed. This approach involves high cognitive effort, high energy levels, and being pulled in multiple directions. This can ultimately lead to dissatisfaction when participants cannot achieve their full potential.

"...I don't like to leave a department that's not under control" (P7)

"...I think the hardest thing for me is probably that feeling that you never get to do something really properly..." (P8)

The professional identity of an EM consultant is built upon being able to make decisions and solve problems for the better; the prospect of one's

active, hands-on approach to decision making being impeded is a threat to one's role and status.

*"...But I think all you can do is keep trying to make a change. I think once you stop trying to make a change then you are doomed to failure."
(P9)*

These competing factors lead participants to feel trapped, being propositioned to act in ways that are incongruent with their professional identity. On one hand, participants are doomed if they maintain the intensity of their clinical work, which could potentially result in unsafe practice and physical and psychological ill-health. On the other hand, participants are doomed if they limit their level of striving, which can equate to prioritising their own health over the health of others, which is incongruent with the EM consultant identity.

*"...I do care about the people I look after...I do go the extra mile more or less every day. I think when you stop having the will to do that and you start just doing the minimum that you have to do to get by, then that is when you start to know... I've seen doctors that burnout that stop caring about patients and they stop caring about anything and when they get to that stage they need to go, for themselves and for the patients that they are there to look after. That is not me yet, but who knows... that is certainly a risk in this environment."
(P10)*

These challenges and uncertainty are experienced within a consultant culture that is reluctant to recognise one's own needs and act on them.

*"...It is difficult to find the time for you to look after yourself in quite the way you might want to...often work-life balance is [about] your family and work, but for you personally, as an individual balance?...people don't often think about it or give it the time it probably needs"
(P11)*

“...there is doing the best for the patients or the staff and [doing] what's best for me, and they are not the same.” (P2)

Trapped in a cycle of physical and mental exhaustion. Participants described their experiences as exhausting, physically and mentally.

“...I can't just walk away from it...even if I feel irritable. You just keep going, you just keep working, you keep organising the shift, you keep answering the questions, you keep seeing the patients.” (P7)

Some participants' experience is to 'switch-off' after work, directing their energies into something else to prevent thoughts about work dominating their attention. However, this is an effortful task, required most when resources are low. At times of heightened stress, participants expressed feeling trapped, with their minds continually being 'on', analysing and rehearsing their decision making. Participants described being exhausted and needing to switch-off, but unable to utilise common strategies; the use of alcohol is avoided as it would compromise their functioning for work the next day and exercise involves mental and physical energy that isn't available.

“...if I'm over stimulated I kind of see it like my brain is being trapped on, so I can't sleep and I mull each clinical case over in my mind repeatedly often for several days.” (P10)

“...it would be very easy to come in [home] and drink a bottle of wine...you're feeling a bit too tired to...well the sensible thing would be to go to the gym, but I really do have to be very conscious in that decision...to try and do something healthy, because otherwise the next day you feel worse and the spiral continues.” (P5)

Participants described realising the impact of this continuous emotional and physical strain; becoming aware of its impact during extensive leave and planning for it.

“...You don't realise how tired you are and how different your mental state is until you've been on leave for a while and you are truly away from the place...what you don't realise is that you never have off-time.” (P5)

“...As long as I have time to recover, force yourself to recover, then I actually think that that it is ok. But if I try to go for a too long a period without a break then I think that can cause problems...we figured out as a family that everyone suffers at home if I overdo it.” (P10)

Uncertainty about individual sustainability. The exhaustion involved in participants' work prompts them to consider change, in order to sustain as an EM consultant, such as reducing shop-floor commitments. Participants expressed concern about how they would feel withdrawing from aspects of their role that identifies them professionally and personally. The high amount of responsibility, control and direct clinical contact is closely related to one's sense of achievement, satisfaction, purpose, and self-worth.

“...there is a lot of satisfaction for me in fixing people. People go home, they come in broken and they get fixed in some way.” (P6)

“...a lot of my self esteem and self-worth is tied up in being a doctor so it'd be quite a big step to stop doing it...”(P3)

For participants, the shared identity of an EM consultant is faced with a number of threats. Their role is becoming unsustainable, which over time, has required them to sacrifice the satisfaction of clinical case-work and patient feedback for managerial responsibilities. Participants expressed concern

when seeing consultant colleagues decide to leave the profession. This is experienced as a personal loss and a loss for the speciality. It prompts one to reflect on the value attributed to the professional role and one's self-worth.

"...I think it is damaging for so many people to leave and leave for their stated reasons, which is that they don't want to do the job that you're doing for another 20 years, so that makes people reflect. If somebody came up to you and said 'I wouldn't do your job', and then said it again and again, and then went off to do another job which they thought was better...I don't think it's good..." (P12)

The sustainability of the consultant role is discussed openly between consultants and is a dominant threat to maintaining physical and mental wellbeing.

"...I can't conceive doing this job till the age of 65...the current level of stress and constant bombardment and harassment, I couldn't do it." (P6)

"...it's still very rewarding. I still never have any regrets that I chose medicine...at this stage that I am happy that I chose Emergency Medicine but I don't feel that it is sustainable." (P5)

Participants experience a lack of external consideration for the unique intensities involved in the EM consultant role and a powerlessness to change things. Participants perceive little evidence that the wider system has recognised or acted upon the pressures they are under, perpetuating feelings of being undervalued. Evidence that it is an unsustainable role is being experienced first-hand by participants: witnessing consultant colleagues suffering and/or managing the situation themselves, which often involves withdrawing from the clinical role, or burning out.

“...when you know that...in 8 years, 3 people [colleagues] I know have had “nervous breakdowns”, and 5 people I know have emigrated...it provides...a background hum of discontent which you have to constantly battle against” (P12)

“...there are a couple of my colleagues who have had time off sick with stress or mental health issues, and you think...how am I going to stop that being me?...there’s the potential there for all of us...I don’t feel personally I am the sort of person that might get to it, but you never know.” (P9)

The pain of professional and personal vulnerability. Particular cases that come into the ED have lasting emotional resonance. From a professional perspective, in these cases participants feel powerless to help and/or that their actions failed to rescue patients or relatives from distress. From a personal perspective, EM consultants are in a unique position; being the person someone comes to in great distress, becoming intertwined with their fate and their loss. The consultants’ experience of patient’s and relative’s pain is amplified when they themselves can identify with them, bringing them closer to the human-aspects of these experiences.

“...if it’s someone who’s fallen off a building and they’ve bled to death in resuscitation, you go home and think about them and their family and could you have done anything different...is there a part that you played in it not being successful...” (P11)

“...There are a few episodes in my career that are very vivid, they are all bad without a doubt, because people died or suffered because I was put under... intolerable, stressful positions.” (P2)

“...it does impact you, you feel a bit funny for the next few days...there are only about 3 or 4 cases that I will never forget...one of them...I

wasn't even involved in the resuscitation, I was looking after the mum and she was the most heartbroken person...I can still remember what she was saying, I can still remember where we were sitting, it was just so harrowing...to watch someone fall apart in front of you and physically and emotionally fall apart is very difficult, and I'll never forget that." (P11)

Super-ordinate theme 3: managing the challenges.

Participants described adapting to the systemic challenges and physical and mental strain in a number of ways.

The comfort of one's professional skills. Participants described throwing oneself into their clinical work as a refuge, providing a reliable source of competence, control and self-worth.

"...the day-to-day work on the shop floor is the fun bit, that's why we do the job. It's not stressful, as such. It's stressful in as much as the flow through the hospitals are difficult. But actually seeing an individual patient is never the stressful bit. That's the easy bit." (P17)

Striving to regain control of the department when it is overwhelmed is a challenge, but also satisfying and engaging.

"...I'm the sort of person who would battle through...because I am happy when my mind is otherwise occupied." (P14)

Proving one's worth. The shop-floor provides a time-limited opportunity to push oneself and improve skills.

"...as you get older I think you get less resilient, you get more skilled but less resilient." (P2)

The expectation of an EM consultant is to always apply the best clinical skills, to make one a better clinician.

“...the important thing is to be able to continue to introspect, to continue to try to improve, to get feedback and see where the deficiencies are and try to remedy that.” (P4)

The pain experienced when participants are involved in emotionally significant cases is managed by analysing one's decision making and mistakes; holding onto those memories to prevent them from happening again which reframes them as something worth remembering.

“...We all use our mistakes as learning opportunities and I think that that is one of the things that we all pride ourselves on, is that we don't make the same mistake twice.” (P2)

Striving on the shop-floor provides a chance to prove one's worth to others and allows for recognition of one's efforts to be felt. This process of high input for the service of others is recognised and supports a sense of self-worth, which is undermined elsewhere.

“...I think we get a lot of support and recognition within our department, both from...consultant colleagues, but also all the staff value us... I feel valued.” (P8)

Evolving with the pressurised context: developing status, influence and purpose. To protect oneself and others from accumulative stress, participants describe withdrawing from the environment where the pressures are enacted; the shop-floor. Engaging in additional roles provides a sense of satisfaction, but can also prompt one to feel they are no longer safe, or 'good-enough', to practice on the shop-floor.

“..I think an ideal solution would do be doing less and less and less clinical work as time goes on...where you think actually the

accumulative effect of all of this stress...it's better for your wellbeing and the departments wellbeing if you're not put under that amount of stress regularly." (P15)

"...you look to do something else, either for your own satisfaction or because you realise that you can't keep plugging away on the shop-floor until you're 65. Because people will, and do, burnout because of that" (P14)

A unified way of working between consultants has helped the group establish power and influence, their value being recognised by ED staff. Within the consultant group there is an element of competition, amplifying fears that opportunities for career progression have been lost, thus limiting one's options for developing alternative roles.

"...I think here in the department we push ourselves as well. We are all fairly ambitious. So if one person's achieving something, the next person is, 'You know what, if they can do that, I can do that'." (P14)

"...you always think you are going to have more and more opportunities as you go along, and it's only now that I'm starting to think I will actually have fewer opportunities...you can sell yourself on having experience and wisdom...but there will come a point where people will say, "No, we need somebody new and dynamic and not someone who's very set in their ways."...it would be changing away from a job that I like, that I'm confident and happy in, to something unknown, and do I want that?" (P8)

Protecting the department from the impact of systemic pressures provides an opportunity for consultants to problem-solve, fix, protect – qualities congruent with the EM consultant identity that are challenging to

achieve when the department becomes overwhelmed or when targets are counterintuitive.

“...getting the best from your team is massively pleasurable, gives me an enormous amount of support and a great feeling of satisfaction...our job as consultants is to be the umbrella and just keep the shit off of the staff, be it coming from above from the Trust, be it coming from the patients....I get a lot of pleasure from running the team; I think most of us do.” (P2)

Working with a consultant shared-vision is a means of protecting participants' professional status, redistributing power to the consultant group.

“...We are always trying to put on a unified front for the shop floor. If it's not a unified thing, the junior doctors will become confused, the management above you could potentially use that to split the group.” (P14)

Directly influencing the systemic pressures on the ED engenders feelings of power, influence and purpose, for the benefit of others.

“...If you're in a position where you can try and influence the system it sort of makes you feel better because at least you are doing as much as you can to try and make the system out there as good as it can be...” (P11)

“...we meet every week and discuss things that are happening day-to-day but also...our long-term strategic goals... that weekly interaction with your colleagues...if you weren't involved at a strategic level...that would be then very frustrating...” (P9)

Participants have experienced a shift in how they talk about: the emotional resonance of working with particularly traumatic cases and the felt

impact of systemic pressures. There is a shared dialogue that recognises that it's normal to find these interactions physically and emotionally difficult.

"...now it's much more talked about and it's ok to admit that you found a certain thing that happened, whatever it was lots of patients or just one event, that you found that stressful and I think that is seen as a good thing, to talk about it and recognise it." (P15)

A minority of participants described engaging in activities which are solely aimed at enhancing their own wellbeing. As a result of prioritising self-care, they are enabled to function well in their role and relationships.

"...I see other colleagues who aren't fit and healthy struggling. Running to me... is my stress relief, I consciously don't think of anything...I find it keeps me sane really, I think that it helps me have the relationship with work that I want to have." (P11)

The sustaining environment: knowing you're not alone. The recognition that comes from within the department is a strong source of support. The knowledge that one is not alone in experiencing physical and emotional strain provides reassurance; it normalises natural responses to distressing patient outcomes.

"...you can feel down, you can feel overwhelmed and then knowing that they [consultant colleagues] are basically saying to you, it's not you it's the system...they are saying 'we are all the same'." (P12)

"...quite often the reaction is that the individuals think they should be punished...in my experience they find a lot of comfort in 'this is normal, this happens'." (P2)

The support of consultant colleagues and the wider ED team has a sustaining impact and is a necessity for EM consultants. Connection with each

other provides motivation to continue to strive and battle, despite the systemic pressures. The reciprocity of these relationships are appreciated by participants, they are then motivated to provide the team with protection from the stressors, refuge for their experiences of pain and be a willing bearer of overwhelming responsibility.

“...colleagues are massive to us, both at a consultant level and as part of the team. One of the reasons I think we tolerate what we do is the team, it's that slight soldier mentality where we are in this together, we can do this... it's what we do.” (P2)

“...if your relationship with your colleagues breaks down, then you will not survive on this job for a day because you just won't like to come in to work.” (P4)

Summary

An understanding evolved of how participants experience physical and emotional strain, resulting from a dynamic interplay between external pressures and their management. Participants described striving, and prioritising the wellbeing of others, at all costs in order to restore effective functioning to the ED and EM specialty, proving their worth. The effect of this increased strain leaves consultants exhausted and uncertain about the sustainability of performing with such intensity (Figure 3). The overwhelming pressure leads to feeling powerless, resulting in consultants: exiting early from the role, leaving due to ill mental-health, withdrawing from clinical responsibilities, or enduring in the role with the aim of improving the systemic problems. These strategies can further contribute to additional pressures and strain (see Figure 3).

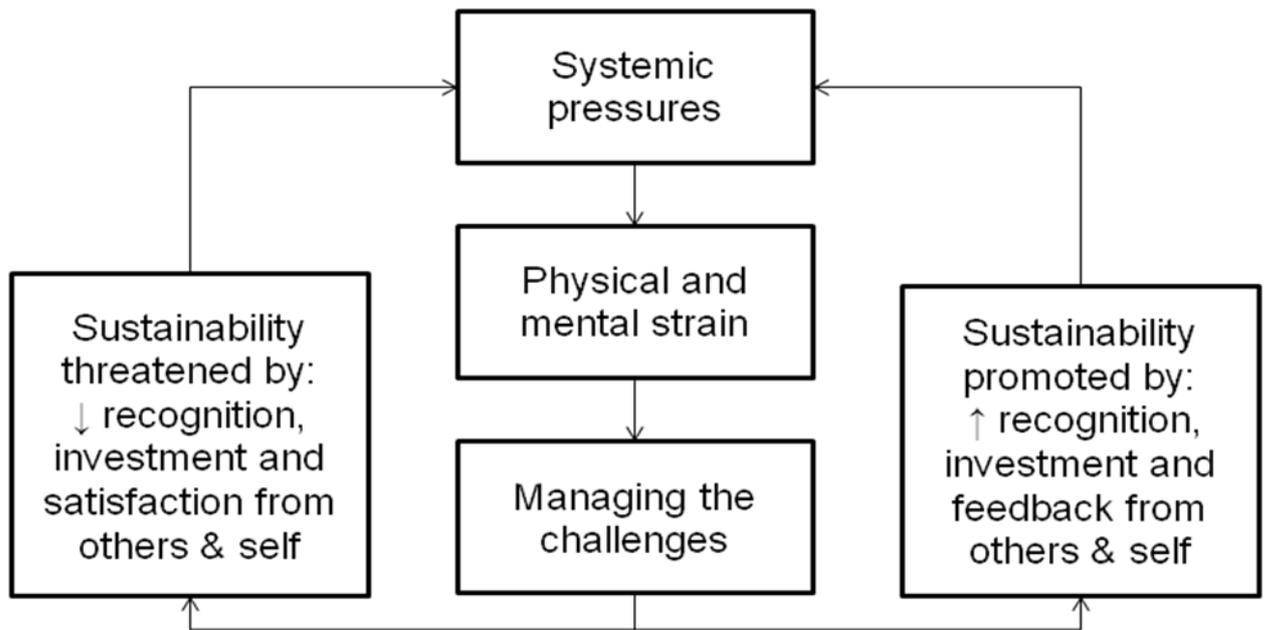


Figure 3. Brief summary of analysis and relationship between themes.

The unified consultant body is a source of self-worth validation and has the potential to elicit change. Consultants’ increased efforts at an organisational and managerial level are recognised by fellow ED staff, increasing satisfaction through working to achieve meaningful change for others. The support, purpose and validation one receives from the ED environment increases consultants’ confidence in sustainability. Efforts to support the ED through the systemic pressures are prioritised and a sense of satisfaction and self-worth is perpetuated (see Figure 3).

Discussion

This study aimed to explore EM consultants’ psychological wellbeing, as evidence indicates this group are at particular risk of experiencing psychological distress (e.g. depression, anxiety and burnout). Consultants did

not label themselves as 'stressed', preferring to describe their experience as significantly stressful, both physically and mentally, which they perceive is unrecognised by the public, NHS Trusts and hospital colleagues. This strain is perceived as physically and emotionally unsustainable. Consultants witness their colleagues exit the profession early, leave due to poor mental health, disengage from their work, or endure to promote meaningful change. This creates uncertainty about consultants' own psychological wellbeing and functioning. The presence of stressors diminishes consultants' self-worth and a sense of achievement in their professional role, causing consultants to strive more so to maintain one's status and achieve meaningful change for patients and colleagues. The increased intensity with which consultants work creates a cycle of exhaustion, compromised efforts and unacknowledged strain – resulting in vulnerability for depressive symptoms and burnout.

These processes may help explain the heightened psychological distress that ED physicians and consultants have reported elsewhere (Yates et al., 2012; Burbeck et al., 2002). Simultaneously, when participants are striving to improve and support colleagues/ED staff, they feel the benefits of their efforts and their specialist skills, feeling validated. This process supports their self-worth, protecting them from the psychological impact of such threats. This supports the suggestions that social support acts as a buffer against stress and social identification enables access to social resources (Haslam, 2004; Moos & Holahan, 2003).

The themes presented here replicate previous qualitative findings. Flowerdew et al. (2011) identified excessive workload and limited resources as key stressors for ED staff. Paltved & Musaeus (2012) identified

organisational factors as a recurring theme across qualitative studies involving EM doctors. ED staff are known to strive for quality over efficiency, with teamwork enabling effective patient flow (Nugus & Braithwaite, 2010).

Thematic analysis in previous research has emphasised the interdependence of workflow and work pressures, the separation of quality from effectiveness in patient care, and the inter-departmental context of the ED. The present study used IPA to hold such contextual complexities, while exploring the relationship such pressures have with EM consultants' psychological health. The relationship between these contextual factors and the individual experience has been established quantitatively with correlational studies. An understanding of the constructs that makes sense of these patterns, alongside the experience of significant psychological distress of EM consultants, has previously been overlooked.

The present findings suggest that systemic pressures may be overexposing consultants to failures in meeting self-worth contingencies. The following processes are understood to increase one's risk of experiencing these failures and reflect the experiences of EM consultants in the present study:

- an imbalance between demands and resources (Transactional model of stress; Lazarus & Folkman, 1984)
- lack of satisfaction derived from clinical activities (Karasek & Theorell, 1990)
- uncertainty of attaining subsidiary roles for achieving self-definition (Kuiper & Olinger, 1986)

- a lack of opportunity to generate new role relationships (Kuiper & Olinger, 1986)

While an individual is vulnerable due to the presence of these factors, experiencing repeated failures in meeting self-worth contingencies results in negative aspects of the self and an overall negative bias to become more salient. This process contributes to the expression of depressive symptoms (Dance & Kuiper, 1987). This self-worth contingency model postulates that self-worth plays a fundamental role in the onset, maintenance and remission of depressive symptoms (Kuiper & Olinger, 1986).

EM consultants may also have an increased vulnerability to experiencing psychological distress as they may hold *externally*-based contingencies for self-worth. Externally-based contingencies may be particularly well-established and extremely functional for this group, e.g. in achieving career progression and consultant status. As the present research suggests, the lack of external validation and recognition is significant to consultants' lived experience; where self-worth fails to be validated by the system, it is validated through patient feedback and ED colleagues who participants identify with. An ED identity, and unified ED consultant identity, may protect consultants from stress by providing them with an identifiable means to receive external validation and social support, an effective source of sustainability.

The present emerging themes were largely consistent across participants, which may be a reflection of their unified identity. Some deviations did present themselves in a minority of cases, particularly participants' willingness to prioritise self-care and personal growth outside of

medicine, and openly discussing the psychological impact of decision-fatigue with colleagues. Although diverging from the dominant themes in the data, these experiences were perceived as beneficial for wellbeing and enabled recognition and normalising. Having a strong unified discourse may make it difficult for alternative discourses to emerge.

Observable during interviews, participants' dialogue was structured carefully, thoughtful, clear, and delivered with intensity. Participants spoke readily about the systemic pressures. It was felt this reflected an analytical, reflective approach to coping with external stressors. Enabling participants to express the psychological impact of such experience required additional probing, possibly indicating a bias in focussing on external processes. Participants unanimously identified with the term 'sustainability' as representative of their emotional and physical status. This suggests that EM consultants identify with a bespoke, less-stigmatising, understanding of symptoms associated with depression, anxiety and burnout. Given participants' careful use of language and the recurring reference to status, power and influence, a research approach that analyses such discourses may be justified for future studies. An understanding of the patterns and hidden rules in how consultants use language and create narratives was not established here; therefore future research examining communication may provide new insights.

The present findings are representative of EM consultants in both teaching and district hospitals (with annual patient admissions of <100,000). It is worthwhile investigating if the present themes are representative of those working in hospitals with higher patient admissions. The response rate of

participants exceeded researcher expectations. This research possibly represented an opportunity to have experiences acknowledged and validated. The response rate may also reflect aspects of consultants' professional identity; being active in promoting change and supporting colleagues involved in research recruitment. It was vital for the researcher to acknowledge the expectations that participants had for this research. Bias from the first author to pathologise participants' experience and collude with blame was acknowledged during analyses, as consistent with IPA methodology.

The prospect of a selection bias in the present study is acknowledged. All participants were working full-time, therefore 'functioning'. Consultants who were experiencing distress that significantly impeded their ability to maintain the consultant role were not included. It should be acknowledged that participants were able to reflect on their own experiences of absenteeism, as well as reflecting on their perceptions of colleagues' unsustainable experiences. The present findings highlight particular risk factors for the development of significant psychological strain and exhaustion: excessive demands, poor self-recognition of one's own emotional and physical needs and self-care, poor recognition from others of one's efforts and lack of sustainability of the role. Protective factors are experienced as an analytical approach, social support from colleagues and personal relationships, and maintaining and developing clinical skills. Identifying with each other provides a sense of purpose; where one can exert the skills of an EM consultant and witness the benefits, receive recognition and feel satisfied. Future studies would benefit from exploring these constructs further to establish the

generalisability of these findings (e.g. self-worth, role development and satisfaction).

ED consultants may benefit from enhancing the social support within the ED team; developing a dialogue that facilitates giving and receiving recognition and permission for self-care. It may be beneficial to recognise and normalise the impact of stressors, such as decision fatigue, or investigate alternative sources of external contingencies for self-worth. Promoting role development may protect EM consultants from experiencing role loss when systemic pressures limit one's opportunity to perform and receive feedback. Multiple-role opportunities may reduce uncertainty and increase sustainability. These measures would support a stigma-reducing means of promoting psychological health in highly demanding professions. The psychological health of senior EM physicians warrants recognition and priority, which has the potential for wide-reaching benefits in emergency medical care.

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Appendix 1

Recruitment of lead consultants

Request for your support

We are approaching lead consultants of selected emergency departments to request their support for study (detailed below) to take place. This support will involve informing emergency medicine consultants (study participants) that this research is taking place and then cascading information and promoting participation to those who are interested.

If you wish to support this study, as the chief investigator I will then coordinate with yourself or medical secretary about how best to contact potential participants in order to meet with them to conduct research interviews (e.g. via emailing all consultants in your department or arranging an interview day where any interested consultants can participate).

The study is a self-funded empirical piece of research. There are no external sponsors of the project. The CEM has agreed to endorse this study by distributing an invitation to participate via the CEM e-bulletin to consultants on their register.

The University of Exeter Research Ethics Committee and local NHS R&D Department have approved this piece of research taking place.

Many thanks for your time

Katherine Regan⁵
Trainee Clinical Psychologist, University of Exeter

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Chair, Clinical Effectiveness Committee, College of Emergency Medicine

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Clinical Director for Emergency Medicine, Yeovil District Hospital NHS
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⁵ The first author was formerly known as Katherine Regan

Postgraduate Research for Doctorate Qualification in Clinical Psychology:

The Psychological Health and Wellbeing of Emergency Medicine Consultants

The present research asks how emergency department (ED) consultants perceive their psychological health and wellbeing to be. This follows-up on research conducted by Yates et al (2012), which was distributed to all consultants in the UK by the College of EM. Yates et al found that ED doctors are at higher risk of experiencing clinical levels of psychological distress than other professions working within the emergency department.

Currently, we are interested in how ED consultants cope with the challenges that these experiences present and the implications that this has on:

- Supporting consultants in their personal wellbeing
- The move to Consultant-led ED services
- Recruitment of new Consultants and retention of current consultants in post

Research Aims

The profile of psychological distress is well-established for this group, but the extent to which this knowledge can support interventions to address this is limited.

The present research hopes to gain detailed descriptions and understanding of psychological distress and wellbeing for ED consultants and examine these processes alongside trends of psychological distress, from consultants at a national level, utilising a mixed-methods design.

Participation of consultant emergency medicine doctors

1. We are asking consultants to participate in a brief (20 minute) 1:1 interview with the researcher to get an in-depth perspective of the experiences of wellbeing, stress and coping in relation to their profession.
2. We are asking all consultants to complete a brief online survey (taking 10 minutes to complete) about their health and wellbeing

Research Impact

Change is a constant theme in health practice, particularly in emergency medicine with the move to consultant-led care. Throughout Europe, healthcare institutions encounter difficulties recruiting and retaining highly qualified physicians with adequate specialisation (HOPE, 2002).

Understanding what helps and hinders responses to strain and job demand, may highlight strategies which support individuals and organisations in adapting to inevitable changes.

Appendix 2

Participant Information

Participant Information

This study is being organised by a postgraduate researcher at Exeter University to meet the requirements for completion of the Doctorate of Clinical Psychology degree. When the project is complete we intend to disseminate the findings to the College of Emergency Medicine's (CEM) scientific conference, and potentially reach publication in The Emergency Medicine Journal. The study is a self-funded empirical piece of research. There are no current external sponsors of the project. The CEM has agreed to endorse this study by distributing invitations to participate to all EM consultants on their register. If you would like more information about the project, please contact Katherine Regan by phone on 07989192793 or by email kr264@exeter.ac.uk

Your Participation in the Research Project

Why you have been asked

All physicians working at consultant level in emergency departments (EDs) across England have been invited to take part in an online questionnaire. In selected EDs across the southwest, consultants have been invited to take part in semi-structured interviews. Because the CEM lists you as a consultant in emergency medicine (EM) we are contacting you to see whether you would like to join the study. If we have made a mistake and you are not a consultant in EM then we would not be able to include you in our study. Please accept our apologies for contacting you. Any current consultant in EM working in England can participate in the online questionnaire. There is no obligation to join the study, and this research will not discriminate in any way against anyone who does not want to take part.

What happens if you want to change your mind?

If you decide to join the study you can change your mind and stop at any time. If you want to stop, it would help us if you could let us know (via email, telephone or in note form and send it to the address provided).

What would happen if you join the study?

If you agree to join the study it will take around 10-15 minutes to complete the questionnaire. Your answers will be stored electronically and anonymously, only the researcher having access to the data. If you choose to take part then your consent to participate is obtained by confirming you have read this information and then choosing to follow the online prompts to the questionnaire.⁶

If you agree to take part in semi-structured interviews, this will take 20-30 minutes and is conducted by the principal researcher, Katherine Regan. This is an information gathering

⁶ Originally this quantitative data was collected but due to the small quantitative comparator sample that was recruited, this information was not used.

exercise to explore in detail the experiences of psychological distress for EM consultants; exploring the meaning and impact you give particular stressors at work and how these relate to your wellbeing, coping responses and career longevity. You will be given the opportunity to ask questions and be given additional information before you consent to being interviewed.

Are there any risks?

We do not think there are any significant risks in participating in the study. We have conducted a pilot study of this project, involving other medical professionals, asking them the questions we are asking you. If you feel any discomfort during participation you can stop at any time. If you are left feeling distressed following participation in this study, we suggest that you seek advice from one or more of the following options:

1. BMA Counselling and Doctor Advisor Service: follow this link <http://bma.org.uk/practical-support-at-work/doctors-well-being> or call them on 08459 200 169 (available 24 hrs, 7 days a week) for confidential, nationwide, non-stop advice and counselling for doctors and medical students
2. Your local occupational health service
3. The Samaritans: follow this link <http://www.samaritans.org/> or call 08457 90 90 90 (24 hrs, 7 days a week)
4. Your registered GP

If you would prefer to complete the survey face-to-face this can be arranged by emailing the researcher (Katherine Regan kr264@exeter.ac.uk), anonymity of your identity will be secured.

Your rights.

Joining the study does not mean you have to give up any legal rights. In the very unlikely event of something going wrong, the University of Exeter fully indemnifies postgraduate researchers, and participants are covered by its insurance.

What happens to the data?

The principal investigator is responsible for transferring the anonymous questionnaire information (stored on the online database) to statistical analysis packages. Statistical analysis explores the trends between different variables in accounting for variances in psychological health. This will be interpreted alongside data collected from the interviews, which will also be anonymised and transferred to a qualitative software package for analysis. This will identify emergent themes and their relationship to the research question, highlighting your lived experiences of psychological health and coping as an EM consultant. Once a report is written this will be available to participants, relevant stakeholders and for publication.

Are there any benefits from taking part?

There are no direct benefits to you for taking part; however this study may help highlight to you the impact of your working environment and practice in relation to psychological health, and offer an opportunity to have your views heard in a confidential setting.

How we protect your privacy

All the information we collect from you is strictly confidential, and everyone working on the study will respect your privacy. We have taken very careful steps to make sure that you cannot be identified. We keep any personal details completely separate from the data we collect. We will keep all data for 10 years as required by the University, after which it will be destroyed.

Complaints and Concerns

If you have any complaints or concerns about this study then please contact Dr Phil Yates from the supervisory team. If you require independent guidance on participating in research you can contact your local Patient Advice & Liaison Service (see link)

<http://www.nhs.uk/chq/Pages/1082.aspx?CategoryID=68&SubCategoryID=153>

Contact Details:

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Supervised by Dr Phil Yates, Consultant Clinical Psychologist & Research Tutor
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Appendix 3

Consent Form

PARTICIPANT CONSENT FORM

University of Exeter Ethics Reference Number: 2013/347

Participant ID Number: _____

Title of Project:

The Psychological Health and Wellbeing of Emergency Medicine Consultants

Name of Researcher: Katherine Regan

.....

Participant to complete this section:

Please initial each box:

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.	
3. I agree to take part in the above study.	
4. I agree to the interview being audio recorded.	
5. I agree to the use of anonymised quotes in publications.	

Signature of participant

Date

.....

Name of person taking consent

Date

Signature of person taking consent

** When completed, 1 copy for participant & 1 copy for researcher site file*

Appendix 4

Interview Schedule

(1) What is your experience of stress related to your role?

Probe: Describe the challenges, stressors

Probe: In your own words, what is your experience of that?

(2) How do these relate to your psychological health?

Probe: How does that impact on you, what is your experience of your wellbeing, psychological health and stress? What feelings do you notice?

(3) What is your experience of coping in these circumstances?

Probe: What supports you in your role, what needs to be there for you? What is it like when coping is working well/not very well?

(4) Are there implications of these experiences?

Probe: How do you feel about the future of your role? What is it like looking forward, back or experiencing how it is now?

(5) Summarise key points of interview and check with participant that summary is correct

(6) Are there any important aspects of your psychological wellbeing that we haven't discussed?

Demographic Questionnaire

Demographic Information

What is your: Age..... Gender:.....

What is your current title:.....

How many years have you been an Emergency Medicine
Consultant:.....years

How many years have you been in your current post:.....years

Does your post include any of the following roles?

Clinical director consultant academic

What type of hospital do you work in?

Teaching: Y/N District: Y/N Other:.....

What is your current working pattern: Full time Part time

What is your marital status?

Single / married / cohabiting / separated /
divorced / widowed / other.....

If you have a partner, are they also a Doctor? Yes No

Using the BMJ salary scales 2012-13, what pay scale best matches the current pay scale
you are contracted for?

- Up to £74,504
- Up to £76,837
- Up to £79,170
- Up to £81,502
- Up to £83,829
- Up to £89,370
- Up to £94,911
- Up to £100,446

Over the last 3 months, on average how many NHS hours do you work per
week?.....hours

Over the past 3 months, on average how many non-NHS hours do you work per
week?.....hours

Over the past 3 months, approximately how many days have you taken as annual leave?
....days

Appendix 5

Psychology Research Ethics
Committee

Psychology, College of Life
& Environmental Sciences

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Email Marilyn.evans@exeter.ac.uk

To: Katherine Regan
From: Cris Burgess
CC:
Re: **Application 2013/347 to Ethics Committee**
Date: **15 September 2014**

The School of Psychology Ethics Committee met on recently and your proposal was discussed. The Committee raised a number of conditions of agreement to this application being accepted. You would be expected to address these before beginning the research but sight of the evidence is not required by the Committee and the project has been approved in principle for the duration of your study.

The conditions are as follows:

- Please amend the 'Your Rights' section in the participant information sheet to remove "University of Exeter Ethics Committee" and replace with "University of Exeter".

In any correspondence with the Ethics Committee about this application, please quote the reference number above or decisions may be delayed.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Cris Burgess', with a horizontal line underneath.

Cris Burgess
Chair of School Ethics Committee

Appendix 6

Sample NHS R&D Approval Letter (see attached letter, site identifiable information has been removed)

(Page in place of attached letter in Appendix 6)

Appendix 7

Sample Interview Transcript

Super-ordinate themes

Systemic pressures

Mental and physical strain

Managing the challenges

Interviewer: So basically what I've been asking people is to think about a part of their role or a specific incident where they can recall it feeling quite challenging or difficult. I want to get an idea of your personal experience of what is difficult about the job and what poses as a bit of challenge or threat to your wellbeing. It's up to you how you would like to describe that

Participants: *I think that the challenges in terms of the job are split between the clinical workload, for example I had a day 3 or 4 weeks ago where I was on duty for being a trauma team lead and it was an exceptionally busy day and it was an outlier of a day in terms of its intensity and business. I saw 8 major trauma patients in a 12hr shift um and they were all very critically injured people, children, women, a very wide range of people that were critically injured and on that day the resources, my personal resources, the resources of the team to treat those patients was overwhelmed, you know that was an incredibly stressful day, and to think that is a representative day, you know it doesn't occur every day, but it does occur every month or couple of months. Certainly after that day it took me several days to wind down from it.*

So that's the clinical work and I think that's half of it and I think the other half comes from working in a complex organisation, the political interactions you have both within the department level within the hospital, for me provide me with as much stress as the clinical workload and I think that is kind of hidden in a way. Talking to people outside of medicine I think those environments exist outside of hospitals I don't think they are unique to hospitals but I think that in the hospital environment it certainly exists and there are certainly many different conflicting aims that you are trying to achieve at once and I find that quite stressful.

Interviewer: You said the complex organisational side is hidden; tell me a little bit more about that

Participant: *I don't really know if it's hidden, I think that people when they think about doctors, especially doctors working in emergency departments, they can visualise the stressors of seeing a busy resuscitation room or long queues of patients and I think that most people accept that that is reality and is what causes stress but for me, that is only half the story, I think the other half comes from having to operate in a difficult political*

environment with difficult organisational objectives political, financial objectives that I think is not necessarily immediately apparent when people look from outside.

Interviewer: Like you said, the example you gave on that day when you dealt with all of those traumatic incidents, and that it took you a couple days to get back to normal from that, how would that happen in terms of the complex organisational stuff, how do you get back from that, or is it constant?

Participant: *If you have a very intense clinical day you, I personally if I'm over stimulated I kind of see it like my brain is being trapped on, so I can't sleep and I mull each clinical case over in my mind repeatedly often for several days and I then, normally after a few days things just clear, I feel like it's a bit of a storm and eventually it clears and things get back to normal. I definitely think that when you go through that period that it can make other things quite difficult to deal with, that might not be challenging under normal circumstances. So, I think where the two sides interact is where your clinical work is very intense, it does make the other side of things quite difficult to manage at the same time sometimes. I think that if you didn't have that other side, the political and managerial side of things would be a lot easier to deal with.*

Interviewer: If you didn't have the day where it feels like there is a storm going on, it would be easier to manage the political stuff?

Participant: *And you feel like, I think you feel like, and I think that this is true in lots of organisations, you're balancing a number of things, you're playing political games, you're watching you're back in some quarters, you're trying to further your objectives in others um and that requires a lot of concentration and a lot of cognitive effort and I find that if all your effort is pulled into something else then you have relatively little resources left to do that, that then means that those situations become unmanageable, sometimes.*

Interviewer: Do you almost make sure that you have got a certain amount of cognitive effort for the political side?

Participant: *Um, I have a hierarchy of what I put my energies to. I do put my patients first, so I'd give my patients my energies before anything else, so no I don't think I store energy up for doing other things (laughs). I think that is sometimes to my detriment, because sometimes, one of my issues is that I will just work and work until I haven't got anything left, so no I don't think I hold back, I don't think I hold back resources, no.*

Interviewer: And does that get difficult, working, working, working until there is nothing left?

Participant: *Uhh, it's kind of always been what I've done. I've learnt that I kind of have to take my annual leave at regular intervals and factor in like breaks, as long as I've got that, I've actually just had a week off, as long as I do that and have time to recover, force yourself to recover then I actually think that that's ok. But if I try to go for a too long a period without a break then I think that can cause problems*

Interviewer: How did you discover that way you manage that?

Participant: *I think that I, through trial and error in the past, maybe when I was a registrar I think, you have your commitments outside of work, wife and kids, and I think we figured out as a family that everyone suffers at home if I overdo it, so I think it was a joint thing really that we figured out and doing that has definitely helped us*

Interviewer: What's that like figuring that out with your family, how did that present itself?

Participant: *I think it presents itself as marital and family distress, my wife is a doctor, she works less intensely than me, but we both know that when we get stressed and tired we row and fight and run into problems and other things. I think we both identified that in the past and tried to work around it and try not to both get really tired at the same time (laughs)*

End of sample transcript

Appendix 8

Dissemination of Results

Table A1

Plan for Dissemination of Results

To consultants who contributed	Link to summary report made available in CEM newsletter, hardcopy of summary report distributed to Southwest EDs.
To a wider population of consultants	Presenting the project and results at the CEM annual UK, European or international scientific conference
To interested parties or management	Invitation to attend a presentation meeting held at a Southwest ED to formally feedback results
Academic	Submission of paper to Emergency Medicine Journal

Appendix 9

Instructions for Authors: Emergency Medicine Journal

Editorial policy

Emergency Medicine Journal is committed to the publication of high quality research , educational material , and perspective that will be of interest to a broad audience of emergency practitioners, including physicians, nurses and paramedics, within different settings and in different countries. Our scope includes emergency department care, urgent care, pre-hospital care and the interface of emergency medicine with colleagues in other specialties and public policy.

Our priorities are to:

1. Publish high quality and cutting edge research in clinical care, education, and health services delivery
2. Provide context for the reader on the contribution of the research we publish to our overall knowledge base
3. Provide educational material on practice and teaching that is evidence-based
4. Provide innovative methods of delivering information including both print, web-based and mobile technology
5. Provide a forum for discussion and controversy
6. Ensure that a fair, independent and respectful peer review system is in place
7. Adhere to the highest ethical standards of research conduct.

We welcome submissions of the following types of articles. We receive far more papers than we can publish; thus all papers are reviewed by the Editor in Chief on submission but only some will be sent on for external peer review. Our goal is to give you a decision within one week for submissions we are not sending on for further review.

Each month the editor will select one article (Editor's Choice) to highlight on our website emj.bmj.com, which is free to download.

Article types and word counts

The word count excludes the title page, abstract, tables, acknowledgements and contributions and the references.

Original articles

Full length articles reporting research. Authors of original articles are required to comply with one of the appropriate reporting guidelines endorsed by the [EQUATOR Network](#). More information can be found [here](#).

Checklist Choices

BMJ Group requires compliance to the following reporting guidelines, please upload your completed checklist with your submission and label it "Research checklist". Below are the lists of Research Checklists to be used depending on the kind of your Research Article. If your paper does not belong to any below then you are not required to complete the Research Checklist, but you must state in the Cover letter why it was not obtained.

CONSORT statement - Required for all randomised controlled trials

PRISMA statement - Required for all systematic reviews

EVEREST statement - Required for all economic evaluations

STARD statement - Required for all diagnostic research papers

STROBE statement - Required for all observational studies

MOOSE statement - Required for all meta-analyses of observational studies

Guidance and forms are available [here](#).

Abstract: 250 words

Word count: up to 3000 words

Illustrations and tables: up to 6

References: 25

Additional information (such as data collection tools, surveys, etc) may be placed on the web site as a data supplement. In some cases, we may ask to publish the abstract in print and the full-length article on the website only.

You also have the option to publish the abstract of your paper in your local language. If you wish to do this, please upload a Word copy of your abstract to your manuscript on Scholar One and save it as 'supplementary material'.

Recommended Sections:

Introduction: The article should include a brief introduction explaining why you chose to do the study – this would include a description of the importance of the topic, a summary of what is already known and why the study was needed, and the goal of the study. Three to four paragraphs should be sufficient.

Methods: Guidelines exist for the reporting of methodology and results for randomized trials, observational studies and retrospective chart review. Please see above or refer to the [EQUATOR website](#) for guidelines according to the specific type of study. The Methodology section must include a

statement about ethics approval before it can be reviewed. Clinical trials must be previously registered and the registration number given.

Results: Please follow the standardized guidelines (as in Methods) for reporting of results. For statistics, confidence intervals are preferred to p values.

Discussion: The discussion should begin with a brief summary of the findings (no more than one paragraph) followed by the following (in whatever order works best in the flow of the article): how this study is similar or different from prior studies with regards to methods and results; limitations of this study; implications of the results for practice or policy. If you wish to offer a conclusion, this should be done in the last paragraph of the Discussion rather than as a separate subsection.

Illustrations and tables should be included at the end of the paper (after references) and referred to in the text by number in order of reference.

"What this paper adds" Box

Please produce a box offering a thumbnail sketch of what your article adds to the literature, for readers who would like an overview without reading the whole article. It should be divided into two short sections, each with 1-3 short sentences.

Section 1: What is already known on this subject

In two or three single sentence bullet points please summarise the state of scientific knowledge on this subject before you did your study and why this study needed to be done. Be clear and specific, not vague.

For example you might say: "Numerous observational studies have suggested that tea drinking may be effective in treating depression, but until now evidence from randomised controlled trials has been lacking/the only randomised controlled trial to date was underpowered/was carried out in an unusual population/did not use internationally accepted outcome measures/used too low a dose of tea."

Or: "Evidence from trials of tea therapy in depression have given conflicting results. Although Sjogren and Smith conducted a systematic review in 1995, a further 15 trials have been carried out since then..."

Section 2: What this study adds

In one or two single sentence bullet points give a simple answer to the question "What do we now know as a result of this study that we did not know before?" Be brief, succinct, specific, and accurate. For example: "Our study suggests that tea drinking has no overall benefit in depression".

You might use the last sentence to summarise any implications for practice, research, policy, or public health. For example, your study might have: asked and answered a new question (one whose relevance has only recently become clear) contradicted a belief, dogma, or previous evidence provided a new

perspective on something that is already known in general provided evidence of higher methodological quality for a message which is already known.

For more information see:

http://emj.bmj.com/site/about/guidelines.xhtml#original_article