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REBECCA NEWMAN BSc Hons, PGDip, PGCert

## Exploring psychological understandings of compassion in healthcare organisations

**Section A:** Compassion fatigue in the UK National Health Service: a psychologically-informed review of the literature

**7981 words (plus 90 additional words)**

**Section B:** Organisational climate and threat-related emotion among healthcare staff: implications for compassionate practice?

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A thesis submitted in partial fulfilment of the requirements of  
Canterbury Christ Church University for the degree of:

Doctor of Clinical Psychology

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SALOMONS

CANTERBURY CHRIST CHURCH UNIVERSITY

**CANTERBURY CHRIST CHURCH UNIVERSITY**  
**Doctorate in Clinical Psychology (D.Clin.Psychol.)**

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## Summary page

### **Exploring psychological understandings of compassion in healthcare organisations**

Initiatives to promote compassionate practice in healthcare organisations are emerging, but have so far largely been developed separately from academic or psychological theory. This research project aimed to explore, and empirically test, the application of an integrative psychological theory to the issue of compassion in healthcare.

*Section A* reports a systematic review of the UK 'compassion fatigue' literature, which aimed to identify factors that may promote or alleviate compassion fatigue among NHS staff. The review considered the implications of these findings for the application of a 'compassionate mind' theoretical approach to the issue of compassion in the NHS.

*Section B* reports an original research study that aimed to directly test key propositions of 'compassionate mind' theory as applied to healthcare organisations. Staff from a range of UK healthcare organisations and professional roles were sampled using an online cross-sectional survey. Hypothesised relationships between variables were tested using multiple linear regression and mediation analysis.

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Major Research Project

SECTION A

*Section Title:*

Compassion fatigue in the UK National Health Service: a psychologically-informed review of the literature

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## Compassion fatigue in the UK National Health Service: a psychologically-informed review of the literature

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### Abstract

**Background and aims.** Compassion has been linked to large-scale failures of patient safety in the National Health Service (NHS) in recent years. This paper systematically reviews the UK 'compassion fatigue' literature, with the aim of identifying factors that may promote or alleviate compassion fatigue among NHS staff. The review considers the implications of these findings for the application of a 'compassionate mind' theoretical approach to the issue of compassion in the NHS.

**Methods.** A systematic search strategy elicited 20 eligible studies for review. Findings were qualitatively synthesised and their theoretical implications discussed.

**Synthesis and discussion.** Factors associated with compassion fatigue among NHS staff may be: exposure to a high level of trauma, excessive workload or insufficient resources, a lack of supportive relationships at work (potentially including formal clinical supervision), and a perceived lack of autonomy or involvement in organisational decision-making. These associations may be explained by an activation of threat-related emotion (anxiety, anger and shame), as hypothesised by 'compassionate mind' approaches. Methodological limitations mean that these conclusions require further empirical testing. Potential implications for healthcare organisations and policy makers are discussed.

**Key words:** Compassion; Compassion Fatigue; Compassionate mind; Healthcare; Organisational Psychology

## 1. Introduction

### 1.1 Compassion in the UK healthcare context

Among the many challenges currently facing the UK's National Health Service (NHS) is a widely perceived need for an increased focus on compassion. Concerns have arisen from a series of high profile inquiries and reports into patient neglect and/or abuse (Bubb, 2014; Francis, 2013; Kirkup, 2015; Patients Association, 2009), and have led to debate about how best to understand failures in compassionate care (Maben, Cornwell, & Sweeney, 2010; Paley, 2014).

Prominent media narratives have tended to place blame on "hostile, uncaring staff" (Spencer, 2017); with nurses particularly vilified (e.g. Woods, 2017). The dominant government response has, similarly, been to increase scrutiny and monitoring at the level of healthcare staff through policies such as 'values-based recruitment' (Health Education England, 2016); compulsory hourly nursing rounds (Department of Health, 2013); and criminal prosecutions for 'wilful neglect' (Department of Health, 2014).

A counter-narrative situates failures of compassion within the context of high levels of staff stress (George, 2016; Maben et al., 2010; Stenhouse, Ion, Roxburgh, Devitt, & Smith, 2016) and/or managerial preoccupation with performance targets and financial planning (Ballat & Campling, 2011; Francis, 2013). It is proposed that compassion towards patients is best fostered by supporting staff, and by attending to organisational culture, as opposed to focussing on harsher scrutiny and sanctions (Ballat & Campling, 2011; Crawford et al., 2014; Iles, 2011). Current initiatives based on this approach include Schwartz Centre Rounds® (a

particular type of reflective space for staff) and the 'compassionate leadership' initiative, supported by the King's Fund (Ham, 2014; West, Eckert, Steward, & Pasmore, 2014).

## 1.2 Conceptual definitions of compassion, compassion fatigue and related constructs

**Compassion.** Following a review of Buddhist, and Western psychological literature, Strauss et al. (2016) conceptualised compassion as consisting of five elements: "recognizing suffering, understanding the universality of human suffering, feeling for the person suffering, tolerating uncomfortable feelings, and motivation to act/acting to alleviate suffering" (Strauss et al., 2016, p25). It was found that many definitions of compassion were currently used in the literature, with no single one capturing all five elements proposed (Strauss et al., 2016). For the purposes of this review, a simpler definition of compassion is used: "the recognition of suffering combined with the motivation to relieve that suffering" (Strauss et al., 2016, p25).

**Compassion fatigue and related concepts.** Like compassion, 'compassion fatigue' is often a poorly defined construct within healthcare literature (Ledoux, 2015). The term originated within the nursing context in the 1990s (Joinson, 1992) and broadly refers to the notion of carers' emotional detachment or withdrawal from others' suffering, as a result of the psychological strain that caring work entails (Ledoux, 2015). Some propose compassion fatigue is directly caused by exposure to accounts of traumatic events, or witnessing traumatic events, and therefore use the term synonymously with *secondary traumatic stress* (Figley, 2002; Maytum, Heiman, & Garwick, 2004). Others conceptualise compassion fatigue as a separate construct, or as secondary 'symptom' of a traumatic syndrome (Meadors & Lamson, 2008; Yoder, 2010). A related term, *compassion stress* is similarly used (Radey & Figley, 2007). Many authors use compassion fatigue synonymously with *burnout*,

understanding compassion fatigue to be a result of prolonged psychological strain or even general work-related stress, rather than 'trauma' in particular (Ledoux, 2015). Others argue that compassion fatigue and burnout are distinct but related phenomena, with burnout defined specifically as a combination of low perceived self-efficacy, high emotional exhaustion and high tendency towards depersonalisation of others (Alkema, Linton, & Davies, 2008; Maslach & Jackson, 1981). Due to their large degree of conceptual overlap, for the purposes of this review, the term *compassion fatigue* is used to capture all the above related constructs.

### **1.3 Existing research on compassion in healthcare**

Reviews of 'compassion' have been undertaken in the nursing literature (McCaffrey & McConnell, 2015), and in the healthcare literature more broadly (Sinclair et al., 2016). These reviews suggested that, although there is limited empirical understanding of compassion in healthcare, a number of organisational 'barriers' to compassion seem to exist. These include: a lack of time, poor support, poor staffing and resources, excessive paperwork, and a focus on litigation, metrics, efficiency, and economics (McCaffrey & McConnell, 2015; Sinclair et al., 2016).

Similarly, Bria, Baban, and Dumitrascu (2012) systematically reviewed burnout risk factors for European healthcare professionals working in hospitals and clinics. Organisational and occupational factors, such as perceived job control, values incongruence, social support, and effort-reward imbalance were significantly more predictive of compassion fatigue than individual factors such as personality variables, and coping mechanisms. Socio-demographic factors, although included in the majority of studies, seemed to have little explanatory power.

#### 1.4 The application of psychological theory to compassion in organisational contexts

There are a number of psychological perspectives that can offer theoretical explanation for processes of compassion fatigue in healthcare organisations:

**Job demand-control-support (JDCS) model.** This model originates from social psychology and proposes that any kind of stress or strain among employees is most likely to occur when demands on the professional are high, and autonomy (i.e. control) and support are low (Johnson & Hall, 1988; Karasek, 1979). The JDCS model is primarily a model of job stress, but has been applied to healthcare and compassion fatigue and has been empirically tested in a small number of studies (e.g. Dasan, Gohil, Cornelius, & Taylor, 2015; Johnson et al., 2012).

**Psychoanalytic perspectives.** Psychoanalytic perspectives on healthcare organisations potentially go further to theorise the *processes* of 'compassion fatigue', at both the organisational and individual level. Menzies-Lyth's (1960) seminal observational study of a hospital setting highlighted the inherent anxieties and psychological conflict involved in caring work, as well as the ways in which - when these anxieties are uncontained - they are enacted or defended against through organisational systems. Menzies-Lyth (1960) proposed that these defensive organisational systems in turn reinforce processes of psychological withdrawal in healthcare staff, so that they become less emotionally attuned or available to their patients. Campling (2015) applies these ideas to the modern UK context, referring to a "crisis of containment" in the NHS, in which unprocessed anxiety is being 'acted out' and perpetuated in the form of frequent service restructures, high staff turnover and excessive bureaucracy. Ballat and Campling (2011) further propose that these features of the current NHS context encourage the enactment of psychological defences among healthcare staff, undermining their capacity to engage in the relational aspects of their work. These

perspectives offer theoretical explanations for the psychological processes involved in compassion fatigue, although their focus on unconscious processes is difficult to test empirically.

**'Compassionate mind'**: This is an integrative theoretical approach to compassion that originated in the context of psychological therapy for depression (Gilbert, 2010). Gilbert's (2010) integration of psychoanalytic and attachment theory, evolutionary biology, and Buddhist understandings of compassion (as well as his application of the approach within clinical psychology practice and research) makes 'compassionate mind' a useful primary focus for this review.

A key tenet of the 'compassionate mind' approach is that the human brain can be understood in terms of three distinct, interacting emotional regulation systems. Gilbert (2010) distinguishes between two 'positive' systems: the *incentive and resource-seeking system* (associated with feelings of excitement or motivation), and the *soothing and contentment system* (associated with feelings of contentment and affection). It is the *soothing and contentment system* that Gilbert (2010) proposes enables us to engage in caring and create bonds with others, including our ability to feel and act compassionately. The third system is the *threat and self-protection system* (associated with feelings of anxiety, anger and shame) which is hypothesised to have the function of protecting the person against physical dangers and the threat of social disapproval.

Gilbert (2010) proposes that, due to its direct role in survival, the *threat and self-protection system* has evolved to be prioritised over other systems, and directly suppresses the soothing and contentment system, to an extent that can become excessive or disproportionate. This process is argued to explain both individual psychological difficulties

such as depression (high self-criticism/a lack of compassion towards oneself), as well as social behaviours such as the abuse or neglect of others (a lack of compassion towards others).

With this understanding, compassion fatigue among healthcare staff is considered the result of an over-activation of the *threat and self-protection system* (Gilbert, 2010).

### **1.5 Applications of 'compassionate mind' to healthcare organisations**

*Table 1* summarises the key propositions of 'compassionate mind' approaches applied to the healthcare organisational context. Gilbert (2010) proposes that, for evolutionary reasons, our emotion regulation systems are activated or suppressed largely in response to one's social and environmental context. It is argued that the social context of caring work (i.e. exposure to, and responsibility to alleviate, the distress or suffering of others) inherently triggers threat-related emotion (Cole-King & Gilbert, 2011). Certain organisational policies such as penalties for missing performance targets, or introducing competition between clinicians or departments, have been theorised to further trigger the *threat and self-protection system*, disrupting the parasympathetic *soothing and contentment system* linked to compassion (Cole-King & Gilbert, 2011). It is theorised that organisations should therefore foster compassion by helping employees process the anxiety generated by engaging with the suffering of others, and by developing systems primarily around the facilitation of the relational aspects of employees' roles (Cole-King & Gilbert, 2011; Crawford et al., 2014).

Table 1. Compassion fatigue in organisations: Key propositions of the 'compassionate mind' approach

Human beings have a 'threat and self-protection' neuropsychological system. When activated, this system suppresses the neuropsychological system associated with kindness and compassion. Emotion-regulation systems are activated or suppressed primarily in response to social context.
The context of caring work inherently involves the task of managing threat-related emotions (i.e. in response to others' distress and suffering)
Organisational contexts (e.g. hierarchy, competition and scarcity of resources) may further activate the 'threat and self-protection' system', undermining the expression of emotions associated with nurturing and compassion.
An organisational context of group cohesion and 'social safeness' may reduce the dominance of the 'threat and self-protection system', promoting neuropsychological processes that enable compassion.

## 1.6 This review

A large body of compassion fatigue research exists within the healthcare literature. However, explicit links between evidence and psychological theory are not well established. This review aimed to make such links. Moreover, no pre-existing review of compassion fatigue within the UK healthcare context was found. It was considered that such a review may hold relevant clinical and policy implications for the NHS.

**Aims.** This was a systematic review of the UK 'compassion fatigue' peer-reviewed literature, with the aim of addressing the following questions:

**A)** What are the factors that may promote or reduce staff compassion fatigue within the UK NHS context?

**B)** To what extent, if any, do these findings support the application of a 'compassionate mind' approach to the understanding and prevention of compassion fatigue in healthcare organisations?

## 2. Method

### 2.1 Eligibility criteria

Only primary research studies were eligible for review; comment pieces and reviews were excluded. Papers were eligible if compassion fatigue, or one of its related constructs, was a main focus of their study, and if the study involved healthcare staff from the UK NHS. As the review aimed to explore the factors that may promote or reduce compassion fatigue, studies needed to be investigating compassion fatigue or a related construct *in relation to* at least one other factor. Studies that only examined prevalence of compassion fatigue, or that only explored other factors *alongside* compassion fatigue, were not eligible for inclusion. 'Stress' was not considered a related construct for the purposes of this review, as it is conceptually distinct from compassion fatigue, secondary traumatic stress and burnout (Gray & Mulligan, 2010). Studies involving NHS staff from any discipline were eligible. A focus on the UK NHS context was chosen to enhance the practical clinical relevance of any findings.

Due to the large number of eligible papers available, articles from peer-reviewed journals only were included. As compassion fatigue is a relatively recent construct, no restriction on dates was necessary.

### 2.2 Information sources and search strategy

Papers were sourced from a search of four databases (CINAHL; MEDLINE; ASSIA and PsycINFO), using the following search terms:

**Compassion\*** (intended to capture compassion fatigue and compassion stress) *OR*  
**burnout** *OR* **secondary traumatic stress**

*AND*

**"NHS"** *OR* **"national health service"**

In addition, a hand search of reference lists from previous reviews and other relevant papers was carried out, along with a Google Scholar search.

### **2.3 Bias**

Studies were appraised for quality, including sources of potential bias, using two standardised frameworks. Qualitative studies were appraised using the CASP Qualitative Research Checklist (Critical Appraisal Skills Programme, 1994). Quantitative studies were appraised using the Kmet, Lee, and Cook (2004) standard quality assessment criteria for evaluating primary research papers. The full appraisals are presented in table format in Appendix 1 and Appendix 2, respectively. Issues of quality and bias are also summarised as part of Table 1.

### **2.4 Structure of this review**

The search process is first described, and basic results presented. The methodologies, key findings, and quality appraisal issues of selected studies are then summarised in table format. A synthesis of study findings is presented thematically. In the discussion section, these synthesised findings are discussed in terms of their application of 'compassionate mind' theory to the healthcare context. Finally, the review presents its implications for practice and future research, its limitations and conclusions.

## **3. Results**

### **3.1 Study selection**

*Figure 1* is a diagrammatic summary of the search process, including the numbers of papers screened for eligibility at each stage. In total, 1612 papers were elicited by the initial database search (CINAHL n=162 ASSIA n=1139 PsycINFO n=111 Medline n=200). After limits were added to restrict findings to peer-reviewed journal articles only, this number reduced to

1421 (CINAHL n=83; ASSIA n=1039; PsycINFO n=99; Medline n=200). Of these, 343 were duplicates and 428 were excluded following title review. In total, 536 abstracts were screened, of which 469 were comment pieces, reflective accounts or literature reviews rather than primary research. A further 22 papers were investigating non-UK or non-NHS settings, and 116 papers were not investigating compassion fatigue, burnout, compassion stress or secondary traumatic stress. The full texts of 43 papers were retrieved and assessed for eligibility. Of these, 26 were excluded: 22 did not investigate compassion fatigue, burnout, compassion stress or secondary traumatic stress, while two did measure these constructs but not directly in relation to other factors. Two studies were of very low quality (i.e. the study design was not compatible with its aims and/or there was a lack of basic reporting. Hand searching of relevant reference lists and Google Scholar was completed at this stage. Sixty-three abstracts were screened, of which 3 studies were eligible for inclusion in this review.

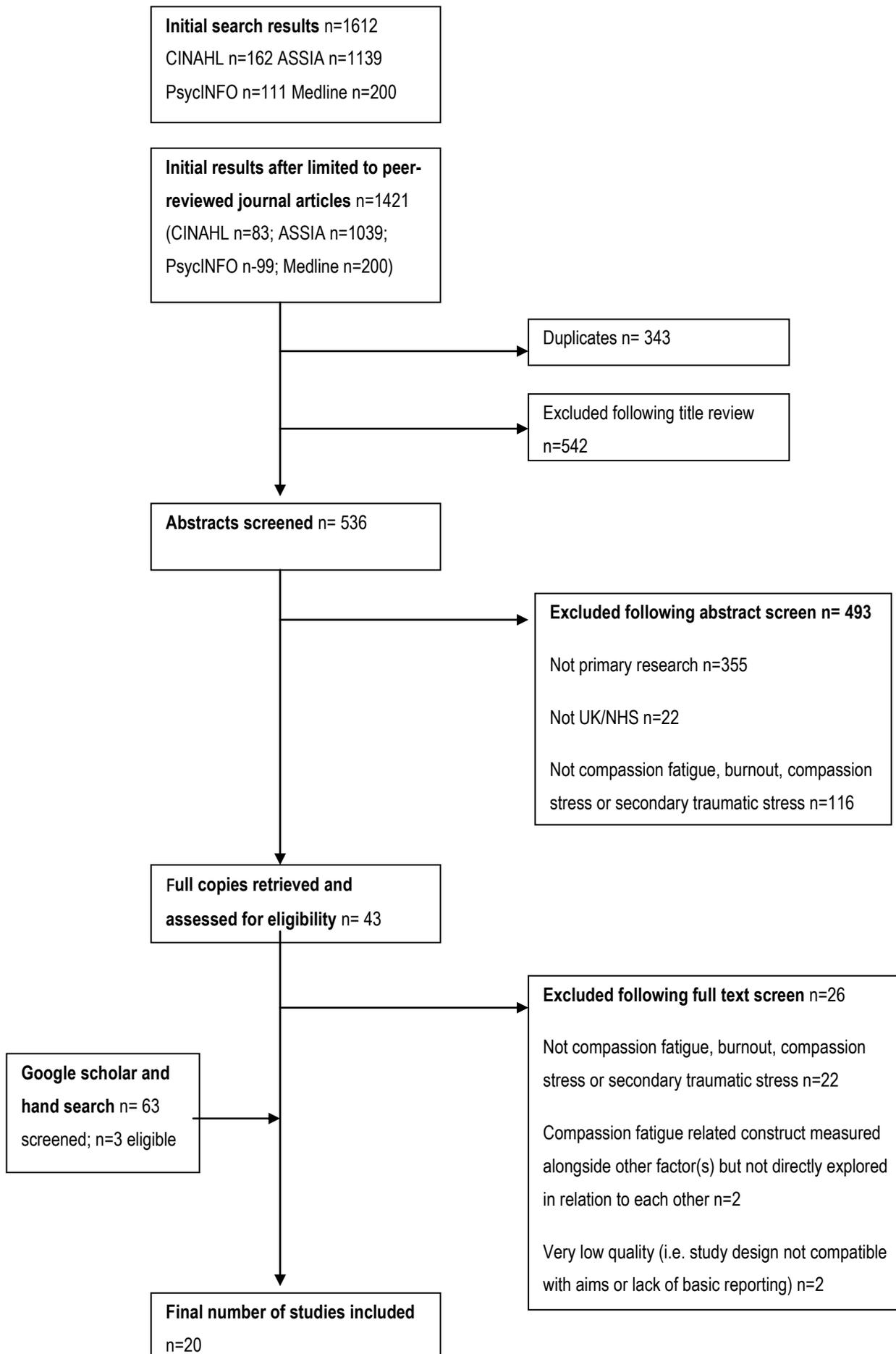


Figure 1. Diagrammatic summary of search process

### 3.2 Study characteristics

*Table 2* is a summary of the data extracted from the 20 papers included in the review. The majority of the papers (n=18) were of a cross-sectional quantitative survey design. Three of the cross-sectional studies were mixed methods, incorporating a qualitative element, either by survey or additional interview. The remaining two papers were intervention studies, using a pre-post quantitative design. The majority of the papers (n=18) measured 'burnout'; two measured 'compassion fatigue'.

Seven papers sampled employees from mental health settings, while 12 sampled from physical health settings. One study sampled staff from residential homes for people with learning disabilities. All studies sampled frontline clinical staff. Most studies sampled nurses and nursing assistants (n= 10) or medical or surgical doctors (n= 4). Four studies sampled mixed professional groups. One study sampled podiatrists.

Table 2. Summarised study characteristics of reviewed papers

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
<b>Blumenthal et al (1998)</b>	Residential homes for people with intellectual disabilities (NHS Trust compared with charity provider)	106 nurses and nursing assistants.  All staff from a sample of 14 NHS Trust homes and 5 charity-run homes invited to take part (n=142)	To test hypothesised relationships between perceived role-clarity, perception of the organisation and burnout amongst support workers	N/A	Cross-sectional design using a quantitative questionnaire.  Data analysed using simple frequencies and non-parametric tests (correlations and between group comparisons)	Role clarity; perception of the organisation	Burnout (emotional exhaustion; depersonalisation; personal accomplishment)	The highest correlations were observed between the organization having unrealistic expectations, and emotional exhaustion (EE) and depersonalisation (DP).  EE was related to how often the organization was seen as listening to views of staff  Poor role clarity had a modest correlation with EE.	A good response rate (77%) although relatively small sample size.  Correlational design: unable to determine causation Confounding variables not controlled for  Correlations were small. Narrow focus on two organisational factors meant not possible to assess their significance relative to that of other potential factors.  Self-report measures - possibility of reporting bias

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
<b>Bowers et al (2011)</b>	136 acute psychiatric wards in 26 NHS Trusts in England	Staff from 136 acute psychiatric wards (6661 staff responses across all wards)	To test hypothesised relationships between leadership, team-working, structure, burnout and attitude to patients	N/A	Multivariate cross-sectional design using a quantitative questionnaire. Principal components analysis (PCA), structural equation modelling and cluster analysis used to explore relationships between variables	Leadership; team-working; structure (i.e. level of order and organisation on the ward) ,	Burnout; attitudes towards 'difficult patients'; conflict and containment rates on wards.	<p>A model was proposed in which leadership influenced teamwork, teamwork influenced structure; which in turn influenced burnout; and burnout influenced attitudes towards patients.</p> <p>Groups divided into "well-functioning" vs. "poorly functioning" teams based on above. Compared burnout and attitudes. Well-functioning teams sig. lower burnout</p>	<p>Generally strong methodology and reporting. Attempted to capture direction of relationships/generate a linear model using structural equation modelling. Moderate correlations.</p> <p>Very large sample size. Possibility of type 1 error in comparison of means as actual scores very similar.</p> <p>Self-report measures - possibility of reporting bias. Response rate 36-52% also potentially limits representativeness</p>
<b>Carson et al (1996)</b>	15 departments in North East Thames region of UK	245 community mental health nurses	To test hypothesised relationship between high caseload size and stress and burnout.	N/A	<p>Cross-sectional design using a quantitative questionnaire.</p> <p>Analysed using non-parametric tests (comparison of means)</p>	Caseloads	Burnout  Occupational Stress	The 'high caseload' group had a significantly higher occupational stress score. No differences were found on burnout.	<p>Conclusions modest and line with data.</p> <p>Some reporting omissions (e.g. demographics, sampling method). Narrow focus on one factor (caseload) meant confounding variables not controlled for. Large s.d's: overlap between high caseload and low caseload group. Cross sectional design: causal inferences not possible.</p>

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Chana et al (2015)	One acute NHS Trust	Opportunity sample of qualified nurses and health care assistants, 102 complete responses (from 310 sampled)	To test hypothesised relationships between work stressors; individual factors; and levels of burnout; psychological distress; and caring behaviours	N/A	Cross-sectional correlational design using a quantitative questionnaire.  Analysed using Spearman's Rho correlations.	Work-related stressors - seven areas (Nursing Stress Scale - Gray-Tot & Anderson, 1981); Individual coping strategies; Demographics	Burnout; psychological distress; self-reported caring behaviours	Work stressors, coping strategies and self-efficacy significantly correlated with burnout and psychological distress. Workload and lack of staff support were the stressors with the strongest association with burnout and psychological distress (anxiety & depression).  Anxiety was positively correlated with all work stressors.  Burnout and psychological distress were predictive of self-reported caring behaviours	Correlational, cross-sectional design limits conclusions regarding causality.  Sample likely not representative: relatively small sample size, with an opportunity sample and fairly low response rate (35%). Sample 90% female.  Possible ceiling effect on caring behaviours scale, as all scored themselves highly. Attitudes not necessarily predictive of actual behaviour.  Small correlations: small amount of variance accounted for

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Coffey & Coleman (2001)	26 NHS medium-secure units in England and Wales	80 community forensic mental health nurses (from 102 sampled nurses)	To establish levels of staff stress and burnout.  To compare differences between staff reporting high vs. low levels of burnout.  To identify factors associated with stress	N/A	Cross-sectional design using a quantitative questionnaire.  Comparison of group means (e.g. data divided into "high burnout" vs. "low burnout" groups) using Mann Whitney U tests.	48 potential stressors including caseload size	Burnout; Psychological distress (General Health Questionnaire) (Goldberg & Hillier, 1979)	Nurses who scored above clinical cut off on GHQ had significantly larger caseload  High burnout group were longer in post and had higher caseloads (not tested for statistical significance)  Caseload size differed significantly between high emotional exhaustion and low emotional exhaustion groups	Good response rate (77%) but relatively small sample size.  Many results reported without statistical significance testing.  Not clear why comparison of means chosen over correlation.  Confounding variables not controlled for. Cross-sectional design limits conclusions regarding causality  Self-report measures - possibility of reporting bias

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Crabbe et al (2002)	Seven units in which risk to staff from patient violence was assessed as high - within two NHS Trusts in Scotland	156 nurses and auxiliary nurses (from a sample of 289) Likely that all nursing staff in these 7 unit were eligible but this is not specified.	To establish levels of violence and aggression experienced by nursing staff.  To test hypothesised relationships between burnout and exposure to violence at work	N/A	Cross-sectional design using a quantitative questionnaire.  Data analysed using descriptive statistics and non-parametric tests (Spearman's Rho correlations)	Frequency and severity of incidents of verbal abuse, threatened assault and physical violence	Burnout	In the past two years, 90% had experienced verbal abuse and threats and over 70% had experienced a physical assault.  A significant (small) positive correlation was found between 'emotional exhaustion' and incidents of violence and aggression.  65% felt Trust was not sufficiently concerned about their emotional state. However 97% found peer nursing colleagues supportive. 72% found senior nurse colleagues supportive.	Did not exclusively use standardised measures. A standardised measure was used for burnout.  Causality: Correlational design. Confounding variables not controlled for.  Possibility of sampling bias: 54% response rate. Participants recruited from units at highest risk of violence.  Self-report measures - possibility of reporting bias  Only small amount of variance accounted for. Unclear how important violence is in relation to other factors.

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Dasan et al (2014)	Emergency care across the UK NHS  (all emergency medicine consultants working in NHS emergency care were sampled - recruited via national register)	681 UK NHS emergency medicine consultants (of n=1317 approached)  Consultants scoring above (n=6) and below (n=6) predefined compassion fatigue thresholds took part in the qualitative interviews.	To explore prevalence, causes and consequences of compassion satisfaction and compassion fatigue	Demand-control-support theory	A sequential mixed-methods design. Cross-sectional  E-survey to all UK NHS emergency medicine consultants, followed by interviews with consultants scoring above (n=6) and below (n=6) predefined thresholds.  Analysed using thematic analysis (qualitative) and multivariate linear regression and logistic regression (quantitative)	Type of workplace; role variety; having positive views of the team; demographics	Compassion satisfaction (CS); compassion fatigue (CF)	A model was generated. The relationship between job demand, control and support was identified as a common theme in accounts from both 'satisfied' and 'fatigued' consultants. Common organisational factors relating to burnout (in interviews) included: targets, resources, size of dept., degree of influence in decision-making/enacting change, and quality of relationships at work.  Consultants with lower CS scores significantly more likely to report irritability with patients, reduced standards of care and making mistakes which could have harmed patients.  Job characteristics and demographics factors explained only 3-5% of variance.	Large sample from across the UK. Entire emergency consultant population included.  However, some factors only explored qualitatively with 12 participants, and this distinction was not always clear in the conclusions.  52% response rate - possible response bias  Large sample increases possibility of detecting statistical differences that are not clinically meaningful.

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Edwards et al (2006)	CMHNs working within the 11 NHS Trusts within Wales were recruited via national register of all CMHNs in Wales	260 community mental health nurses (out of 817 CMHNs contacted via national register)	To establish the degree to which clinical supervision might influence levels of reported burnout	N/A	Cross-sectional design using a quantitative questionnaire.  Data analysed using non-parametric tests (between-groups comparisons and correlations)	Hours of clinical supervision; Quality of supervision	Burnout	Respondents who had not experienced six or more sessions of clinical supervision had significantly higher 'depersonalisation' scores  Higher self-rated quality of supervision was significantly associated with lower levels of emotional exhaustion and depersonalisation  Age and gender were also significantly correlated with depersonalisation (younger, male nurses scored higher for depersonalisation).	32% response rate - potentially those with strong opinions of supervision most likely to respond  Significant but modest correlations - not clear how important supervision is practice/in relation to other factors  Confounding variables not controlled for  Timeframe for '6 supervision sessions' not clear  Cross-sectional design limits conclusions regarding causality
Hill et al (2010)	Alcohol inpatient mental health ward at South London and Maudsley NHS Trust	19 clinical staff from an in-patient alcohol ward	To evaluate a whole team training in terms of reducing burn-out amongst staff	N/A	Comparison of mean burnout scores pre- and post- training	2-day training intervention aimed at preventing burnout	Burnout	Levels of emotional exhaustion and depersonalization had been slightly reduced at one month post-intervention. Feelings of personal accomplishment at work significantly risen	Emotional exhaustion and depersonalisation differences were small and non-significant  Not possible to determine if intervention itself or other indirect effects e.g. whole team getting together  Confounding variables not controlled for. Small sample.

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Johnson et al (2012)	19 NHS mental health Trusts in England: 100 wards and 36 community teams.	Clinical staff from a range of professional groups. 3545 questionnaires distributed, - 2258 valid responses returned.	To describe staff satisfaction and wellbeing  To explore how far variations in morale between settings and professions may be accounted for by job characteristic	Demand-control-support theory	Cross-sectional survey design.  Analysed using multi-level regression	Type of work setting; level of job demands; level of perceived autonomy; level of support from managers and colleagues.	Burnout;  "Job-related affective well-being"	Factors associated with greater emotional strain included: working in a CMHT or psychiatric intensive care unit (PICU); High job demands; low autonomy; limited support from managers and colleagues.  Greater positive engagement was associated with high job demands, autonomy and support from managers and colleagues  Results supported demand-control-support model	Wide differences in response rate per ward.  64% response rate. Possibility of systematic differences between responders and non-responders.  Cross-sectional design limits conclusions regarding causality  Large overall sample but some subgroups were small.
Mandy (2000)	NHS settings (the national register for podiatrists was used to identify potential participants)	172 newly qualified podiatrists (500 podiatrists - randomly selected from all newly qualified podiatrists in the UK)	To assess levels of burnout among this population and explore relationships between burnout and work stressors	N/A	Cross-sectional survey design.  Correlational analysis - some parametric and some non-parametric tests	Work stress	Burnout	Correlations between work stressors and burnout were small and non-significant.  Most commonly reported work stressors: quantity of work; isolation; and lack of career structure.  Patient contact was commonly reported to be rewarding.	Standardised measures used.  Good sample size and efforts to reduce bias in sampling method. 46% response rate means sample may not be representative of total population.  Only 28% of the sample completed qualitative section

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Rafferty et al (2007)	30 English NHS acute trusts	3984 nurses; 118,752 general, orthopaedic, and vascular surgery patients	To examine the effects of patient-to-nurse ratios on patient outcomes and nurse job dissatisfaction, burnout and nurse-rated quality of care.	N/A	Cross-sectional analysis combining nurse survey data with patient outcome data  Logistic regression	Hospital-wide staffing levels (Patient: nurse ratios)	Burnout;  Reported quality of care; Actual mortality rates and failure to rescue' rates	Nurses in hospitals with highest patient to nurse ratios were approximately twice as likely to be dissatisfied with their jobs, to show high burnout levels, and to report low or deteriorating quality of care on their wards and hospitals - as compared with nurses in hospitals with the lowest patient: nurse ratios. Patient outcomes also sig. better in hospitals with lower patient: nurse ratios.	Results supported in detail - generally good quality. Confounding variables controlled for. Only study to test patient outcomes associated with burnout  Cross-sectional design - direction of relationship not tested e.g. job satisfaction and burnout.  Comparisons were between highest and lowest caseload groups (i.e. extremes) only.

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Ramirez et al (1996)	UK hospitals: Gastroenterologists, surgeons, radiologists, and oncologists (recruited via professional bodies)	882 UK consultants (of 1133 approached for participation)	To estimate burnout prevalence  To test hypothesis that high job stress and low job satisfaction are associated with burnout and psychiatric 'morbidity'  To establish components of job stress and satisfaction.	N/A	Cross-sectional survey  Analysis:  Chi square comparison of means  Principal components analysis  Logistic regression/odds ratios	Job stress  Job satisfaction	Burnout  Psychiatric 'morbidity'	High levels of job stress and low levels of job satisfaction were associated with burnout and psychiatric 'morbidity'  Burnout and psychiatric 'morbidity' were associated with: 1) feeling overloaded, 2) Feeling poorly managed and resourced; 3) dealing with patients' suffering.  Burnout was associated with low satisfaction in 1) relationships with patients, relatives, and staff 2) professional status/esteem; 3) intellectual stimulation.	Good response rate (78%). Generally good quality.  However, likely degree of overlap between concepts of depression, burnout and job stress - not discussed  Large sample size improves generalisability but increases possibility of type 1 error. Effect sizes not reported for comparison of means.  Odds ratios for associations were technically 'weak' but statistically significant (not acknowledged in conclusions)

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Sharma et al (2008a)	NHS hospitals across the UK	253 surgeons and 177 nurses  (of 455 surgeons and 326 nurses approached from professional registers for participation )	To examine prevalence of burnout  To test for a relationship between burnout and the amount of cancer-related work/ a range of other predictors	N/A	Cross-sectional postal survey.  Logistic regression analysis	Percentage of cancer-related workload;  training in communication and management skills  Coping strategies  Level of work satisfaction	Burnout  'Psychiatric morbidity'	The hypothesis that cancer-related work would predict higher burnout was not supported.  Coping strategies; level of work satisfaction and perceived adequacy of training in communication and management skills were significantly negatively correlated with GHQ and MBI scores.  Surgeons scored higher for burnout (DP and PA) than nurses.	Response rate 55.6%  Correlation not causation  Work satisfaction potentially an overlapping construct with burnout? Many 'predictors' seemed likely to be consequences of burnout e.g. 'mix less with friends'  Narrow range of variables tested - not clear why specific variables chosen and how important these are in practice
Sharma et al (2008b)	NHS hospitals across the UK	501 colorectal and vascular surgeons practicing in the NHS (recruited from professional registers - 853 approached for participation )	To examine prevalence of burnout  To test for a relationship between burnout and the amount of cancer-related work/ a range of other predictors	N/A	Cross-sectional postal survey.  Logistic regression analysis	Percentage of cancer-related workload;  training in communication and management skills  Coping strategies  Level of work satisfaction	Burnout;  'Psychiatric morbidity'	The hypothesis that cancer-related work would predict higher burnout was not supported.  Level of work satisfaction and perceived adequacy of training in communication and management skills were significantly negatively correlated with GHQ and MBI scores.	Response rate of 58.7%.  Correlation not causation  Work satisfaction potentially an overlapping construct with burnout? Many 'predictors' seemed likely to be consequences of burnout e.g. 'mix less with friends'  Narrow range of variables tested - not clear why specific variables chosen and how important these are in practice

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Sherring & Knight (2009) An exploration of burnout among city mental health nurses	A city NHS Trust	172 mental health nurses  (All 475 mental health nurses in the Trust were approached for participation )	To describe levels of burnout in this population  To explore relationships between burnout and work-related variables; and demographics	N/A	Cross-sectional survey.  Comparison of means (one-way ANOVA and t-test)	Clinical supervision (frequency and adequacy); feeling supported; feeling valued; feeling involved in decision making (agree/disagree Likert scales)	Burnout	Burnout was "significantly related" with: academic qualifications; the frequency and adequacy of clinical supervision; feeling supported and valued at work; feeling involved in decision making and changes	Representative of total population? 35% response rate  Confounding variables considered  Correlation not causation

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
<b>Teasdale et al (2001) Clinical supervision and support for nurses: an evaluation study</b>	11 randomly selected hospital and community NHS Trusts in one region in England.	211 qualified nurses (opportunity sample)	To assess the effects of clinical supervision and informal support	N/A	Mixed methods survey design.  Quantitative: Non-parametric tests. Correlational analysis  Qualitative: analysis of nurses' descriptions of a recent "critical incident"	Clinical supervision  Perceptions of support at work	Burnout  Self-reported coping	No significant differences in levels of burnout between supervised and unsupervised nurses.  However, supervised nurses reported a more listening and supportive management, coping better at work. This finding was stronger for more junior nurses.  Qualitative analyses highlighted emotions of fear and vulnerability among nurses  Informal support was used frequently  The quality of the support was an important factor: clinical supervision was not always felt to be supportive	Quality of supervision and informal support were not captured in quantitative analysis despite seeming important factors in qualitative analysis.

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Upton et al (2012)	127 NHS Trusts	342 surgeons (of which 89 also completed comments box for qualitative analysis)  n=1971 approached for participation	To assess the prevalence of psychological 'morbidity' across different surgical specialties and identify predictor variables of burnout in surgeons.	N/A	Cross-sectional survey. Mixed methods design.  Regression analysis.  Qualitative content analysis	Demographics  Qualitative included	Burnout; Mood	Participants reported high levels of cynicism and exhaustion burnout. Burnout was not related to specialty, grade, or hours worked per week.  Qualitative analysis suggested that organisational and management issues likely contribute to burnout (e.g. loss of autonomy; fear of stigmatisation; bullying). Qualitative analysis suggested that clinical work with patients was the biggest source of job satisfaction.	17% response rate - data potentially from most highly stressed surgeons  Brief questionnaire design limited opportunity for depth of understanding  Rigorous qualitative method.  Quantitative section only explored relationships between demographics, mood and burnout, not organisational factors. However in qualitative section organisational factors emerged as important (despite not being directly asked about)
Wallbank & Hatton (2011)	NHS West Midlands	22 Health visitor and school nurse leaders	To test the effectiveness of a supervision intervention in reducing burnout levels among senior nursing staff	N/A	Intervention study. Pre-post comparison of group means	An intervention - Six sessions of a new model of clinical supervision ("restorative, solution-focussed" model)	Burnout; Compassion Satisfaction; Compassion fatigue; Impact of events scale	Pre-intervention levels of burnout were high.  Burnout and stress reduced with new model of supervision	Reporting issues: discussion mixed with in results  Supervision took place concurrently with leadership training programme  No control group  Simple design: not clear what elements of supervision were helpful  No statistical testing possible due to small sample size

Author (Date)	Setting	Participants	Aim	Theory testing?	Design/Method	Individual/organisational factors	Compassion-related construct(s)	Key findings	Key quality appraisal points
Watts et al (2013)	Three NHS Trusts	129 nurses and healthcare assistants	Examine relationships between burnout and organisational culture and support (as perceived by nursing staff)	N/A	Cross-sectional survey design.  Stepwise multiple regression analysis	Organisational culture; Workplace support	Burnout;	<p>Significant associations found between culture and burnout. Demographics did not predict burnout</p> <p>Innovative organisational culture predicted reported feelings of personal accomplishment.</p> <p>Bureaucratic culture (hierarchical, low autonomy) predicted lower personal accomplishment</p> <p>Perceived organisational support explained 5.5% of variance in emotional exhaustion and 4.9% depersonalisation.</p> <p>Supportive organisational culture predicted lower depersonalisation</p>	<p>One of few studies to attempt to capture culture - a complex construct</p> <p>Controlled for demographics in analysis</p> <p>Correlational design cannot determine causation</p> <p>Unrepresentative sample? Only 129 nurses recruited from the three Trusts.</p>

## 4. Synthesis of findings

### 4.1 Common quality appraisal issues.

Studies were assessed using quality appraisal frameworks (CASP, 1994; Kmet, Lee, & Cook, 2004). Full appraisal information for each paper is detailed in Appendices 1 and 2, and summarised in Table 1. Most of the studies were of fair quality. However, the appraisal process highlighted some common methodological issues, outlined here.

**Causality.** Most studies (n=18) were cross-sectional in design. Predominantly, these were correlational, testing relationships between compassion fatigue or burnout and one or more other factors. Other studies divided data into subgroups, for example comparing the mean burnout scores between 'high caseload' vs. 'low caseload' groups. These designs cannot ascertain that compassion fatigue is *caused by* the other factors measured (e.g. perceived supportiveness of colleagues, workload etc.): compassion fatigue may equally affect how supportive colleagues are perceived to be, or how effectively one manages one's workload. Issues of causality were often further compounded by a lack of consideration to potentially confounding variables. Two studies used an interventional, pre-post design (Hill et al., 2010; Wallbank & Hatton, 2011). However, both studies had methodological flaws that limited their ability to draw conclusions about causality.

**Representativeness.** Many studies used a survey design and were consequently susceptible to response bias. Response rates were often good, although a significant minority of studies had response rates below 60%. This may affect the representativeness of the samples.

**Weak correlations.** It was common for the correlational studies to report statistically significant correlations that accounted for relatively little of the total variability in burnout or

compassion fatigue scores. It therefore cannot be assumed that these significant correlations were equivalent to clinically meaningful relationships, and this was not always acknowledged in the papers' conclusions. In this review, Cohen's (1988, 1992) criteria for small, medium and large effect sizes ( $r=0.1$ ,  $r=0.3$  and  $r=0.5$ , respectively) are used to help appraise the likely 'real world' importance of reported correlations.

**Self-report issues.** The majority of the studies used self-report measures, raising potential issues around differences between perceptions or attitudes, and actual behaviour or organisational factors (Ajzen, 2002; Donaldson & Grant-Vallone, 2002).

## 4.2 Individual factors

Individual factors seemed to have relatively little explanatory power for compassion fatigue. Dasan et al. (2015) found modest correlations between compassion fatigue and some demographic factors, but reported that these collectively explained only 3-5% of the variance in compassion fatigue scores. Edwards et al. (2006) reported that age and gender significantly correlated with depersonalisation (with younger, male nurses scoring more highly for depersonalisation), however this was based on relatively small, unequal sample sizes (male  $n=78$  female  $n=135$ ), and other variables were not controlled for. Sherring and Knight (2009) reported that there was a statistically significant difference between mean emotional exhaustion scores of staff with different levels of academic qualification, with a medium effect size of 0.6. However, potentially confounding variables (such as job role, or frequency of supervision) were not controlled for. Chana et al. (2015) did not find any significant correlations between demographics and burnout or psychological distress. Individual coping strategies were found to correlate with burnout or compassion fatigue in four studies, with burnout or compassion fatigue being predictive of poor coping strategies, such as alcohol

use, and keeping problems to oneself (Chana et al., 2015; Dasan et al., 2015; Sharma, Sharp, Walker, & Monson, 2008a, 2008b).

#### **4.3 Organisational factors: exposure to trauma**

Four studies reported associations between compassion fatigue or burnout and high exposure to direct or vicarious trauma. Crabbe et al. (2002) sampled 156 nurses and auxiliary nurses from seven units, within two Scottish NHS Trusts. A survey explored frequency and severity of incidents of verbal abuse, threatened assault and physical violence, alongside a measure of burnout (Maslach Burnout Inventory, Maslach & Jackson, 1981). Rates of self-reported violence were high: in the past two years, 90% had experienced verbal abuse, and over 70% had experienced a physical assault. Rates of burnout were also reported to be high, relative to normative data. A significant positive correlation between 'emotional exhaustion' subscale of the MBI, and incidents of violence and aggression was found, although this correlation was small to medium (correlation coefficients of 0.23 and 0.28 for verbal abuse and physical assault, respectively). This study was limited in that just one predictor variable (i.e. violence) was investigated incorporated into the statistical analysis. It was therefore unclear how important a factor exposure to violence and aggression was, and to what extent its impact might be moderated by support structures or other factors. Prevalence data for incidences of violence would have been affected by the fact that staff were sampled from wards at 'high risk' of violence and aggression.

Sharma, Sharp, Walker, and Monson (2008a; 2008b) conducted two similar studies with colorectal and vascular surgeons, and colorectal surgeons and nurses, respectively. In both studies, the hypothesis that cancer-related work would predict higher burnout was not supported. More important factors included coping strategies; level of work satisfaction and

perceived adequacy of training in communication and management skills: these factors were significantly negatively correlated with 'psychiatric 'morbidity'', as measured by the General Health Questionnaire (GHQ) (Goldberg & Williams, 1988), and burnout, as measured by the MBI (Maslach & Jackson, 1981). Unfortunately, the design of Sharma et al.'s (2008a, 2008b) studies means that the findings do not clarify whether cancer-related work does indeed involve a higher exposure to trauma (potentially mitigated by other factors such as more training or support) or whether no correlation was found because other disciplines involved similar exposure to trauma, or thirdly, whether exposure to trauma was unrelated to burnout.

Links between exposure to trauma and compassion fatigue were also reported by Chana et al. (2015) and Ramirez, Graham, Richards, Cull, and Gregory (1996): these studies are discussed in subsequent sections, as trauma was a relatively small focus.

#### **4.4 Organisational factors: workload and resources**

Six studies reported that compassion fatigue may be associated with workload, or perceived pressure from work demands. Rafferty et al. (2010) examined hospital-wide patient-to-nurse ratios as a hypothesised predictor of job dissatisfaction, nurse-rated quality of care, and burnout - as measured by the MBI (Maslach & Jackson, 1981) - through a survey of 3984 hospital nurses. In addition, the study incorporated objective patient outcomes, with data sampled from 118,752 surgery patients (Rafferty et al, 2007). Nurses in hospitals with the highest patient-to-nurse ratios were approximately twice as likely to be dissatisfied with their jobs, and to show high burnout levels, as compared with nurses in hospitals with the lowest patient-to-nurse ratios. Moreover, nurses in the poorest staffed hospitals were between 71-92% more likely to report low or deteriorating quality of care on their wards and hospitals.

Patient mortality and failure-to-rescue rates were significantly better in hospitals with lower patient-to-nurse ratios (i.e. better nurse staffing). This was a large-scale, good quality study which met the majority of the Kmet et al. (2004) criteria. However, importantly, comparisons were made between the upper and lower quartiles (i.e. extremes); differences between the middle quartiles were not statistically significant, suggesting that it may be that only extremely high workloads meaningfully contribute to compassion fatigue. Moreover, causality cannot be inferred and, as the study focussed narrowly on patient-to-nurse ratios, it was not able to capture or control for other variables.

Coffey and Coleman (2001) surveyed 80 forensic community mental health nurses, with the aim of testing associations between burnout (outcome variable 1), anxiety and depression (outcome variable 2), caseload size (predictor variable 1) and support from managers and colleagues (predictor variable 2). Nurses who scored above the clinical 'cut-off' on the General Health Questionnaire (likely meeting the threshold for diagnosis of anxiety and/or depression) had a significantly larger self-reported caseload than those who scored below the clinical cut-off. The data were also divided into 'high burnout' and 'low burnout' groups. The high burnout group were longer in post and had higher self-reported caseloads. However, this was not tested for statistical significance due to the small sample size of these subgroups. There was some evidence that supportiveness of managers and colleagues was associated with burnout (e.g. a smaller percentage of individuals in the low emotional exhaustion group found their manager unsupportive in comparison with the high emotional exhaustion group), although this was not subject to statistical significance testing. Overall, the lack of significance testing for some subtests, and a lack of attempt to control for confounding variables, meant that the conclusions of this study were tentative: there was

some evidence to suggest that caseload size may be associated with anxiety and/or depression, and possibly with burnout.

Chana et al. (2015) reported similar findings in their study of 102 nurses and healthcare assistants from an acute NHS Trust. Associations were tested between a range of work-related stressors (predictor variables), burnout, and psychological distress and self-reported caring behaviours (outcome variables). A small, statistically significant positive correlation between self-reported workload, and the depersonalisation and emotional exhaustion subscales of the MBI (Maslach & Jackson, 1981) was reported. Perceived workload and lack of staff support were also found to be the most important explanatory variables for mean psychological distress (anxiety and depression) among staff. Other variables included 'death and dying', which significantly correlated with the emotional exhaustion subscale of the MBI (a small-to-medium correlation coefficient of 0.263), but not with the depersonalisation subscale (which would be more likely to predict reduced compassion). 'Conflict with nurses and supervisors' positively correlated with both emotional exhaustion (a subcomponent of burnout) and anxiety (small to medium, statistically significant correlation coefficients of 0.272 and 0.297, respectively). In turn, emotional exhaustion and depersonalisation scores were predictive of poorer self-reported caring behaviours (medium correlation coefficients of 0.307 and 0.361, respectively). Non-parametric tests were used, making it difficult to isolate variables from one another or control for confounding variables. The sample was likely unrepresentative, as an opportunity sample was used, and a 35% response rate was reported within that.

Similar findings were reported among professional groups other than nursing. Mandy (2000) surveyed 172 newly qualified podiatrists, using a mixed-methods analysis, with the aim of identifying work stressors that may contribute to burnout. In the qualitative analysis, it

was reported that patient contact was commonly found to be rewarding, while common stressors were at the organisational level. The most commonly reported work stressors were quantity of work; isolation; lack of patients' understanding of the podiatrists work and lack of career structure. However, correlations between work stressors and burnout were small and not statistically significant. One third of the sample had high burnout relative to normative data, although most had high personal accomplishment scores. The report's conclusions hypothesised that the personal accomplishment generated by the direct patient work may have mitigated the negative impact of the work stressors on levels of overall burnout.

A high level of work demands was also a reported factor relating to compassion fatigue and burnout in studies by Dasan et al. (2015) and Johnson et al. (2012), who used the JDCS model (Johnson & Hall, 1988) in their research. These studies are considered separately in section 4.7.

The relationship between high work demands and compassion fatigue was not a universal finding in this review. Carson et al (1996) surveyed 245 community mental health nurses from 15 departments in the North East Thames region of the UK, with the aim of testing hypothesised relationship between high caseload size (predictor variable), and stress and burnout (outcome variables). Data were divided into high vs. low caseload groups, with mean 'occupational stress'; and burnout scores for each group compared using non-parametric tests. The 'high caseload' group had a significantly higher occupational stress score. However, no differences were found on burnout, suggesting that high demands and work stress were not predictive of reduced compassion for others. Importantly, this study had a narrow focus on one variable and so it was not possible to control for potentially confounding variables, or to explore potentially moderating factors. Large standard deviations meant there was some

overlap between the high caseload and low caseload group in terms of numbers, and there were also some reporting omissions: it was not clear what sampling method was used, increasing the possibility of bias.

Ramirez, Graham, Richards, Cull, and Gregory (1996) carried out a large-scale cross-sectional survey of 882 gastroenterologists, surgeons, radiologists and oncologists, recruited via professional bodies. High levels of job stress and low levels of job satisfaction were associated with burnout and 'psychiatric 'morbidity'', as measured using the MBI (Maslach & Jackson, 1981) and GHQ (Goldberg & Williams, 1988). Specifically, burnout and 'psychiatric 'morbidity'' were significantly associated with: feeling overloaded, feeling poorly managed and resourced, dealing with patients' suffering. This finding supports those of other studies in this review, that exposure to trauma or others' suffering is a predictor of compassion fatigue. The findings also suggested that this aspect of caring work may be worsened by organisational factors, including feeling poorly resourced and overloaded. However, it is important to note that 'feeling overloaded' and 'feeling poorly managed' may equally be *effects* of burnout. The likely degree of overlap between concepts of depression, burnout and job stress was also not acknowledged or addressed in this study. The study had a good response rate (78%) and a large sample size, improving generalisability of findings.

#### **4.5 Organisational factors: clinical supervision and training**

**Clinical supervision.** Three studies explored clinical supervision in relation to burnout (Edwards et al, 2006; Teasdale et al, 2001; Wallbank & Hatton, 2011). Overall, support for the role of clinical supervision was limited, largely due to methodological issues.

Teasdale and colleagues (2001) explored differences in burnout, as measured by the MBI (Maslach & Jackson, 1981) between supervised and unsupervised nurses in acute health

settings (n=211). No statistically significant differences between supervised and unsupervised nurses were reported. However, qualitative analyses highlighted emotions of fear and vulnerability among nurses and suggested that informal support was used frequently. Importantly, clinical supervision was not always felt to be supportive and this may be one explanation for the lack of significant differences between supervised and unsupervised nurses in terms of burnout. The quality of supervision, or use of more informal support from colleagues, were not assessed quantitatively, despite emerging as important factors in the qualitative interviews.

Wallbank and Hatton (2011) piloted a model of 'restorative supervision' with 22 senior school nurses and health visitors in a pre-post study design. Pre-intervention levels of burnout were reported to be high, relative to normative data. Burnout and stress was reported to have reduced following a new model of supervision. However, methodological limitations limit the possibility of drawing conclusions; a very small sample was used (n=22) and no statistical significance testing was performed. Moreover, the supervision intervention took place concurrently with a leadership training programme, and there was no control group, meaning it was impossible to isolate the effect of the supervision intervention itself.

Edwards and colleagues (2006) surveyed 260 community mental health nurses (CMHNs) in Wales. The survey comprised questions about the quantity and quality of supervision experienced, as well as the MBI measure of burnout (Maslach & Jackson, 1981). Respondents who had not experienced six or more sessions of clinical supervision indicated significantly higher scores on the depersonalization subscale of the MBI in comparison to those who had experienced at least six sessions (the timescale for these sessions was not specified). No significant difference was found with respect to the quantity of supervision and the remaining two subscales of the MBI (emotional exhaustion and personal accomplishment).

Higher self-rated quality of supervision was significantly associated with lower levels of emotional exhaustion ( $r=-0.148$ ) and depersonalisation ( $r=-0.220$ ). However, it is important to note that, although these associations were statistically significant, the correlations were small in size and it was therefore unclear how meaningful the association might be in practice. Moreover, as clinical supervision was the only predictor variable explored, conclusions about the influence of supervision in relation to other potentially influential factors (or potential confounding variables) cannot be drawn. A 32% response rate was obtained, increasing potential bias.

Sherring and Knight (2009), in their survey of 172 mental health nurses, reported that the self-reported frequency of clinical supervision was associated with levels of burnout, as measured by the MBI (Maslach & Jackson, 1981). Specifically, nurses who reported clinical supervision every two to three months had significantly higher emotional exhaustion scores than those reporting monthly clinical supervision. In turn, nurses who had no supervision had higher self-reported levels of emotional exhaustion than those receiving supervision monthly. Participants were also asked to indicate the extent of their agreement with the statement: 'I receive enough clinical supervision.' Those who agreed, had significantly lower emotional exhaustion scores compared with those who disagreed, with a large effect size. However, scores for the other subscales of the MBI (personal accomplishment and depersonalisation) were not reported, suggesting that clinical supervision was not significantly associated with these factors. This limits the conclusions that can be drawn about the potential influence of clinical supervision on compassion for others. The cross-sectional design limits conclusions about causality; emotional exhaustion may affect the perception of supervision as well as supervision influencing emotional exhaustion. Other factors, included feeling supported and

valued at work, and feeling involved in decision-making and changes, were also significantly associated with emotional exhaustion.

**Training.** Hill and colleagues (2010) used a pre-post, repeated measures design to test the effectiveness of a two-day training intervention in reducing levels of burnout among a team of staff working in an inpatient mental health setting. The report itself overstated its conclusions and did not acknowledge the limitations of its small sample size (n=19) or its lack of a control group. An increase in personal accomplishment scores was statistically significant. However, the reported reductions in emotional exhaustion and depersonalisation subscales of the MBI (Maslach & Jackson, 1981) were, in fact, small and non-significant and this was not acknowledged. The lack of explication of the content and process of the training meant that it was not clear what aspects of the intervention may have been helpful (and/or whether indirect effects, such as the whole team getting together, or the recognition of the problem of burnout, may have been influential).

#### **4.6 Organisational factors: autonomy and involvement**

A number of studies reported compassion fatigue or burnout to be related to feeling undervalued, a perceived lack of professional autonomy and/or involvement in decision-making and change. Blumenthal and colleagues (1998) surveyed 106 nurses and nursing assistants from a sample of 14 NHS Trust homes (and five charity-run homes) for people with intellectual disabilities. The aim of the study was to test hypothesised relationships between perceived clarity of role, perception of the organisation (predictor variables), and burnout (outcome variable). Data were quantitative and analysed using non-parametric tests. Staff in the NHS samples had significantly higher mean burnout scores than those in the charity settings, supporting the general proposition that organisational factors may be associated

with burnout. Most role clarity items had small, statistically significant negative correlations with most burnout items ( $r=-0.08$  to  $0.35$ ) (Maslach & Jackson, 1981). Interestingly, however, the strongest correlations were observed between perceived unrealistic expectations from the organisation, and the emotional exhaustion ( $r=0.41$ ) and depersonalisation ( $r=0.35$ ) subscales of the MBI (Maslach & Jackson, 1981). Emotional exhaustion was also moderately correlated with the extent to which the organisation was perceived as listening to staff ( $r=0.39$ ). This was a study with a good response rate (75%) and which met most of the Kmet et al. (2004) criteria. However, the direction of the relationships cannot be ascertained: it may be that higher levels of burnout influence perceptions of the organisation as much as a non-listening organisation influences burnout.

Watts, Robertson, Winter, and Leeson (2013) surveyed 129 nurses, across three NHS Trusts. The Organisational Culture Index (Wallach, 1983) was used to capture the degree to which an organisation was perceived as 'bureaucratic', 'supportive' or 'innovative'. Bureaucratic culture was defined as hierarchical; procedural; structured; regulated; cautious; and power-oriented. Innovative culture was characterised as risk-taking, results-oriented, creative, pressurised, stimulating, challenging, enterprising and driving. Supportive organisational cultures were defined as: collaborative, relationships-oriented, encouraging, sociable, valuing personal freedom, equitable, safe, and trusting (Watts et al., 2013). Mean scores indicated that organisational culture among this sample was perceived to be bureaucratic overall, although the highest individual scores were for innovative items (particularly 'results-oriented' and 'pressurised' items). Supportive items on the questionnaire received the least agreement. Mean levels of burnout were reported as high, relative to normative data. However, correlation coefficients and statistical testing were not reported for associations between burnout and culture, minimising the extent to which conclusions

may be drawn. Moreover, data were not given regarding individual items of the subscales so it was not clear which aspects of an innovative or bureaucratic culture might be protective or predictive of burnout.

Upton et al (2012) surveyed 342 surgeons across 127 NHS Trusts in a mixed-methods cross-sectional design. Qualitative comments were received from 89 participants, where "loss of control" regarding one's responsibilities at work was one of a small number of themes related to burnout. Other themes included "fear of stigmatisation" and consequent hiding of feelings of stress, as well as "bullying/harassment" as a contributor to burnout. The final theme was "clinical satisfaction", which referred to the finding that clinical work with patients seemed to be a protective factor against burnout (echoing the finding reported by Mandy, 2000 in her study with podiatrists). These factors were not included as part of the quantitative element of Upton and colleagues' (2014) study. However, qualitative data were based on a relatively large sub-sample, across a range of clinical settings, and the thematic analysis appeared rigorous and reliable according to the CASP (1994) quality framework. Due to the 17% overall response rate, is it unlikely that this constituted a representative sample of UK surgeons.

Bowers, Nijman, Simpson, and Jones (2011) sampled staff from 136 acute psychiatric wards in 26 NHS trusts in England. A cross-sectional survey was used to test hypothesised relationships between leadership, team-working, 'structure', burnout and attitude to patients. The authors attempted to capture direction of relationships by generating a linear model using structural equation modelling (SEM). Moderate correlations were found between variables: a linear model was proposed in which leadership influenced teamwork, teamwork influenced structure; which in turn influenced burnout; and burnout influenced attitudes towards patients. An interesting finding of this study was the role of structure: the

apparent importance of clear rules and procedures in preventing burnout in this inpatient context. Generally this study had a strong methodology (Kmet et al., 2004). However, a key limitation was a lack of explication of the type or quality of leadership and teamwork in the reporting, so that the practice implications were unclear. A response rate of 36-52% potentially limits the representativeness of findings, and despite the use of SEM, the cross sectional design means that the linear model generated is nevertheless correlational not causal.

#### **4.7 Organisational factors: relationship between job demands, support, and autonomy**

Two studies in this review explicitly referred to psychological theory, attempting to explain how different factors may interact to promote or prevent compassion fatigue. Both used the JDCS model (Johnson & Hall, 1988).

Johnson and colleagues (2012) conducted a large-scale study of 2258 clinical staff from a range of professional groups within 19 mental health Trusts in England (100 wards and 36 community teams). The study explored how far variations in burnout between settings and professions may be accounted for by job characteristics, and was explicitly informed by the JDCS model (Johnson & Hall, 1988). A cross-sectional survey design was used, with data analysed using multiple regression. Findings supported the model, with a combination of high job demands; low autonomy; and limited support from managers and colleagues predictive of significantly greater emotional strain. Interestingly, greater positive engagement was associated with high job demands, autonomy and support from managers and colleagues, suggesting that exposure to high demands can be moderated by other factors (i.e. autonomy and support). Autonomy was reported to be a more influential moderating factor than support in this respect, with 1 point higher score for control associated with a 0.38 s.d.

increase in positive engagement. The cross sectional, self-report design limits conclusions regarding causality (e.g. 'burnt out' staff could perceive others as less supportive, and perceive themselves as having less control).

Dasan and colleagues (2015) sampled 681 NHS emergency medicine consultants, exploring causes and consequences of compassion satisfaction and compassion fatigue using a sequential, mixed-methods design. An e-survey was distributed to all 1317 NHS emergency medicine consultants. Following regression analyses, surgeons were grouped into 'high compassion fatigue'; and 'low compassion fatigue'. A purposive sample of six consultants from each group was then selected for an in-depth interview, which was analysed using thematic analysis. A model was generated to which the JDCS (Johnson & Hall, 1988) model was subsequently applied: the relationship between job demand, control and support was identified as a common theme in accounts from both 'satisfied' and 'fatigued' consultants. Consultants with lower compassion satisfaction scores were significantly more likely to report irritability with patients, reduced standards of care, and making mistakes which could have harmed, or had harmed, patients.

In qualitative analysis, common organisational factors relating to compassion fatigue included having to work towards strict targets, and with insufficient resources. The way in which workload intensity may affect compassion fatigue was also explicated: the high intensity workload was described to impact both physically (having to work for longer or more intensely) and emotionally (by raising anxiety about the quality and safety of care). 'Fatigued' consultants, in contrast to the 'satisfied' consultants, reported finding it harder to be compassionate, for example referring patients who were felt to be wasting resources or insufficiently appreciative. Factors mitigating the impact of these stressors included the degree of influence in decision-making/enacting change, and the quality of relationships at

work. Supportive relationships at work and positive views of the team were both themes distinguishing the 'satisfied' consultants from their 'fatigued' peers, and factors that consultants felt 'moderated' the impact of other stressors. These factors were not tested quantitatively, and so were based on responses from a small proportion of (highly fatigued and highly satisfied) consultants. However, the qualitative element of this study met the majority of the CASP (1994) criteria and gave a richer understanding of the processes of compassion fatigue.

## 5. Discussion

This review of the UK compassion fatigue literature elicited 20 eligible primary-research studies, predominantly of cross-sectional survey design. The synthesis of findings suggested that factors associated with compassion fatigue among NHS staff may be: exposure to a high level of trauma, excessive workload or insufficient resources, a lack of supportive relationships at work (potentially including formal clinical supervision), and a perceived lack of autonomy or involvement in organisational decision-making.

The findings of this review are broadly in keeping with evidence from related reviews of compassion and burnout in healthcare in other European countries (Bria et al., 2012; Mccaffrey & Mcconnell, 2015; Sinclair et al., 2016). This includes findings that prevalence of compassion fatigue is often high among healthcare professionals, and that organisational factors appear significant (Bria et al., 2012; Mccaffrey & Mcconnell, 2015; Sinclair et al., 2016). The nature of relevant organisational factors in this NHS-focused review is also similar to those reported in reviews of studies from other countries (Bria et al., 2012; Mccaffrey & Mcconnell, 2015; Sinclair et al., 2016).

### 5.1 Implications for theoretical propositions of 'compassionate mind'

The review findings are tentatively supportive of the application of a 'compassionate mind' approach to healthcare organisations (Cole-King & Gilbert, 2011; Crawford et al., 2014; Paul Gilbert, 2009b). For example, the proposition that caring work inherently involves the task of managing threat-related emotion is supported by the potential association between compassion fatigue and exposure to high levels of trauma. The finding that patient work can often also be rewarding or satisfying (Dasan, 2015; Mandy, 2000) is not necessarily contradictory, but rather may be supportive of the concept of 'compassion satisfaction': that caring work can also be associated with the activation of positive emotion through the 'soothing and contentment system' (Paul Gilbert, 2009b; Stamm, 2002).

There was some support for the proposition that threat-related emotion may actively suppress compassion among healthcare staff. In a number of the reviewed studies, various measures of anxiety were correlated both with occupational stressors, and with burnout or compassion fatigue (Chana et al., 2015; Dasan et al., 2015; Teasdale, Brocklehurst, & Thom, 2001). In some studies, burnout or compassion fatigue then predicted poorer self-reported caring behaviours (Chana et al., 2015; Rafferty et al., 2010). Qualitative exploration by Dasan et al (2015) also indicated links between organisational stressors, anxious or angry emotional states (i.e. threat-related emotion), and compassion fatigue. However, there was no research that explicitly explored the psychological or neurological processes of compassion fatigue, or that captured the direction of relationships between compassion and threat-related emotion. Moreover, the methodological issues in many studies mean that these conclusions can only be very tentative.

The evidence broadly supported the theoretical proposition that aspects of healthcare systems may play a role in promoting or preventing compassion fatigue among its staff (Cole-

King & Gilbert, 2011). Systemic factors could be more influential than personal or individual factors, and there was some evidence that these may moderate the demands of caring work. For example, in the two examples where a JDCS model (Johnson & Hall, 1988; Dasan et al., 2015) was tested, this theory found empirical support.

The proposition that hierarchical organisational cultures are likely to trigger greater threat-related emotion was tentatively supported by the evidence that burnout or compassion fatigue was related to feelings of autonomy and of feeling listened to by the organisation. The review finding that extremely high workload may be associated with compassion fatigue or burnout is tentatively supportive of the 'compassionate mind' proposition that excessive demands may trigger threat-related emotion and undermine compassion.

The proposition that group cohesion or 'social safeness' is important in minimising threat-related emotion, and promoting compassion, also found tentative support. For example, Watts and colleagues' (2013) conclusion that a more innovative (i.e. creative, enterprising) or supportive (collaborative, trusting) perceived organisational culture may be associated with lower burnout than a bureaucratic (i.e. hierarchical, structured) one. The role of supportive relationships at work was a feature in the majority of the studies in this review. However, again, as neuropsychological processes were not the focus of these studies, the implications for the application 'compassionate mind' theory can only be indirectly and tentatively applied.

## **5.2 Research implications**

There is a need for more direct psychological theory testing in compassion fatigue research, and to further evidence the ways in which the different variables identified in this review may interact to promote or prevent compassion fatigue. Attempts to explore compassion fatigue

in relation to organisational culture, and/or triangulation with qualitative data may be helpful. Longitudinal studies would be helpful to ascertain the direction of relationships found in existing cross-sectional research. More studies that include measures of patient care or outcomes would also be desirable. There is a need to address potential conceptual overlap of the constructs of compassion fatigue, compassion stress, secondary traumatic stress and burnout.

### **5.3 Practice implications**

The review findings offer tentative support to organisational measures that aim to reduce threat-related emotion (anxiety, anger and shame) among healthcare staff. Results suggest that this might be achieved through promoting collaborative and supportive relationships at all levels; ensuring manageable workload and sufficient resources; and minimising top-down decision-making and restrictions on professional autonomy of employees. Existing initiatives such as 'compassionate leadership' (West, Eckert, Steward, & Pasmore, 2014; West et al., 2017), and reflective spaces for staff including Schwartz Rounds (George, 2016; Goodrich, 2011) may also be indirectly supported by these findings.

It is important to note that these practice implications may be at odds with dominant UK government health policies and NHS management structures (Crawford et al., 2014; George, 2017). Compassionate cultures of care may be undermined by a context of increasing funding pressures, marketisation, managerialism and top-down restructuring (Campling, 2015; Nutt & Keville, 2016).

### **5.4 Limitations of this review**

As discussed above, the reviewed studies were largely from the nursing and medical literature, with few directly testing psychological theories. It has therefore been possible to

draw only tentative, indirect conclusions with respect to support for the psychological theoretical propositions discussed in this paper.

As the evidence predominantly sampled doctors and nurses, the generalisability of these findings to other professional groups cannot be presumed. In particular, the influence of organisational culture may be different among psychologists and psychotherapists, who are likely to receive additional support for processing emotions as part of their role, and among non-clinical staff, who arguably are required to engage less directly with families and patients.

Finally, as only peer-reviewed journal articles were included in this review, the possibility of publication bias must also be kept in mind.

## **6. Conclusions**

The reviewed evidence suggests that political and organisational systems may have a role to play in the prevention of compassion fatigue and promotion of compassionate care for patients and service-users in the NHS. Based largely on cross-sectional survey data, important organisational factors may be: a manageable workload, sufficient resources to provide the level of care expected, an experience of supportive and collaborative relationships at work (potentially including formal clinical supervision), and autonomy and involvement in organisational decision-making. Methodological limitations of the reviewed studies mean that these conclusions should be strengthened by further empirical testing.

The review findings tentatively supported two theoretical explanations for compassion fatigue: the JDCS model (Johnson, & Hall, 1988) as well 'compassionate mind', as applied to healthcare organisations (Gilbert, 2010; Cole-King & Gilbert, 2011). The 'compassionate mind' approach offers a more detailed explanatory account of the interaction between social

context and the psychological processes involved in compassion fatigue, and the evidence was insufficient to fully test all its propositions. Further research into 'compassionate mind' approaches may deepen our understanding of compassion fatigue, and usefully inform policy makers and organisational leaders in their efforts to provide high quality patient care with limited resources.

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Major Research Project

SECTION B

*Section Title:*

Organisational climate and threat-related emotion among healthcare staff:  
implications for compassionate practice?

*Accurate word count:*

7632

## Abstract

**Introduction** This study aimed to empirically test the application of psychological theory to the issue of compassion in healthcare organisations. The study hypothesised that (1) threat-related emotion among healthcare staff would be predicted by organisational climate and (2) a mediated relationship between organisational climate and compassion-related outcome, through threat-related emotion, would be found.

**Method** Staff from a range of UK healthcare organisations and professional roles were sampled using an online cross-sectional survey (n=154). Data were analysed using multiple regression and mediation analysis.

**Results** Both hypotheses were partially met. (1) As an overall model, a perceived climate of high pressure for productivity, low line-manager support for emotions, and low compassion from colleagues and managers was significantly predictive of increased threat-related emotion. (2) A relationship between organisational climate and compassion satisfaction was significantly mediated by low 'social safeness' (feelings of 'positive calm', connectedness, trust and acceptance between colleagues). Other hypothesised mediators (work-related anxiety and shame) were not statistically significant, although were significantly predicted by organisational climate.

**Discussion** Results were tentatively supportive of the application of compassionate mind theory to the context of healthcare organisations. Implications and methodological limitations are discussed.

## Keywords

'Compassion'; 'Organisational Climate'; 'Compassionate Mind'; 'Healthcare'; 'Burnout'

## 1. Introduction

### 1.1 Organisational culture and compassion in healthcare

The UK National Health Service (NHS) faces a widespread perception of a lack of compassion, in part prompted by a series of large-scale cases of institutional neglect and abuse in recent years (Bubb, 2014; Francis, 2013; Parliamentary and Health Ombudsman, 2011; The Patients Association, 2015). Increasing attention is being paid to organisational culture as a crucial foundation for the provision of high-quality, compassionate patient care (King's Fund, 2014; Newdick & Danbury, 2015; West, Eckert, Steward, & Pasmore, 2014).

It has been argued that, while NHS staff are expected to offer compassion to patients, their working contexts are, in contrast, often characterised by close scrutiny, strict performance targets, insufficient resources and a lack of support (Ballat & Campling, 2011; Dixon-Woods et al., 2014; Montgomery, Panagopoulou, Kehoe, & Valkanos, 2011; West, Eckert, Collins, & Chowla, 2017). Bullying and work-related stress are reportedly widespread across all levels of the NHS (Carter et al., 2013; Royal College of Nursing, 2013; Picker Institute Europe, 2017; Timmins, 2016). A high-profile public inquiry made links between extreme failings at Mid Staffordshire NHS Trust and an "insidious negative culture" of fear and management-level preoccupation with performance targets and financial planning (Francis, 2013, p3).

The question of how to build alternative, compassionate organisational cultures in NHS organisations is now a growing topic of interest and research. Current initiatives include Schwartz Centre Rounds® (a particular type of reflective space for staff) and 'compassionate leadership' initiatives, supported by the King's Fund (Ham, 2014; West, Eckert, Steward, & Pasmore, 2014).

These initiatives are in their relative infancy and, so far, have been developed relatively separately from psychological or academic theory. Neither have these approaches yet been taken up at the level of national government: the dominant policy response to the compassion debate has instead been to focus on increased monitoring and scrutiny of clinicians (e.g. Department of Health, 2013, 2014; Health Education England, 2016), and the NHS is arguably increasingly being organised around competing principles of financial austerity, productivity and marketisation (Health and Social Care Act, 2012; Ham, 2014; Roberts, A., Marshall, L., & Charlesworth, 2012).

## **1.2 Theorising compassion in healthcare organisations**

Psychological and psychodynamic theory has much to offer these growing initiatives for improving organisational culture in the NHS. In particular, this paper focuses on the 'compassionate mind' approach, an integrative model which originated in the context of research and psychological therapy ('compassion focused therapy') (Gilbert, 2009a, 2009b). The model draws on social, neuropsychological, evolutionary and attachment theory to explain human emotional regulation and social motivation (Gilbert, 2009a, 2009b, 2015). The model's integration of a range of theoretical perspectives, its clear conceptualisation of compassion, and its roots in clinical research, offer great potential to practically inform the field of compassion in healthcare systems.

Gilbert's approach (2009) conceptualises three distinct, interacting neuropsychological emotional regulation systems: the *incentive and resource-seeking system* (associated with emotions of excitement or motivation), the *soothing and contentment system* (associated with emotions of contentment and affection); and the *threat and self-protection system* (associated with emotions of fear/anxiety, anger and shame). It is the *soothing and*

*contentment system* that is proposed to enable people to engage in caring and create bonds with others, including the ability to feel and act compassionately towards others and oneself.

Gilbert (2009b) proposes that, for evolutionary reasons, our emotion regulation systems are activated or suppressed largely in response to one's social and environmental context. The activation of the *threat and self-protection system* triggers cortical, along with defensive strategies such as emotional withdrawal and aggression towards others, and actively suppresses the *soothing and contentment system* (Gilbert, 2009b). Moreover, due to its direct role in survival, the threat-related system has evolved to be dominant, and this can often cause difficulties for humans in accessing the emotions of compassion for self and others. It is the 'over activation' of threat-related emotion which is hypothesised to underlie common mental health difficulties such as depression and anxiety: cognitive processes such as rumination, self-criticism and worry are triggered by, and serve to perpetuate, threat-related neuropsychological processes (Gilbert, 2015). This further suppresses the brain's secretion of opiates, and the body's ability to soothe and calm itself and to feel safe, contented and connected with others (Gilbert, 2015). As such, 'compassion-focused therapy' focuses on bringing the three affect systems into balance, primarily through exercises such as guided imagery and mindfulness, designed to activate the neuropsychological processes and emotions involved in compassion (Paul Gilbert, 2009a).

'Compassionate mind' or 'compassion-focused' ideas have been more recently applied to the social context of healthcare organisations. For example, it has been proposed that the constructs of 'compassion fatigue' and 'burnout' involve similar neuropsychological processes to those involved in depression and anxiety (Ledoux, 2015). It has long been theorised that caring work (i.e. exposure to, and responsibility to alleviate, the distress or suffering of others) inherently involves the management of difficult (i.e. threat-related)

emotions (Hinshelwood & Skogstad, 2006). Psychodynamic observations have also highlighted ways in which both individuals and healthcare systems can become unhelpfully organised around psychological defences against anxiety; for example through emotionally withdrawing from patients, becoming excessively task-focused rather than person-focused, or by developing splits between professional groups (Menzies-Lyth, 1960). Compassionate mind adds a neuropsychological explanation to these processes: as the *threat and self-protection system* becomes activated, cortisol and attention is narrowed to focus on personal 'survival', disrupting processes associated with empathy and connectedness with others (Paul Gilbert, 2015).

It has also been proposed that many aspects of NHS organisational climate may be further activating threat-related emotional processes. For example, policies such as penalties for missed performance targets have been argued to represent attempts to use fear and shaming as mechanisms for change (Crawford et al., 2014). Other aspects of NHS climate such as excessively high workload, hierarchy, top down change, performance targets and competition between services have also been hypothesised to activate threat-related emotion (Cole-King & Gilbert, 2011; Crawford et al., 2014).

These features of organisational climate are theorised to be counterproductive: they activate threat-related emotion and disrupt neuropsychological systems linked to compassion, undermining both staff and patient wellbeing (Cole-King & Gilbert, 2010). It is proposed that healthcare organisations should therefore foster compassion (and, by extension, positive patient outcomes) by helping staff process the anxiety generated by engaging with the suffering of others and by developing systems primarily around the facilitation of the relational aspects of employees' roles (Ballat & Campling, 2011; Cole-King &

Gilbert, 2011; Crawford et al., 2014). De Zulueta (2013, p839) suggests that leaders should aim to foster "high-trust and low-threat environments" for healthcare staff.

### **1.3 Existing evidence for the application of 'compassionate mind' to healthcare organisations**

Existing empirical research provides some indirect evidence of the processes outlined above.

Firstly, there is evidence of high levels of threat-related emotion among many UK healthcare staff. The 2017 NHS staff survey, involving 235 NHS trusts, reported that 38% of staff said they had felt unwell due to work-related stress over the course of the last year (Tonkin, 2018). Moreover, research evidence suggests that both anxiety and guilt/shame (e.g. around perceived failures of patient care) may be prevalent emotions among healthcare staff (Caplan, 1994; Cunningham, 2004; Kaya, Aşti, Turan, Karabay, & Emir, 2012; Peters et al., 2013; Sanders, Pattison, & Hurwitz, 2011; Zuzelo, 2007).

Secondly, there is evidence of links between organisational climate and compassion or empathy among healthcare staff. For example, large-scale cross-sectional studies with NHS staff have found associations between 'compassion fatigue' or 'burnout' and organisational factors such as exposure to high levels of trauma (Chana et al., 2015; Crabbe et al., 2002; Ramirez et al., 1996); excessive workload (Carson, Brown, Fagin, Leary, & Bartlett, 1996; Chana et al., 2015; Coffey & Coleman, 2001; Dasan et al., 2015; S. Johnson et al., 2012; Mandy, 2000; Rafferty et al., 2010; Ramirez et al., 1996); lack of support from managers and colleagues (Dasan et al., 2015; Johnson & Hall, 1988; Sherring & Knight, 2009); and a lack of autonomy or control (Blumenthal, Lavender, & Hewson, 1998; Bowers et al., 2011; Dasan et al., 2015; S. Johnson et al., 2012; Upton et al., 2012; Watts et al., 2013). Moreover, there is evidence that empathy and compassion decline over the course of professional training,

among both medical and nursing students (Mackintosh, 2006; Murphy, Jones, Edwards, James, & Mayer, 2009; Riess, 2010).

Thirdly, mindfulness interventions (a key component of compassion-focused therapies) have been successfully trialled with NHS staff, with the effect of reducing staff stress and promoting self-compassion (Raab, 2014). Finally, there exists systematic review evidence of links between staff emotional experience and patient safety outcome (Hall, Johnson, Watt, Tsipa, & O'Connor, 2016).

#### **1.4 Rationale, aims and hypotheses.**

Although existing evidence offers indirect, tentative support to the application of 'compassionate mind' theory to healthcare organisations, studies that aim to directly test these theoretical propositions have yet to be carried out. This study therefore aimed to empirically test proposed relationships between organisational climate, threat-related emotion and compassion among healthcare staff, as theorised by those applying 'compassionate-mind' ideas to the healthcare organisational context (Ballat & Campling, 2011; Cole-King & Gilbert, 2011; Crawford et al., 2014) .

The study focused on two theoretically salient aspect of organisational climate: perceived pressure around productivity (Cole-King & Gilbert, 2011; Crawford, Gilbert, Gilbert, Gale, & Harvey, 2013) and the extent of attention to, and support for, the relational aspects of employees' roles (Ballat & Campling, 2011; Crawford et al., 2014).

The study firstly hypothesised that threat-related emotion among healthcare staff would be predicted by (a high pressure, low support) organisational climate. Secondly, a mediated relationship between organisational climate and compassion satisfaction, through threat-related emotion, was hypothesised. Compassion satisfaction is defined as the positive

feelings generated by helping others and being able to do one's work well, and is conceptualised as the opposite of a separate construct: compassion fatigue (Stamm, 2002) . Although not a direct measure of compassion, compassion satisfaction was considered indicative of how engaged an employee is in the compassionate aspects of their role.

## 2. Method

### 2.1 Design

A quantitative methodology was used in order to maximise generalisability of findings. A cross-sectional survey design enabled the testing of hypothesised relationships between variables, and enabled sampling of participants from a wide range of settings and roles.

### 2.2 Participants

**Selection.** Participants were 154 staff from a range of healthcare-providing organisations, including NHS Trusts, hospices, private healthcare providers and charity healthcare providers. Responses were collected via an online survey between March and December 2017. In order to enable anonymous responding from a variety of organisations, participants were self-selecting. As the psychological processes of interest to this study have been theorised to occur at all levels of healthcare organisations (Hinshelwood & Skogstad, 2006; Owens, 2015), both clinical and non-clinical staff were eligible for inclusion.

Participation was not restricted to any particular organisations. However, the survey was advertised via Trust intranet in three NHS Trusts, and was distributed by email in one hospice (all based in the South-East of England). Additionally, the survey was advertised via national online forums for UK healthcare workers and professionals. Recruitment was stopped once sufficient responses were gathered. In total, 212 responses were received. After partially

completed responses were excluded (those less than 95% complete), 154 participant responses were eligible for inclusion.

The sample size was based on an *a priori* power analysis from statistical software, GPower, using guideline values for detection of medium effect sizes, 'alpha' and 'power'. A medium effect size was chosen as small effect sizes were thought to be unlikely to be of practical relevance. In line with the conventional minimum level of power of 0.80 (Clark-Carter, 2007), power was estimated by GPower at 0.95.

**Demographics.** *Tables 1 and 2* summarise the demographics of participants. To assist in assessing the likely representativeness of the sample, participant demographics data are presented alongside national NHS workforce data, where available. Fully comparable national data were not available, as national workforce data for non-NHS healthcare providers could not be accessed.

Broadly, participant demographics appeared representative of the national NHS workforce in terms of gender, age, ethnicity and professional role. Men appeared slightly underrepresented (11.2% compared to 23% nationally). The full range of ages was represented. However, those aged 25-34 were overrepresented (39.6% compared to 23% nationally), and those over 55 years somewhat underrepresented (11.0% compared to 21% nationally). Participants came from a variety of clinical and non-clinical roles, with the largest occupational group being nurses and midwives (a proportion broadly reflective of that of the national NHS workforce). 'Scientific, therapeutic and technical staff' (including radiographers, healthcare scientists, allied health professionals and psychological therapists) were overrepresented (27.9% compared to 12.6% nationally). Of these, approximately half (n=19) were 'psychological therapists' which, again, may be an overrepresentation. Conversely, clinical support staff were underrepresented (13% compared with 30% nationally).The

majority (76%) of participants worked directly with patients or service-users. Eighty-six per cent of participants worked for an NHS Trust, 11% for a hospice, and the remaining participants worked for private healthcare providers or other organisations. The majority of participants (84.6%) identified as 'white British' and this is reflective of the national NHS workforce (87%). Most participants (72.7%) worked full time, with a significant minority (16.9%) reporting working more than 40 hours in a typical week. Most participants (81.8%) worked between 7-10 hours on a typical day, with 10.3% working more than 10 hours and 5.8% working fewer than 7 hours per day. A broad range of responses was received with regards to length of time served in the organisation, and in one's occupational role. National data were not available for working hours or length of service.

Table 1. Participant demographics alongside national NHS workforce data

Demographics	Frequency (n)	Percentage (%)	National NHS workforce* (%)
<b>Total number of participants</b>	<b>154</b>	<b>-</b>	
<b>Gender</b>			
Male	17	11.2	23
Female	135	88.8	77
Not stated	2	1.3	-
<b>Age (years)</b>			
Under 25	15	9.7	12
25-34	61	39.6	23
35-44	37	24.0	23
45-54	24	15.6	21
Over 55	17	11.0	21
<b>Ethnicity</b>			
White	127	84.6	87
Black or Black-British	4	2.6	3
Asian or Asian-British	5	3.2	7
Mixed ethnicity	5	3.2	1
Any other ethnic group	6	3.9	2
<b>Direct work with patients/service-users?</b>			
Yes	117	76.0	-
No	36	23.4	-
Not stated	1	.6	-
<b>Role</b>			
Nursing and midwifery	48	31.2	29.0
Scientific, therapeutic and technical staff (includes radiographers, speech and language therapists, healthcare scientists)	43	27.9	12.6
Hospital and community doctors, GPs, psychiatrists	12	7.8	11.6
Support to clinical staff (including clinical management, clinical admin and support workers)	20	13.0	30.0
Infrastructure support (Includes HR, non-clinical admin and management, IT, estates etc.)	22	14.3	15.8
Ambulance staff	0	0	1.9
Other	7	4.5	4.0
Not stated	2	1.3	-
<b>Organisation</b>			
NHS Trust	128	83.1	-
Hospice (charity)	17	11.0	-
Private healthcare provider	2	1.3	-
Other	7	4.5	-

\*National NHS workforce statistics are included where available. Sourced from [NHS Digital \(2017\) 'Healthcare Workforce Statistics, September 2016, Provisional Experimental'](#). Accessed 9 May 2017.

Table 2. Participant demographics: length of service and working hours

Demographics	Frequency (n)	Percentage (%)
<b>Years in role</b>		
<1	9	5.8
1-2	38	24.7
3-6	46	29.9
7-10	20	13.0
>10	39	25.3
Not stated	2	1.3
<b>Years in organisation</b>		
<1	26	16.9
1-2	47	30.5
3-6	44	28.6
7-10	18	11.7
>10	18	11.7
Not stated	1	.6
<b>Hours worked per typical week</b>		
Part time: <15	2	1.3
Part time: 15-29	21	13.6
Part time: 30-37	17	11.0
Full time: 37.5-39	86	55.8
Full time: >40	26	16.9
Not stated	3	1.9
<b>Hours worked per typical day</b>		
<7.5	9	5.8
7.5-10	126	81.8
11-12	2	1.3
>12	14	9.0
Not stated	3	1.9

Note: National NHS workforce statistics were not publically accessible for these characteristics

**Ethical considerations.** Informed consent was obtained by the use of an information sheet. Participants were made aware that the measures were not being used to detect any pathology: the measures for shame and anxiety were introduced as “thoughts and feelings which can be experienced in connection with the workplace”. Information and resources for workplace stress were given to all participants. Participants were self-selecting and were able to complete the questionnaire anonymously.

### 2.3 Measures and definition of terms

**Organisational climate.** Organisational culture is defined as a set of shared, implicit assumptions that members of an organisation hold, that shape employee behaviour (Schein, 1992). Organisational climate has been proposed to be a distinct construct, defined as the shared perception of feelings, attitudes and patterns of behaviour that characterise the experience of working in a particular organisation (Wallace, Hunt, & Richards, 1999). Its focus on perception rather than implicit beliefs arguably makes organisational climate a more empirically accessible construct (Wallace et al., 1999).

A range of measures was considered in an attempt to capture theoretically relevant aspects of organisational climate. Many existing measures of organisational climate or culture were not developed in the healthcare sector and did not appear sufficiently relevant to the aims of this study (Cooke & Lafferty, 1983; Patterson, 2005; Quinn & Rohrbaugh, 1983). Other measures, while designed for use in healthcare settings, were focused on aspects that were not relevant to the propositions of 'compassionate mind'. For example, the Hospital Culture Scale (Klinge, R. S., Burgoon, M., Afifi, W., Callister, 1995) focuses on the relationship between nurses and physicians. Harrison's Organisational Ideology Scale (Harrison, 1972; Litwinenko & Cooper, 1994) focuses on ideology rather than climate and does not easily map onto the proposed psychological theory. As no appropriate single measure of organisational climate could be found, subscales from a range of other scales were used in order to capture constructs of theoretical interest to this study.

Firstly, the 'Pressure to Produce' subscale of the Organisational Climate Measure (Patterson, 2005) (OCM-PP) was used to capture the degree to which a climate is perceived as oriented around productivity with high level of work demands. This measure was chosen based on existing evidence of relationships between high level of work demands and

compassion-related outcomes (Dasan et al., 2015; Johnson et al., 2012) , and on theoretical propositions that a culture focused on performance targets and productivity may undermine compassion among healthcare staff (Ballat & Campling, 2011; Crawford et al., 2014; Francis, 2013). This is a theoretically driven scale with good construct validity and good internal consistency ( $\alpha=.79$ ). The OCM-PP consists of five items, which are scored on a four point Likert scale from 'Strongly Disagree to Strongly Agree' (e.g. "People here are under pressure to meet targets"). One item is reverse-scored and then item scores are averaged to provide a mean scale score between 1-4.

Secondly, the Organisational Response to Emotions Scale (ORES) (George, 2016) was used. The ORES is a measure of the extent to which healthcare employees feel the emotional aspects of their work are acknowledged and supported by their organisation. Organisational emotional support was considered an important feature to include in this study, as a key theoretical proposition of this study is that healthcare work has the inherent task of managing ones' own anxiety and distress, and that organisations should aim to support workers in the relational aspects of their role (Ballat & Campling, 2011; Cole-King & Gilbert, 2011). The ORES has good face validity and clinical relevance, and was developed from grounded theory study of interviews with healthcare staff. The line-manager subscale (ORES-LM) was chosen as it had the strongest internal consistency ( $\alpha= 0.93$ ) and because managerial support has been shown to be a significant predictor of compassion fatigue and burnout (e.g. Coffey & Coleman, 2001; Dasan et al., 2015; Johnson et al., 2012). The scale consists of 12 items, rated on a 7 point Likert scale (e.g. "My line-manager takes time to ask me about the emotional impact of my work"). Some are reversed scored (e.g. "My line-manager's main focus is on meeting targets from regulators and avoiding blame"). Items are then averaged to provide a mean scale score between 1-7.

Finally, the 'Compassion from Others Scale (Action subscale)' was used (CFO-A) (Gilbert et al., 2017). This measure captures an individual's experience of compassion from the people around them: the extent to which they feel others are supportive and have 'compassion competencies' (Gilbert et al., 2017). This measure was developed as part of a series of three 'Compassionate Engagement and Action Scales' (Gilbert et al., 2017) that aim to measure motivation and capacity for compassion for self, for others and from others. The scale has good internal consistency ( $\alpha=.91$ ) and has been validated in a cross cultural study that included factor analysis and test-retest reliability (.59) (Gilbert et al., 2017). The scale was not developed specifically as a measure of organisational climate and so author consent was obtained to adapt the scale by adding "Thinking about your experience at work..." before each item. The scale consists of five items rated on a Likert scale of Never-Always (1-10) (e.g. "Others treat me with feelings of support, helpfulness and encouragement"). One item is reversed then items are averaged to obtain a mean scale score of 1-10.

**Threat-related emotion.** This term refers to the emotions theorised to be involved in the '*threat and self-protection*' neuropsychological system proposed by the 'compassionate mind' approach. These emotions include anxiety, fear, shame and anger, and are all emotions theorised to have evolved to serve the function of ensuring physical survival and/or group belonging (Gilbert, 2009b). Another term used in this study, 'Social safeness', refers to an emotional state characterised by feelings of belonging and acceptance, and the experience of being able to be calmed by, and connected with, others (Gilbert, 2009b; Gilbert et al., 2009). 'Social safeness' is associated with activation of the '*soothing and contentment*' neuropsychological system: it is different from pleasure or excitement that is associated with the *drive system*. Rather, it represents both an *absence of threat* and a state of 'positive calm' (Paul Gilbert, 2009a).

A combination of subscales was used for this construct, as no pre-existing measure for capturing threat-related emotion among healthcare staff could be found in the literature. Key threat-related emotions are theorised to comprise anxiety, shame and anger (Allan & Gilbert, 2002; Gilbert, 2009b; Gilbert & Woodyatt, 2017). No suitable measure of workplace-related anger was found.

The 'Anxiety' subscale of the Hospital Anxiety and Depression Scale (HADS-A) (Zigmond & Snaith, 1983) was used. This scale is a brief, valid and reliable measure of anxiety, developed for use with people with physical illness but also validated for use with healthy populations and in organisational contexts (Boc er an & Dupret, 2014; Breeman, Cotton, Fielding, & Jones, 2015). In a review of its validity, the HADS-A performed well in terms of factor structure, discriminant validity and internal consistency (mean  $\alpha=.83$ ), and significant correlations with similar, validated scales (.49-.83) (Bjelland, Dahl, Haug, & Neckelmann, 2002). The scale consists of seven items (e.g. "worrying thoughts go through my mind"), which are rated on a Likert scale (1-7) according to the frequency that the 'symptom' is experienced. Some items are reverse scored and then items are summed to provide a total score. The measure was slightly adapted for the context by adding "When at work or thinking about work..." to the beginning of each item. For the purposes of data analysis for this study, items were averaged to provide a mean score between 1-7 for each participant.

Secondly, the Other as Shamer Scale (short form) was used (OAS) (Goss, Gilbert & Allan, 1994). This is a self-report measure of shame which captures the extent to which an individual experiences others around them as shaming. This is a theoretically driven measure which has been validated against four previously validated measures of shame and which has good internal consistency ( $\alpha=.82$ ) (Matos, Pinto-Gouveia, Gilbert, Duarte, & Figueiredo, 2015). The scale consists of eight items, rated on a five point Likert scale (e.g. "I feel other

people see me as not good enough"). Consent was obtained from the author to adapt the scale for the work context, by adding 'Thinking about your experience at work...'. Items were averaged to provide a mean scale score.

Finally, the Social Safeness and Pleasure Scale (SSPS) (Gilbert et al., 2009) was used. This is a measure of the extent to which an individual experiences feelings of acceptance belonging and connectedness with others, and the extent to which they feel calmed and soothed by those around them. Theoretically, an experiences of 'social safeness' indicates the *absence* of threat-related emotion (Gilbert, 2009). The scale consists of 11 items, rated on a Likert scale from 1-5 (e.g. "I feel content within my relationships" and "I find it easy to be calmed by the people around me"). The scale has good internal consistency ( $\alpha=.92$ ) and is well validated (Paul Gilbert et al., 2009). Again, this measure was adapted for the workplace context, with author consent, by adding, 'Thinking about your experience at work...' before each item. Items were averaged to provide a mean scale score between 1-5.

**Compassion.** Compassion is often poorly defined within both healthcare and psychological literature (Strauss et al., 2016). For the purposes of this study, the following, five-element definition of compassion was considered: "recognizing suffering, understanding the universality of human suffering, feeling for the person suffering, tolerating uncomfortable feelings, and motivation to act/acting to alleviate suffering" (Strauss et al., 2016, p25).

The 'Compassion Satisfaction' subscale of Professional Quality of Life Scale was used as a compassion-related measure in this study (Stamm, 2002). Compassion satisfaction was selected as it is a well established measure with good internal consistency ( $\alpha=.87$ ), and has been validated for use with healthcare staff. Construct validity is well-established, with over 200 articles in the peer-reviewed literature (Stamm, 2002). The scale consists of eight items, rated on a five point Likert scale (e.g. "I feel invigorated after working with those I

help" and "I have happy thoughts and feelings about those I help and how I could help them"). Items are summed to provide a total score. For the purposes of this study, a mean scale score was obtained.

These measures were incorporated into an online questionnaire, alongside demographics questions. This was piloted with a group of 10 staff in order to test face and content validity, as well as the feasibility of the length of the questionnaire. The piloted version of the questionnaire had an alternative measure of anxiety: the Job Anxiety Scale (Muschalla, Linden, & Olbrich, 2010). This measure was experienced as too extreme by many respondents (as the measure aims to capture 'workplace phobia'; and a 'floor' effect was anticipated. The HADS-A was therefore used instead. Small changes were made to the demographics section to more clearly define 'line-manager' for the ORES measure: participants were advised to think of the manager or supervisor with whom they had most direct contact.

## 2.4 Data analysis

**Part 1.** Multiple linear regression analysis in the IBM SPSS Statistics programme (SPSS) was used to test the hypothesised relationship between organisational climate (predictor = X) and threat-related emotion (outcome = Y) (hypothesis 1). Lower perceived 'pressure to produce' ( $X_1$ ), higher perceived 'line-manager support for emotions' ( $X_2$ ) and higher reported 'compassion from others' at work ( $X_3$ ) were hypothesised to predict lower work-related anxiety' ( $Y_1$ ), lower work-related 'shame' ( $Y_2$ ) and higher perceived 'social safeness' at work ( $Y_3$ ). Three separate linear models were used: one for each outcome (Y) variable, with all three predictor (X) variables included in each. *Figures 1, 2 and 3* are diagrammatic representations of these linear models.

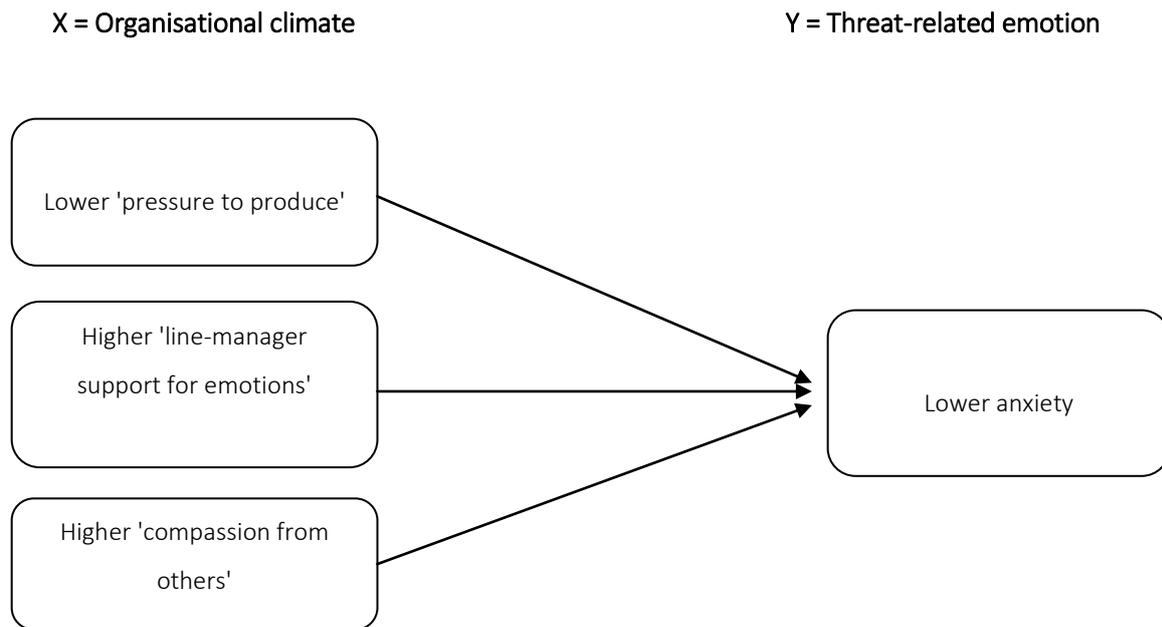


Figure 1. Diagrammatic representation of first linear regression model: organisational climate as a predictor of anxiety

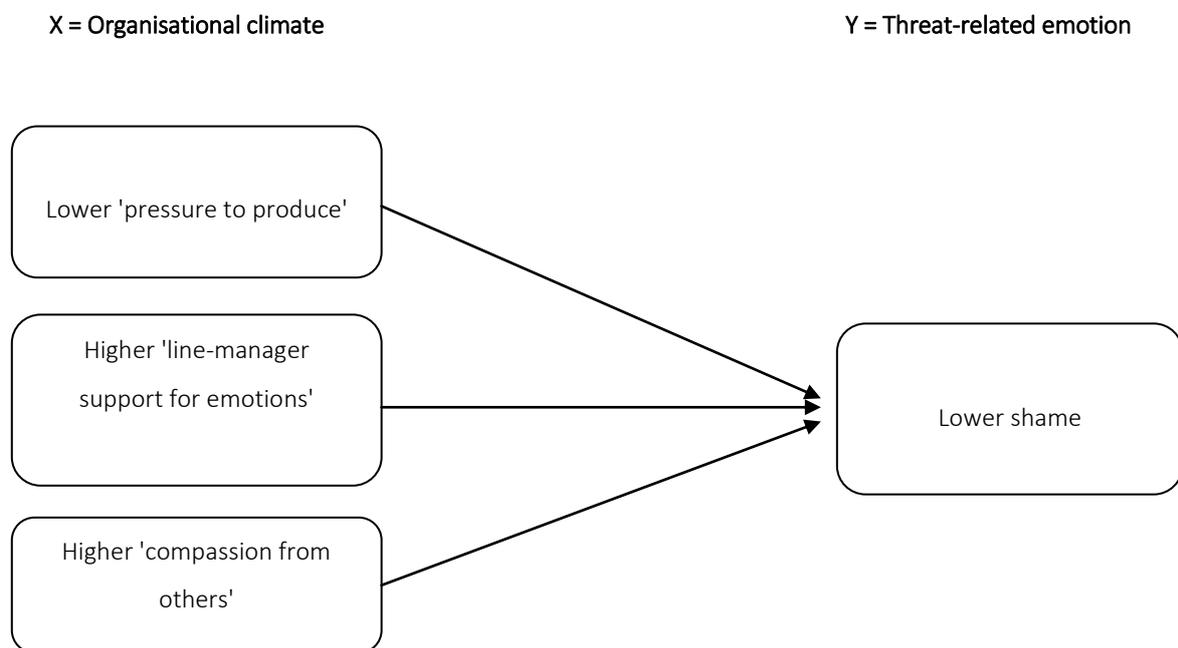


Figure 2. Diagrammatic representation of second linear regression model: organisational climate as a predictor of shame

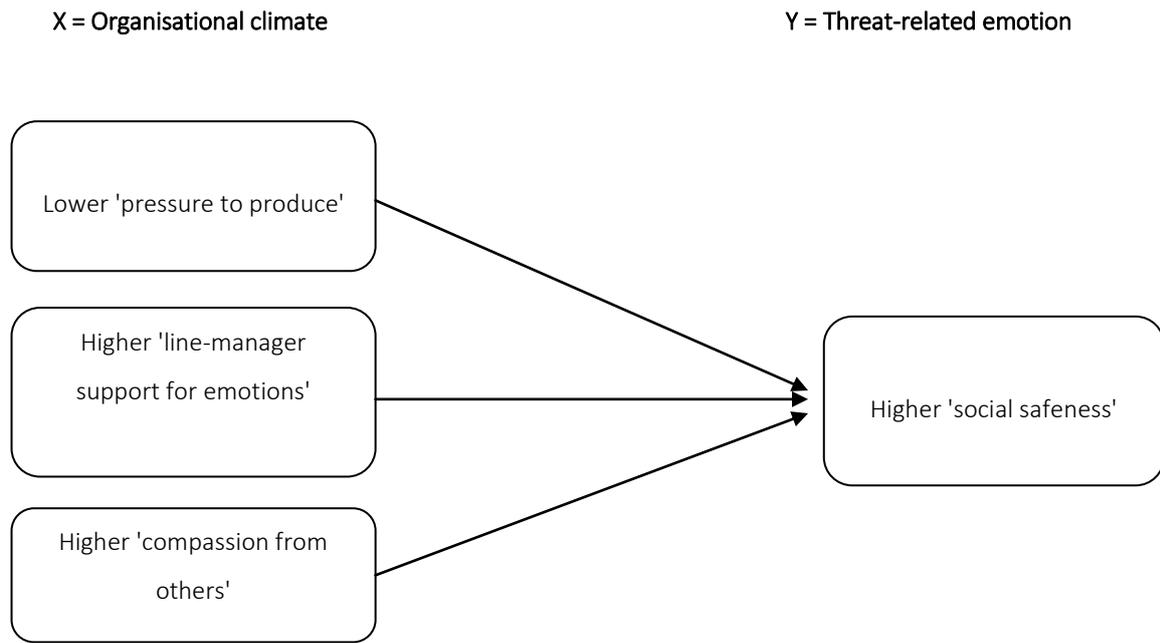


Figure 3. Diagrammatic representation of third linear regression model: organisational climate as a predictor of social safeness

**Part 2.** The PROCESS Macro for SPSS (Hayes, 2017) was used to test the hypothesised mediated relationship between features of organisational climate (X) and compassion satisfaction (Y), through threat-related emotion (M). The analysis was run separately for each of the three predictor variables, through all three mediators, using model 4 of PROCESS.

Figure 4 is a diagrammatic representation of the mediation models tested.

X = Organisational climate

M = Threat-related emotion

Y = Compassion satisfaction

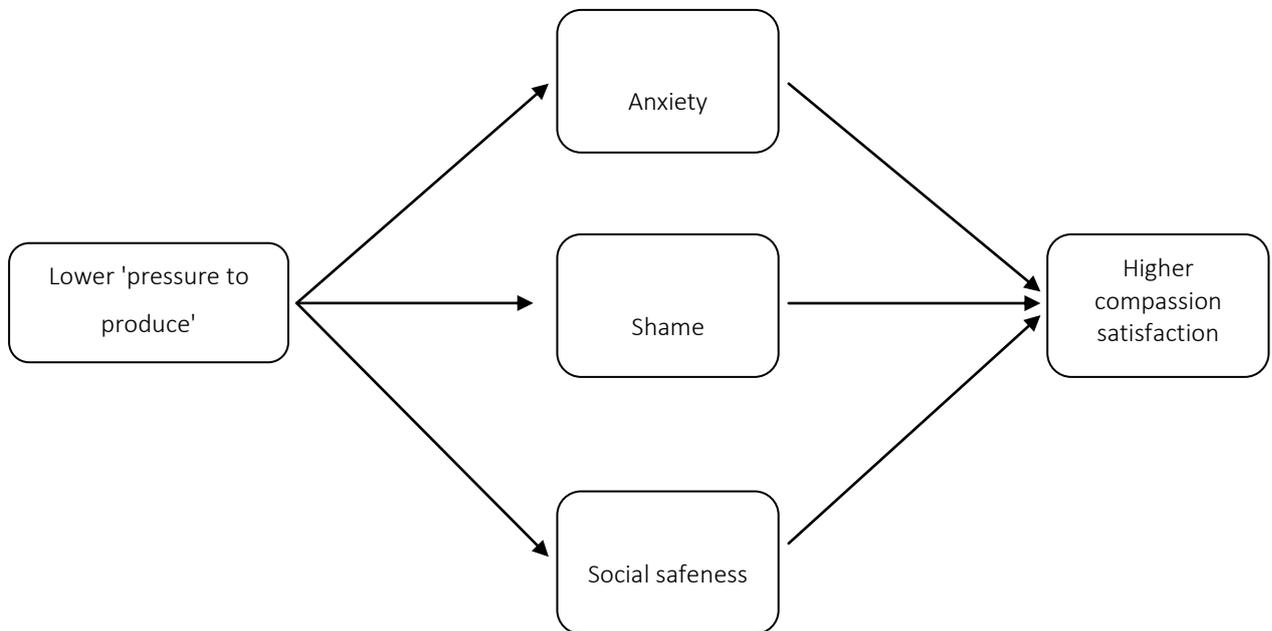


Figure 4. Diagrammatic representation of first mediation model: pressure to produce as a predictor of compassion satisfaction, mediated by threat-related emotion

X = Organisational climate

M = Threat-related emotion

Y = Compassion satisfaction

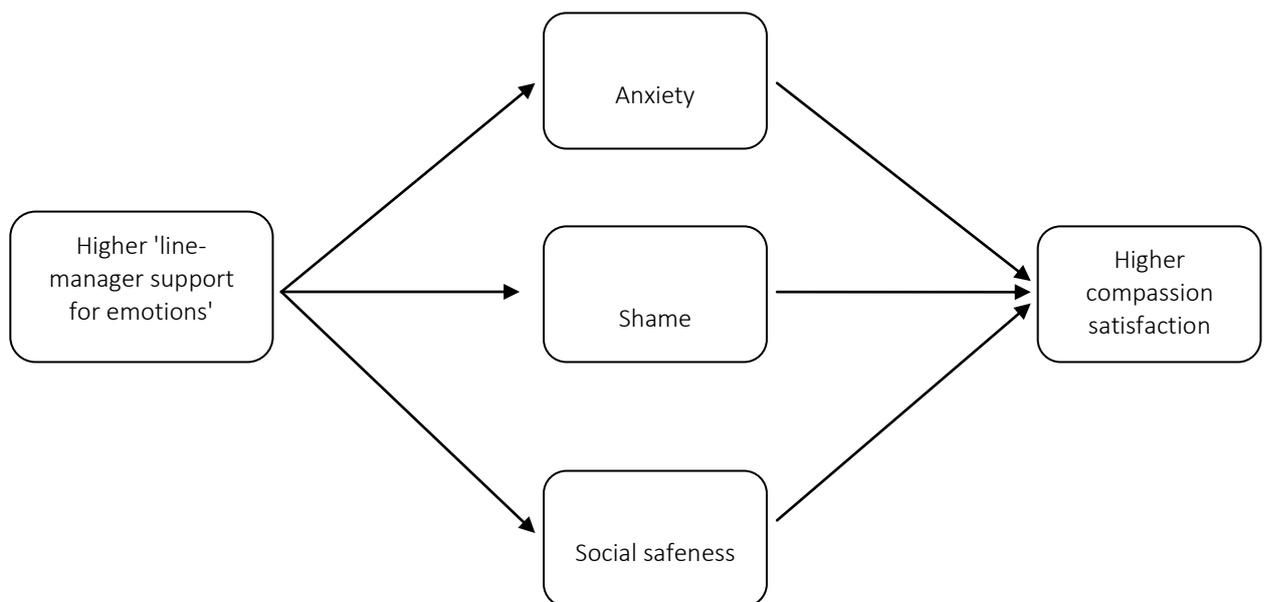


Figure 5. Diagrammatic representation of second mediation model: line-manager support for emotions as a predictor of compassion satisfaction, mediated by threat-related emotion

X = Organisational climate

M = Threat-related emotion

Y = Compassion satisfaction

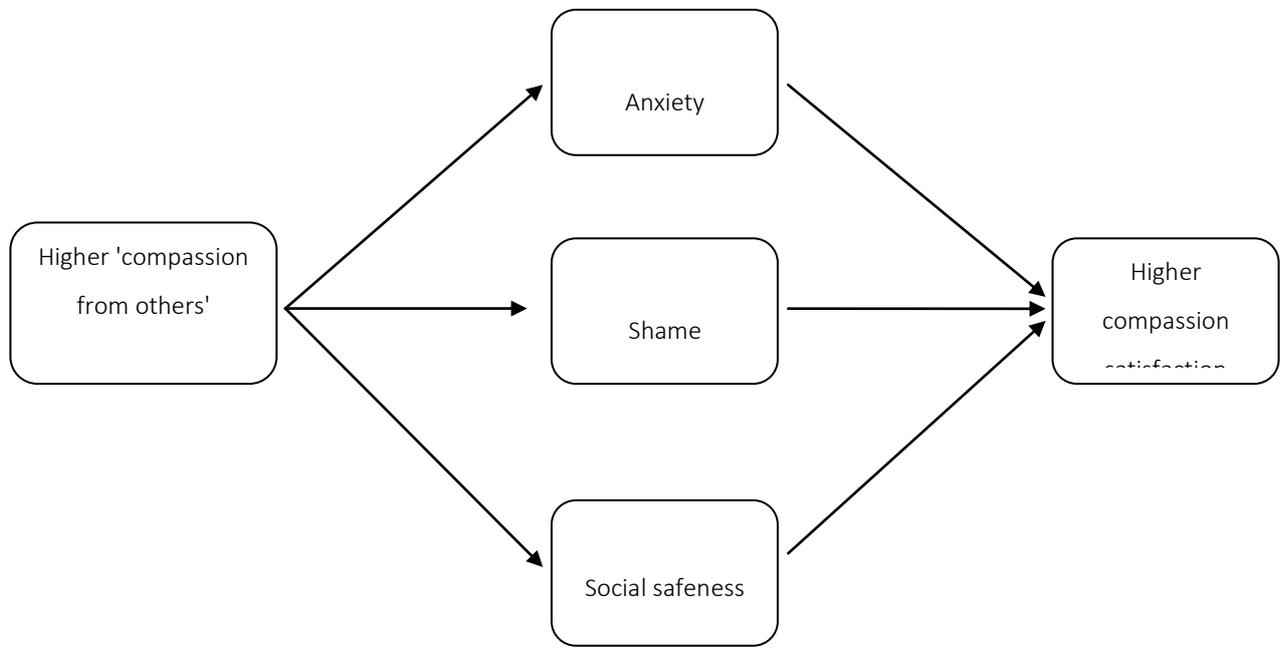


Figure 6. Diagrammatic representation of third mediation model: compassion from others as a predictor of compassion satisfaction, mediated by threat-related emotion

### 3. Results

#### 3.1 Descriptive statistics

The mean 'compassion from others' score was 6.3 (SD = 1.7) (on a 1-10 scale), indicating that, on average, participants 'slightly agreed' that others in their organisation behaved compassionately towards them. The range of scores fell between 2.2 and 10. The mean line-manager support score was 5.2 (SD = 1.1) (scale 1-7), indicating moderate agreement, on average, that the line-manager was supportive. Again, scores fell between a wide range of 2.5 to 7. The mean pressure to produce score was 3.1 (SD = 0.5), out of a maximum possible

score of 4, indicating, on average, a high level of perceived pressure around productivity. The range of scores fell between 1.8 and 4.

The mean 'compassion satisfaction' (CS) score was 3.9 (SD, 0.7) (on a 1-5 scale), indicating that compassion satisfaction among participants was, on average, fairly high. The range of scores fell between 1.1 and 5. The mean total CS score was 31.2, which, when compared to normative data, is within the average range for healthcare professionals (Alkema et al., 2008). All scales had good reliability, with Cronbach's alpha scores greater than 0.8 (Tavakol & Dennick, 2011). *Table 3* is a summary of the descriptive statistics.

*Table 3.* Descriptive statistics

Construct	Scale range	Mean	Standard deviation	Minimum	Maximum	Cronbach's Alpha
<b>Organisational climate</b>						
Pressure to produce (OCM-PP)	1-4	3.1	0.5	1.8	4	0.82
Line-manager support for emotions (ORES-LM)	1-7	5.2	1.1	2.5	7	0.88
Compassion from others (CFO-A)	1-10	6.3	1.7	2.2	10	0.87
<b>Threat-related emotion</b>						
Anxiety (HAS)	1-4	2.1	0.6	1.1	3.6	0.87
Shame (OAS)	1-5	2.3	0.9	1.0	5	0.94
Social safeness (SSPS)	1-5	3.5	0.9	1.0	5	0.96
<b>Compassion</b>						
Compassion satisfaction (CS)	1-5	3.9	0.7	1.1	5	0.93

### 3.2 Part one: multiple regression

Three linear models were tested, as represented in *Figure 1* above. The first model tested organisational climate variables perceived pressure to produce ( $X_1$ ), perceived line-manager support for emotions ( $X_2$ ), and perceived compassion from others (i.e. colleagues and managers) ( $X_3$ ), as predictors of anxiety ( $Y_1$ ). The second model tested the same three

organisational climate variables as predictors of self-reported shame ( $Y_2$ ). The third model tested the same three organisational climate variables as predictors of social safeness ( $Y_3$ ).

**Assumptions.** The assumption of normality was met: for almost all individual items, and all total scales, the skew and kurtosis indices were within  $\pm 2$ . Similarly, visual inspection of the histograms indicated normality in almost all individual items and all total scales. The Kolmogorov-Smirnov test, was significant for most individual items and all total scales, indicating statistically significant deviation from normality. However, this test is known to be very sensitive and is therefore not, on its own, considered indicative of problematically non-normal data (Field, 2013). Assumptions of collinearity and error residuals were also met: VIF values were well below 10 and the tolerance statistics all well above 0.2 (Field, 2013). Examination of casewise diagnostics indicated fewer than 5% of cases has standardised residual of  $> \pm 2$  and fewer than 1% of cases had standardised residuals  $> \pm 2.5$ . Cook's distance was well below 1 for all items. Therefore, no outliers were found. Residuals were normally distributed. Finally, examination of scatter plots indicated that assumptions of linearity, homogeneity of variance were met.

**Anxiety.** The organisational climate predictors significantly predicted self-reported work-related anxiety among healthcare staff, with a large effect size ( $r = .55, f = 21.8, p < .001$ ).  $R^2$  was 0.31 indicating that the organisational climate predictors collectively explained 31% of the variance in anxiety scores. Each of the three predictors made a significant contribution to the model in the expected directions: line-manager support for emotions was significantly negatively correlated with anxiety ( $p < .01$ ), pressure to produce was significantly positively correlated with anxiety ( $p < .01$ ), and compassion from others was significantly negatively correlated with anxiety ( $p < .001$ ). These results are summarised in *Table 4*.

Table 4. Linear model of predictors of anxiety, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors based on 1000 bootstrap samples

	<i>b</i>	<i>SE B</i>	$\beta$	<i>p</i>
Constant	2.60 (1.83, 3.37)	0.39		$p < .001$
Pressure to produce	0.26 (0.10, 0.42)	0.08	.23	$p < .01$
Line-manager support for emotions	-0.12 (-0.21, -0.04)	0.04	-.23	$p < .01$
Compassion from others	-0.10 (-0.15, -0.05)	0.03	-.30	$p < .001$

Note.  $R^2 = .31$  ( $p < .001$ )

**Shame.** The organisational climate predictors significantly predicted self-reported work-related shame among healthcare staff, with a large effect size. ( $r = .47, f = 14.297, p < .001$ ).  $R^2$  was .23, indicating that the linear model explained 23% of the variance in shame scores. Pressure to produce was not, individually, significantly predictive of shame. However, both line-manager support for emotions and compassion from others were significantly negatively correlated with self-reported shame ( $p$ 's  $< .001$ ). These findings are summarised in Table 5.

Table 5. Linear model of predictors of shame, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors based on 1000 bootstrap samples

	<i>b</i>	<i>SE B</i>	$\beta$	<i>p</i>
Constant	4.33 (3.14, 5.51)	0.60		$p < .001$
Pressure to produce	0.01 (-0.23, 0.26)	0.12	0.01	ns
Line-manager support for emotions	-0.23 (-0.35, -0.10)	0.06	-0.28	$p < .001$
Compassion from others	-0.14 (-0.22, -0.07)	0.04	-0.29	$p < .001$

Note.  $R^2 = .23$  ( $p < .001$ )

**Social safeness.** The organisational climate predictors significantly predicted self-reported 'social safeness'-related emotion among healthcare staff, with a large effect size ( $r = 0.65, f = 36.62, p < .001$ ).  $R^2$  was .43 indicating that organisational climate predictors explained 43% of the variance in social safeness scores. Pressure to produce was not significantly predictive of social safeness individually. Both compassion from others ( $p < .001$ ) and line-manager support

for emotions ( $p < .05$ ) were significantly positively correlated with social safeness. These findings are summarised in *Table 6*.

*Table 6.* Linear model of predictors of social safeness, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors based on 1000 bootstrap samples

	<b>b</b>	<b>SE B</b>	<b><math>\beta</math></b>	<b>p</b>
<b>Constant</b>	1.16 (0.11, 2.22)	0.54		$p < .05$
<b>Pressure to produce</b>	-0.08 (-0.30, 0.14)	0.11	-0.05	ns
<b>Line-manager support for emotions</b>	0.13 (0.02, 0.24)	0.06	0.15	$p < .05$
<b>Compassion from others</b>	0.29 (0.22, 0.36)	0.04	0.57	$p < .001$

*Note.*  $R^2 = .43$  ( $p < .001$ )

Taken together, the three multiple regression models suggested that there was a significant association between perceived organisational climate and threat-related emotion among the healthcare staff sampled. Perceived line-manager support for emotions and compassionate action from others (i.e. colleagues and managers) were predictive of self-reported work-related anxiety, shame and 'social safeness', in the expected directions. Individually, perceived 'pressure to produce' was significantly predictive of anxiety, but was not significantly associated with shame or 'social safeness'. The strongest regression model for organisational climate predictors of threat-related emotion was for 'social safeness'. Within this model, perceived compassion from others was the predictor with the largest correlation.

### 3.3 Part two: mediation analyses

The hypothesized indirect effect of organisational climate on compassion satisfaction, through threat-related emotion was tested using the PROCESS macro for SPSS (Hayes, 2017). The programme uses the re-sampling method of bootstrapping, a procedure that provides an estimate of the indirect effect in the population by re-sampling the data-set a large number

of times (1000 iterations in this study) to obtain the indirect effect's sampling distribution and confidence intervals (CIs). An estimate is considered statistically significant if the CI is 95% and does not include zero. Effect sizes are not reported here, as they are no longer recommended for mediation analysis (Wen & Fan, 2015). Modern mediation analysis also does not require that a 'direct effect' of a predictor on an outcome variable be present in order for an 'indirect effect' (i.e. a mediated relationship) to be present and meaningful (Hayes, 2009).

**Pressure to produce.** 'Pressure to produce' significantly predicted compassion satisfaction,  $b = -0.27$ ,  $t = -2.547$ ,  $p = .01$ .  $R^2$  was .041, indicating that pressure to produce explained 4.1% of the variance in self-reported compassion satisfaction at work. This relationship was in the expected direction, with greater pressure to produce predictive of lower compassion satisfaction. The small proportion of the variance accounted for suggests that pressure to produce may not be an important 'real world' predictor of compassion.

There was a significant indirect effect of 'pressure to produce' on compassion satisfaction through the *total* of all three threat-related emotion mediators  $b = -0.191$ ,  $BCa$  CI [-0.311, -0.076]. There was a significant indirect effect of 'pressure to produce' on compassion satisfaction' through 'social safeness',  $b = -0.140$ ,  $BCa$  CI [-0.254, -0.039]. There was no significant indirect effect of 'pressure to produce' on compassion satisfaction through anxiety ( $b = -0.120$ ,  $BCa$  CI [-0.288, 0.049] ) or shame ( $b = -0.065$ ,  $BCa$  CI [-0.07, -.177, 0.048]) as individual mediators. These findings are represented diagrammatically in *Figure 7*.

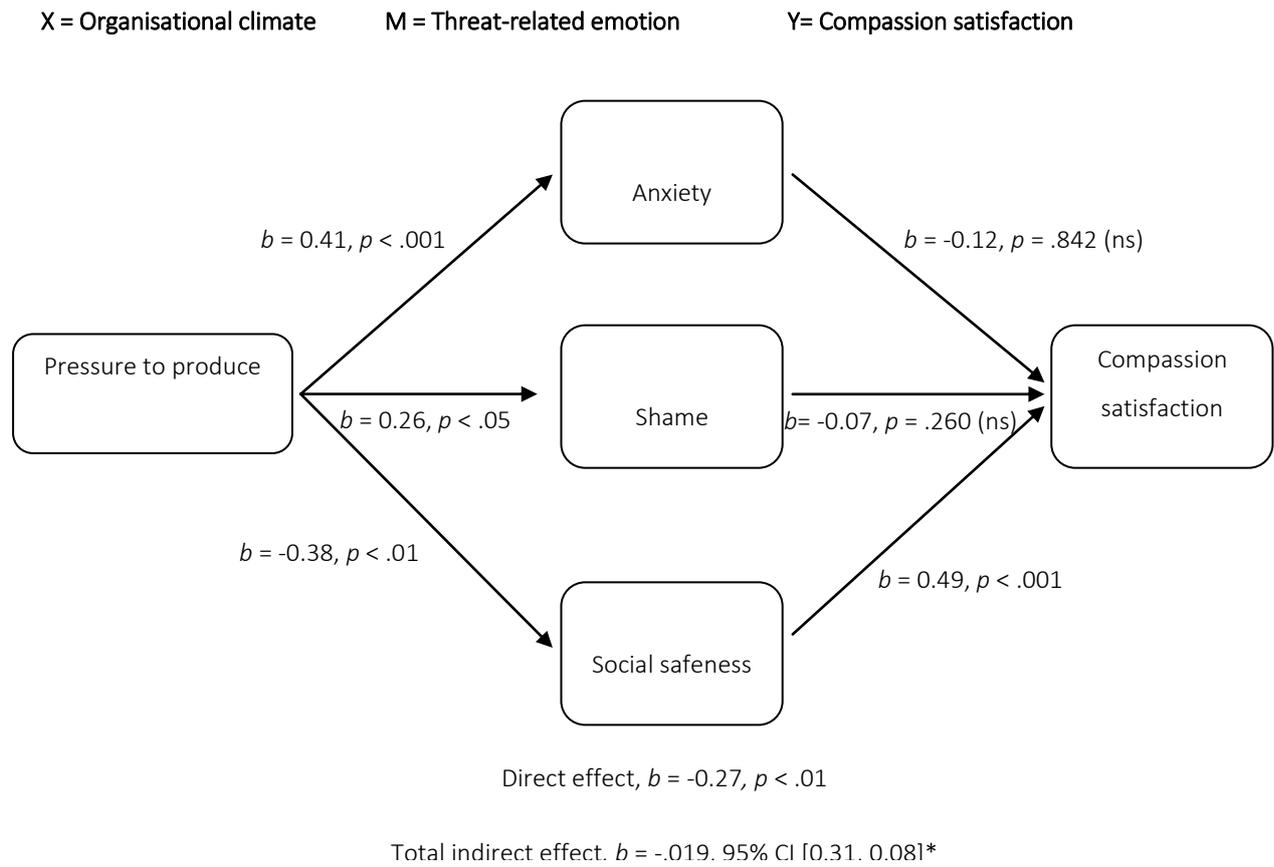


Figure 7. Model of 'pressure to produce' as a predictor of compassion satisfaction, mediated by threat-related emotion

\* Completely standardised indirect effect. Confidence interval for indirect effect is a BCa bootstrapped CI based on 5000 samples

Interestingly, in contrast to the multiple regression analysis (Part One), the mediation analysis represented in Figure 7 indicated a significant relationship between pressure to produce and *all three* threat-related emotion variables. This discrepancy can be explained by the fact that, in the mediation analysis, pressure to produce was entered as an individual predictor variable, whereas, in the multiple regression analysis, the variable was entered as part of a model containing three predictors. The small significant effect found in the mediation analysis should therefore be treated with caution as, when entered into a model with other predictors, pressure to produce does not appear to significantly predict self-reported shame or social safeness. This discrepancy does not necessarily invalidate the

mediation relationship reported here, although it does suggest that this particular finding should be interpreted with caution.

**Line-manager support for emotions.** Line-manager support for emotions significantly predicted compassion satisfaction,  $b = 0.229$ ,  $t = 4.650$ ,  $p = .001$ .  $R^2$  was .125 *indicating* that line-manager support explained 12.5% of the variance in self-reported compassion satisfaction. This relationship was in the expected direction, with greater line-manager support predictive of greater compassion satisfaction. There was a significant indirect effect of line-manager support for emotions on compassion satisfaction through the total of all three threat-related emotion mediators,  $b = 0.276$ , *BCa CI* [0.172, 0.384]. This relationship was in the expected direction, with greater perceived support for emotions from the line-manager predicting lower threat-related emotion, and greater compassion satisfaction. There was a significant indirect effect of line-manager support for emotions on compassion satisfaction through 'social safeness'  $b = 0.217$ , *BCa CI* [-0.118, -0.332]. There was no significant indirect effect of line-manager support for emotions on compassion satisfaction through anxiety  $b = -0.034$ , *BCa CI* [-0.018, 0.096] or shame  $b = 0.024$ , *BCa CI* [-0.027, 0.074] as individual mediators. These findings are represented diagrammatically in *Figure 8*.

X = Organisational climate

M = Threat-related emotion

Y = Compassion satisfaction

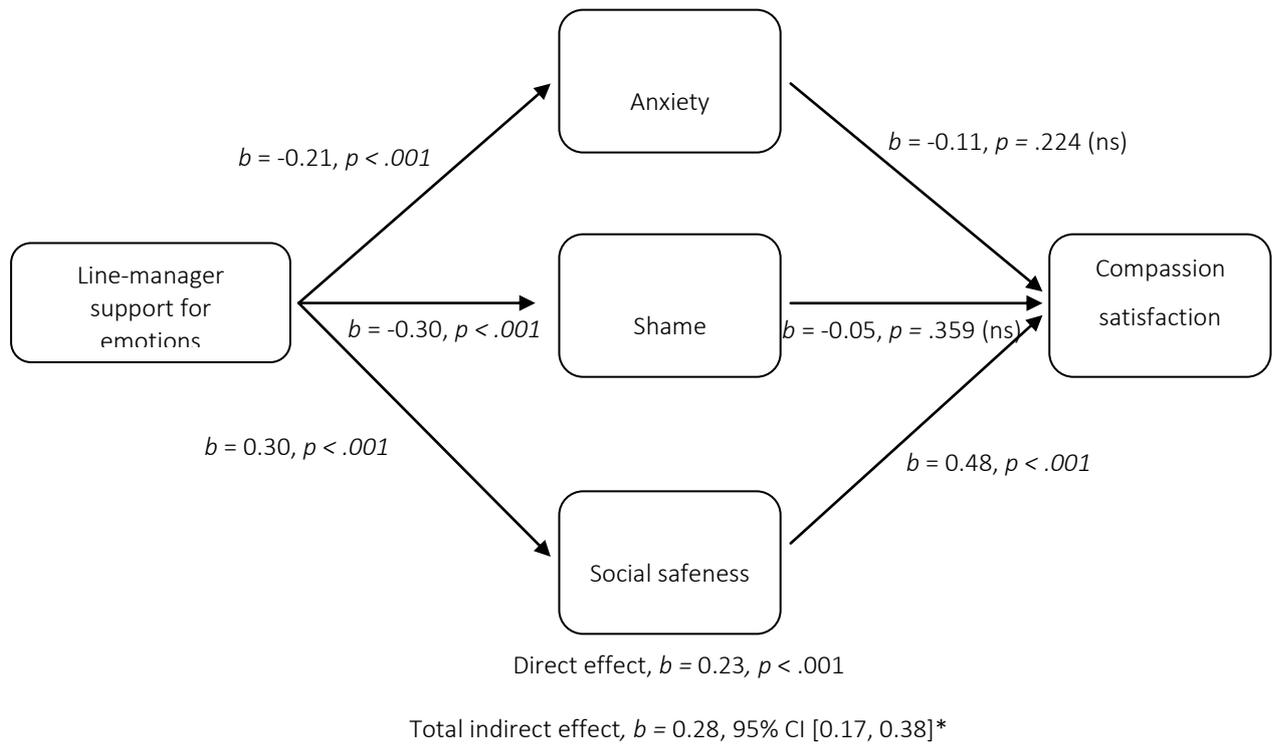
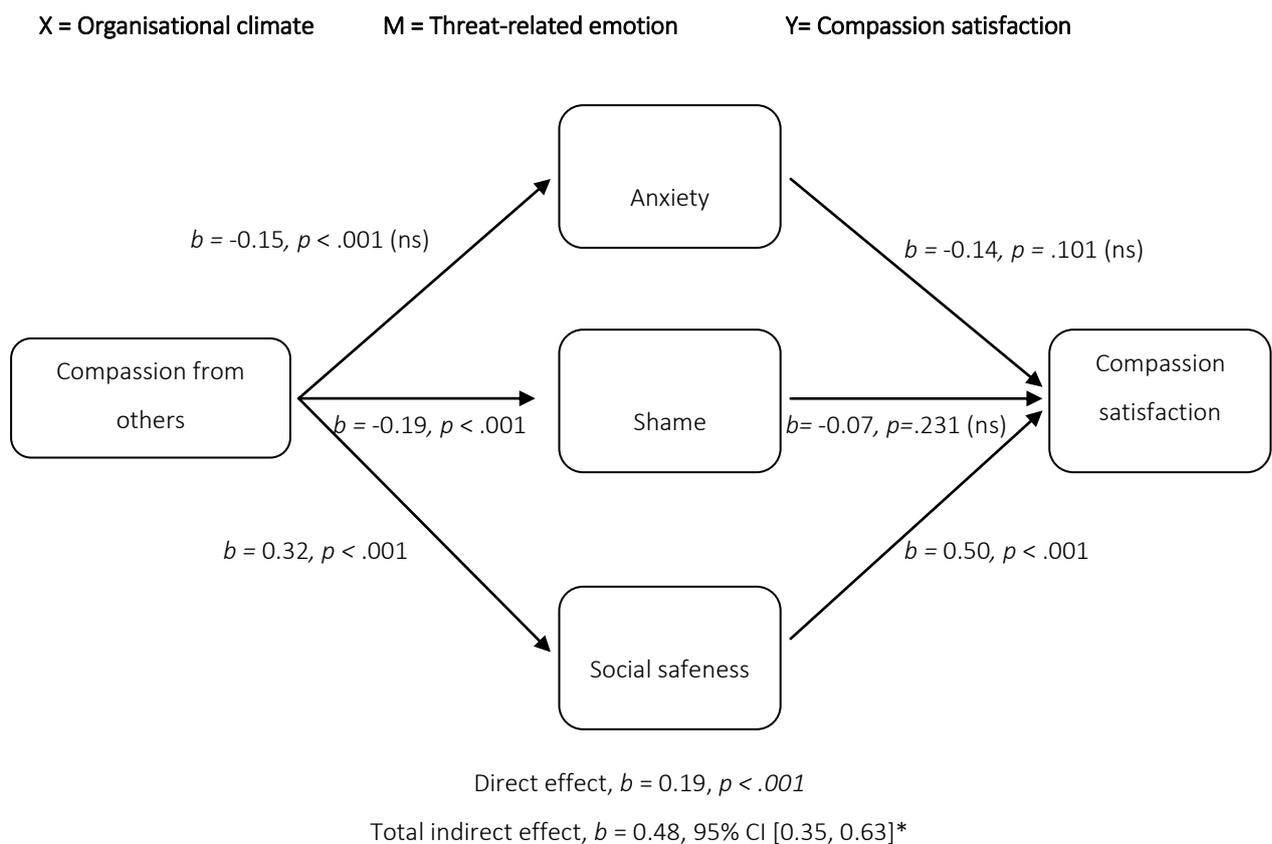


Figure 8. Model of line-manager support for emotions as a predictor of compassion satisfaction, mediated by threat-related emotion

\* Completely standardised indirect effect. Confidence interval for indirect effect is a BCa bootstrapped CI based on 5000 samples

**Compassion from others.** Compassion from others significantly predicted compassion satisfaction  $b = 0.186$ ,  $t = 6.38$ ,  $p < .001$ .  $R^2$  was .211, indicating that compassion from others explained 21.1% of the variance in compassion satisfaction scores. The relationship was in the expected direction with greater compassion from others at work predicting greater compassion satisfaction. There was a significant indirect effect of compassion from others on compassion satisfaction, through the total of all three threat-related emotion mediators  $b = .482$ , BCa CI [0.354, 0.626]. There was a significant indirect effect of compassion from others on compassion satisfaction through 'social safeness',  $b = 0.399$ , BCa CI [0.271, 0.537]. These

effects were in the expected direction, with greater compassion from others predictive of lower threat-related emotion/greater 'social safeness' and greater compassion satisfaction. There was no significant indirect effect of compassion from others on compassion satisfaction through anxiety,  $b = 0.050$ , BCa CI [-0.010, 0.116] or shame,  $b = 0.033$ , BCa CI [-0.025, 0.096]. These findings are represented diagrammatically in *Figure 9*.



*Figure 9.* Model of compassion from others as a predictor of compassion satisfaction, mediated by threat-related emotion

\* Completely standardised indirect effect. Confidence interval for indirect effect is a BCa bootstrapped CI based on 5000 samples

Together, the organisational climate predictors (pressure to produce, line-manager support for emotions and compassion from others) explained 37.7% of the variance in self-

reported compassion satisfaction. In contrast to the multiple regression analyses, in the mediation model, all organisational climate predictors were significantly predictive of all threat-related emotion predictors (anxiety, shame and social safeness). 'Social safeness' was the only significant predictor of compassion satisfaction. Therefore, the mediation models suggest a mediated relationship between (low pressure, high support) organisational climate and compassion satisfaction, through perceived 'social safeness'.

#### **4. Discussion**

The results of this study were largely supportive of its two hypotheses, which aimed to directly empirically test the theoretical application of 'compassionate mind' theory to the UK healthcare context. Firstly, there was broad support for the hypothesis that (self-reported) threat-related emotion among healthcare staff would be predicted by an organisational climate with high perceived pressure around productivity, and low perceived support for the relational and emotional aspects of employees' roles. Effect sizes and proportions of variance accounted for were relatively large for all three regression models, suggesting that these findings are more likely to represent meaningful 'real world' relationships.

Secondly, results partially supported the hypothesis of a mediated relationship between perceived organisational climate and compassion-related outcome, through (self-reported) threat-related emotion. A significant direct relationship was found between compassion satisfaction, and lower perceived 'pressure to produce'; higher perceived 'line-manager support for emotions'; and higher perceived 'compassion from others' at work. 'Social safeness' significantly mediated this relationship.

These mediation analyses supported theoretical propositions that a 'high trust, low threat' working environment may be important in promoting compassionate practice, and that this relationship can be explained by the mediating effect of promoting feelings of contentment, belonging, trust (and possibly by reducing threat-related emotion such as anxiety) (Cole-King & Gilbert, 2011; Cox, 2015; Crawford, Gilbert, Gilbert, Gale, & Harvey, 2013; De Zulueta, 2013).

Unexplained variance in the multiple regression models suggest that additional factors may also be important in predicting threat-related emotion among healthcare staff. These factors could include other organisational climate predictors theorised by compassionate mind approaches, such as hierarchy and top-down change (Crawford et al., 2014). Equally, unexplained variance may represent unrelated organisational climate factors, or work-related predictors, such as client group or role. Existing evidence suggests that demographic predictors such as age and gender are unlikely to be significant predictors of compassion-related outcomes such as burnout and compassion (Bria et al., 2012). However, it is possible that some systematic variation in the individual characteristics of healthcare professionals may contribute to their tendency to experience threat-related emotion. For example, it is proposed that many healthcare professionals are moved to work in healthcare as a result of their own lived experiences of distress and/or trauma (Gerada, 2015; Gilbert & Stickley, 2012).

Perceived pressure around productivity was significantly predictive of anxiety but was the weakest predictor of the three organisational climate variables in terms of shame, social safeness and compassion satisfaction. Moreover, anxiety and shame were not, individually, significantly predictive of compassion satisfaction. These specific findings may be supportive

of previous similar studies which have suggested that a supportive organisational climate can, to an extent, moderate the negative impact of a high level of work demands or other organisational stressors (Dasan et al., 2015; Johnson et al., 2012). Moreover, the significance of perceived 'social safeness' in this study is tentatively supportive of the theoretical explanation for this fact: that an emotionally supportive and compassionate organisational climate may promote feelings of 'positive calm' that, in turn, enable healthcare staff to engage with compassionate feelings and behaviours (Cole-King & Gilbert, 2011; Paul Gilbert, 2009a).

It is well-known that correlational study designs cannot determine causation and that reporting bias is common in self-report studies: it may be, for example, that staff experiencing more anxiety perceive their line-manager or organisation to be less supportive or compassionate, as much as an unsupportive organisational climate may cause anxiety. It is important to note, however, that a bi-directional relationship would actually be compatible with the theoretical propositions in this study: the neuropsychological processes involved in threat and self-protection are theorised to reinforce an unhelpful organisational climate (Cole-King & Gilbert, 2011; George, 2016). This bi-directional relationship makes sense in neuropsychological terms: it has been proposed the brain's stress response triggers processes of 'defensive inward focussing': people become focused on their own 'survival' and less able to connect with and engage in mutually supportive relationships with colleagues (George, 2016). Interestingly, there is some evidence that reflective group spaces such as Schwartz Rounds may reverse this process by facilitating feelings of connectedness with colleagues (George, 2016). Similarly, Ballat and Campling (2011) have used ideas from compassionate mind in their theory, "intelligent kindness", which is also a circular rather than a linear model: they theorise that organisational features provide the necessary conditions

for kindness. This leads to attentive, attuned care, which in turn generates better outcomes, reinforcing organisational conditions for compassion (Ballat & Campling, 2011).

#### **4.1 Limitations**

The main challenge in the design of this study was in finding valid and reliable quantitative measures of complex theoretical constructs. Measures had to be selected and adapted from other fields such as organisational psychology for business, and individual mental health measures. This challenge was in part a reflection of the fact that the study aimed to test an application of a theory about individual mental health difficulties to organisational systems. Although the slight adaptations did not involve changing the wording of individual items, and reliability statistics (Cronbach's alpha) were good, the use of some measures out of context may still have somewhat compromised validity. Moreover, certain aspects of organisational climate highlighted as potentially significant in theoretical applications of compassionate mind to healthcare organisations (e.g. hierarchy, competition and top-down change), were not able to be captured quantitatively by existing measures.

Secondly, the sample size of this study, although calculated for adequate statistical power, was relatively small in comparison to some other cross-sectional studies with healthcare staff. The sampling method used also means that some level of sampling bias is fairly likely. The demographics data suggest the sample may have been broadly representative of the wider NHS staff population, but systematic differences may have existed in other areas, such as participants' interest in compassion or levels of stress. Participants were disproportionately sampled from the South-East of England.

Thirdly, although effect sizes were large, this cannot straightforwardly be equated with practical importance or clinical significance because it cannot be assumed that differences in

scores equate to 'real world' differences in staff members' experience (Thompson, 2002).

This means that further evidence is needed. Qualitative evidence may be helpful in this respect.

## 4.2 Implications

**Practical implications.** The findings of this study are broadly supportive of the application of compassionate mind theory to healthcare organisations. In particular, organisations aiming to promote compassionate practice should foster a sense of 'social safeness' (feelings of connectedness, acceptance and trust between colleagues and managers) among staff at all levels of the organisation. Such efforts may include treating staff compassionately (i.e. engaging with and acting to alleviate staff stress); fostering emotionally supportive line-manager relationships (and, in turn, offering emotional support to managers). This may include supportive (or 'restorative') clinical supervision (Wallbank, 2013), and reflective group spaces such as Schwartz Rounds, for which there is some pre-existing evidence (Lown & Manning, 2010; Reed, Cullen, Gannon, Knight, & Todd, 2015; Wallbank, 2013; Williamson & Dodds, 1999). These factors may counter the negative effects of anxiety caused by stressors inherent to the task of providing healthcare.

Additionally, a point relevant to policy makers is that performance targets and excessive pressure in terms of productivity may undermine social safeness among healthcare staff (which may in turn undermine compassion and patient outcome). Theory also suggests that hierarchy and top-down change are likely to undermine social safeness, although this is not a proposition directly tested in this study (Cole-King & Gilbert, 2011). This suggests that current dominant features of healthcare policy-making in the UK may be at odds with the promotion of compassion and patient outcome (Crawford et al., 2014; George, 2017).

Although threat-related emotion (anxiety and shame) were not significantly associated with compassion satisfaction, threat-related emotion *was* predicted by organisational climate. This is important as pre-existing evidence and theory suggests that threat-related emotion is likely to be associated with other undesirable factors such as burnout and stress-related illness (Oehler, Davidson, Starr, & Lee, 1991).

**Research implications.** The design and validation of 'purpose-built' measures may be helpful, particularly with respect to organisational climate, in order to better capture the theoretical propositions of compassionate mind approaches as applied to this field.

A longitudinal study may help determine the direction of the relationships found in this study. For example tracking the change in organisational climate, threat-related emotion and compassion over time, in an NHS Trust subject to special measures, as improvements are made. A study incorporating patient experience or outcomes would also strengthen the conclusions drawn.

It may be the case that self-reported work-related anxiety and shame may, in turn, correlate with social safeness in a more complex way, possibly through a two or three step mediation or moderated mediation. Structural Equation Modelling (SEM) would be an alternative methodology for testing this model. A sample size of at least 400 is recommended for testing mediation with SEM (Wolf, Harrington, Clark, & Miller, 2013) and so a larger scale study may be recommended for this purpose.

## 5. Conclusion

This was an original study, which aimed to highlight and, for the first time, empirically test compassionate mind theory in relation to compassion in healthcare organisations. As hypothesised, a perceived climate of high pressure for productivity, low line-manager

support for emotions, and low compassion from colleagues and managers was significantly predictive of reduced compassion satisfaction. This relationship was mediated by low 'social safeness' (i.e. fewer feelings of 'positive calm', connectedness, trust and acceptance between colleagues). Other hypothesised mediators (work-related anxiety and shame) were not statistically significant mediators, although were significantly predicted by organisational climate. The study therefore offers support for theoretical propositions of 'compassionate mind' theory, as applied to healthcare organisations. Methodological limitations of this study mean that further research is needed, especially longitudinal, with larger samples, and inclusion of patient outcomes. Practical implications for healthcare managers and policy makers include a need to foster 'low threat, high trust' organisational climates, and to facilitate the relational aspects of employees' roles. Attempts to improve compassionate practice through increased top-down scrutiny and monitoring may be counterproductive.

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SECTION C

APPENDICES OF SUPPORTING MATERIAL



Appendix A. Quality appraisal information for qualitative studies (Section A)

	Clear statement of aims of the research?	Is a qualitative methodology appropriate?	Research design appropriate to aims of the research?	Was the recruitment strategy appropriate to the aims of research (have the methods used been justified?)	Was the data collected in a way that addressed the research issue?	Relationship between researcher and participants adequately considered?	Have ethical issues been taken into consideration?	Was data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?
<b>Dasan et al (2014)</b>	Yes. Mixed methods design - qualitative aspect aimed to: "explore potential causes and consequences of compassion satisfaction"	Yes Exploring participants' experiences of compassion satisfaction	Partially Partial justifications and explanations given	Yes. Clear sampling/recruitment strategy. Good justifications given.  Purposive sampling not fully justified - e.g. participants selected according to geography and gender - justification for these factors not given	Yes, although some reporting omissions Setting of interviews not specified; Interview topics not provided; Not specified whether methods were modified during the study; Saturation of data not discussed (pre-specified no. of participants) However, length of interviews, and method of data recording and analysis were given	Unclear This was not discussed explicitly but evidence of attempts to address potential bias. e.g. an independent researcher conducted the interviews, and the data was initially analysed independently by two researchers.	No Ethical issues not mentioned	Yes In-depth description of the analysis process  Themes supported by quotes	Yes Also demonstrated graphically	Valuable Clear links to practice and future research implications

	Clear statement of aims of the research?	Is a qualitative methodology appropriate?	Research design appropriate to aims of the research?	Was the recruitment strategy appropriate to the aims of research (have the methods used been justified?)	Was the data collected in a way that addressed the research issue?	Relationship between researcher and participants adequately considered?	Have ethical issues been taken into consideration?	Was data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?
<b>Teasdale et al (2001)</b>	Yes	Yes Mixed methods: qualitative aim was to explore nurses' use of support in critical incidents	Partially No explicit justification for qualitative aspect of design explicitly given - but seems appropriate.	Partially Little explicit justification. Large sample size. Thought given to sampling strategy - e.g. range of Trusts and both community and inpatient settings. Opportunity sample of nurses within randomly selected hospitals and community sites. Likely response bias - only 30% of responses included the qualitative sections.	Partially Questionnaire design - not justified although likely for practical reasons to permit collection along with questionnaire results. Only 30% of participants returned the qualitative sections	Partially Not explicitly discussed. A random sample of 10% of the events was re-coded by independent raters (90% agreement)	Yes Ethical issues addressed	Not clear Analysis method not named or clearly described. Reference made to Glaser & Strauss (grounded theory). Coding headings/names not listed. Two extended quotes only. Not possible to track where conclusions drawn from.	Yes	Valuable Clear links to practice and future research

	Clear statement of aims of the research?	Is a qualitative methodology appropriate?	Research design appropriate to aims of the research?	Was the recruitment strategy appropriate to the aims of research (have the methods used been justified?)	Was the data collected in a way that addressed the research issue?	Relationship between researcher and participants adequately considered?	Have ethical issues been taken into consideration?	Was data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?
<b>Upton et al (2012)</b>	Partially Mixed methods. Qualitative aims not stated - seemed to be open exploratory - aim to supplement quantitative data	Yes Mixed methods. Qualitative part of the study seemed to be exploratory (as part of a questionnaire investigating burnout) which was appropriate	Partially No explicit justification for qualitative aspect of design explicitly given - but seems appropriate	Partially Little explicit justification. Large sample size but low response rate Data likely to mainly be from the most highly stressed surgeons (17% response rate, then even lower proportion who completed the qualitative aspects - the burnout scores of those who completed the qualitative section were more likely to be high)	Partially Questionnaire design - not justified although likely for practical reasons to permit collection along with questionnaire results. Only 89 of 342 respondents	Partially Surgeons with higher burnout scores more likely to complete qualitative part of the study - this was acknowledged	Yes Ethical issues addressed	Yes, mostly Content analysis. Process of analysis clearly described. Themes listed but quotes and/or explanation not provided for all eight sub-themes. Main theme = burnout - perhaps obvious in a questionnaire about burnout?	Yes Not all themes clearly explained but generally clear statement of findings, also depicted graphically.	Valuable Clear links to practice and future research

Appendix B. Quality appraisal information for quantitative studies (Section A)

	Question/ objective sufficiently described? Study design evident & appropriate?	Method of subject selection or source of information/ input variable described & appropriate?	Subject characteristics sufficiently described?	Measures well defined and robust to measurement/ misclassification bias? Means of assessment reported?	Sample size appropriate?	Analytic methods described/justified and appropriate?	Some estimate of variance is reported for the main results?	Controlled for confounding?	Results reported in sufficient detail? Conclusions supported by results?
<b>Blumenthal et al (1998)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Possibility of selection bias acknowledged - as homes selected were already linked with the researchers. Good response rate (77%), although possibility of response bias.	Demographics were not reported	Yes, largely. Maslach Burnout Inventory = standardised measure. However, role clarity and perception of organisation questions designed by researcher using theory literature. These measures were piloted and tested for face validity, internal consistency and test-retest reliability.	Issues of statistical power were not discussed. Relatively small samples size but large enough to achieve statistical significance	Rationale for non-parametric tests not given/ statistical assumptions not reported. A number of statistical tests performed, increases possibility of type 1 errors. Efforts to mitigate this (i.e. significance set at p<0.01). Clinical significance not addressed, modest correlations	Standard deviations reported. Not-parametric tests: confidence intervals not reported.	No - no data was collected to enable confounding variables to be measured or controlled for. Narrow focus on two organisational factors meant not possible to assess their significance relative to that of other potential factors.	Yes, largely. Conclusions were modest and in line with data reported.
<b>Bowers et al (2011)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality - however structural equation modelling goes	Yes - large sample from large number of different settings enhances generalisability. Anonymous survey improves	No, demographics not reported (? not collected)	Yes - measures described - validated measures used. Measures also shown to be conceptually distinct from one another in principal components analysis	Very large sample size. T tests (to compare burnout among 'well-functioning' vs. 'poorly functioning	Yes. Structural equation modelling used to test/generate theory - this was appropriate.	Regression correlation coefficients given (all medium strength). No other estimates of variance given	Partially, yes. Principal components analysis and structural equation modelling allowed for exploration of variables' relationships	Yes, generally. However, not explicated what <b>kind</b> of teamwork or leadership might predict burnout (although able to somewhat ascertain indirectly from the measures'

	further than regression in determining likelihood of direction of relationships		veness of this sample not discussed		' teams) found statistically significant result with small difference in actual scores - possible type 1 error.			with each other in different combinations.  However, no demographics	subscales) - results discussed in terms of better/worse teamwork/leadership, rather than specific elements of leadership & teamwork.  Issue of possible type 1 error/statistical vs. clinical significance was not acknowledged
<b>Carson et al (1996)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design Cross-sectional design does limit conclusions regarding causality	No, not described.	Demographics not reported. Not clear if some were part time - in which case absolute caseload size not accurate indicator of workload.	Yes. Standardised measures used	Issues of statistical power not discussed.	Yes. Mann Whiney U tests used for comparison of means	Standard deviation reported for caseload size. No estimate of variance given for comparison of means	No	Partially - very short article. Demographics not reported. Methods reported only briefly.  No controlled for confounding variables  Overlap in standard deviations between the two caseload sizes.  Conclusions were generally modest and in line with limitations.
<b>Chana et al (2015)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design.	Likely unrepresentative sample (opportunity sample from one	Demographics reported in detail	Standardised measures were used and their validity and reliability reported	Issues of statistical power were not discussed.	Rationale for non-parametric tests was given. Wide range of potential stressors included	Standard deviations offered for means but confidence	Non-parametric tests meant that it was not possible to control for	Limitations acknowledged and generally appropriate conclusions, well

	Cross-sectional design does limit conclusions regarding causality	hospital. 90% female respondents)			Relatively small samples size but large enough to achieve statistical significance	enabled some comparison of their relative importance. A number of statistical tests performed, increases possibility of type 1 errors. However efforts to mitigate this (i.e. setting significance at p<0.01). Unclear to what extent statistical significance may have equated to clinical significance especially with more modest correlations.	intervals not possible due to non-parametric tests	confounding variables in the analysis. However, demographics tested separately and not found to be significantly correlated with other variables of interest.	supported by the data. However, overstated conclusion regarding prevalence of burnout in the nursing workforce considering sample size and representativeness issues...
<b>Coffey &amp; Coleman (2001)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design Cross-sectional design does limit conclusions regarding causality	Some efforts to avoid sampling bias: all identified forensic community mental health nurses from a variety (n=26) of NHS medium secure units were invited to participate. Four nurses excluded as colleagues of the researcher. Fairly even gender mix	Gender and age characteristics reported only.	Standardised measures were used with a rationale for selection given. References to validity and/or reliability made for 2/3 scales.	Issues of statistical power were not discussed. Relatively small sample size. Some sub-groups too small to detect statistically significant differences.	Findings re. caseload reported in detail and with appropriate statistical testing. However confounding variables not controlled for.  Low vs. high burnout samples were very small (n=7 and n=4) so not possible to test for statistical significance with	Non-parametric tests: estimates of variance not reported for findings	Demographics data collected and wide range of potential stressors. However no evidence that confounding variables were controlled for in analysis.	Limitations acknowledged and generally appropriate conclusions, well supported by the data.



	causality Mixed methods offered both good generalisability and richer understanding. However, not clear why some factors (e.g. workload, coping strategies) not measured qualitatively only - potentially limited generalisability of these	interview sample were made (purposive sample of high and low burnout, with geographical spread and gender mix	format)	above average) calculated based on previous research.				only explored qualitatively	factors only explored qualitatively and this distinction was not made clear in the conclusions.
<b>Edwards et al (2006)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Large sample size and attempts to reduce selection bias by recruiting from total population of CMHNs in Wales. However 32% response rate limits generalisability of findings - potentially those with strong opinions of supervision most likely to respond	Yes	Yes, standardised measures used and validity and reliability reported.	Yes, large sample size. Issues of statistical power not addressed.	Confounding variables not controlled for	Non-parametric tests: estimates of variance not reported for findings.	No - confounding variables not controlled for	Generally results reported in sufficient detail. However, timeframe for p's having received '6 supervision sessions' not specified - limits practical application  Significant but modest correlations - not clear how important supervision is practice/in relation to other factors  Generally conclusions were modest and in line with the data presented. Limitations were acknowledged.

<b>Hill et al (2010)</b>	Study aims were clear and hypotheses were consistent with pre-post design. However, lack of control group or comparison means any conclusions about effectiveness are limited.	Total population of ward staff recruited. However this was a small sample (n=19). No other wards participated. No comparison group.	Yes. Ward characteristics and participant demographics detailed.	Maslach Burnout Inventory used: a standardised measure of burnout. Reliability and validity given. Detailed description of the training content/process was not given.	Issues of statistical power not discussed. Small sample size	No - statistical method for comparison of means was not named (p score given only).	No. No standard deviations, confidence intervals or effect sizes reported.	No	Descriptive statistics and means given but statistical testing not reported. Conclusion that EE and DP reduced was not justified as these differences were slight and non-significant. Limitations such as lack of comparison group were not addressed
<b>Johnson et al (2012)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Yes. Total population of clinical staff from sampled clinical settings were recruited. Efforts made to sample a representative variety of clinical settings. Large sample. 64% response rate	Yes. Clinical settings characteristics and participant demographics detailed in table format	Yes, standardised measures used validity and reliability not reported.  Job characteristics measure informed by theory  Attempts made in analysis to explore overlap of concepts within the different wellbeing scales	Yes very large sample overall. However some subgroups small	Yes. Described in detail. Parametric statistical test enabled large number of variables to be tested.	Yes, confidence intervals and standard deviations reported.	Yes? Variables "independently predicted" suggests that other variables were controlled for	Yes, largely. Explanatory model generated which is supported by the results presented.
<b>Mandy (2000)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding	Yes. Consideration given to reducing bias e.g. randomising the 500 participants approached for participation.	All were newly qualified podiatrists. Demographics not reported	Yes standardised measures used	Yes. Statistical power discussed	Yes. Statistical tests were names and rationale given. References made to assumptions being met for parametric tests.	No	No	Generally conclusions were modest and in line with the data presented. Limitations were acknowledged Data not reported for

	causality	However, 46% response rate - possibility of response bias.							correlational analysis (only stated that no significant correlations found)
<b>Rafferty et al (2007)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Yes. Consideration given to reducing bias	Yes. Hospital characteristics described in detail. Nurse demographics provided. Patient characteristics also given.	Yes standardised measures used	Yes very large sample	Yes described in detail and rationale given	Yes, confidence intervals given.	Yes risk adjustment for patient data and confounding variables controlled for	Only study to capture patient outcomes and burnout Yes results supported in detail and conclusions supported by the data
<b>Ramirez et al (1996)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Consideration given to reducing bias. e.g. a random 2 in 3 sample of total population approached	Specialty, gender and age reported. Likely representativeness of these characteristics not discussed	Measures well defined. Means of assessment reported. However, likely degree of overlap between concepts of depression, burnout and job stress (measured as 3 separate constructs)	Large sample (good generalisability but increases likelihood of type 1 error)	Odds ratios	Confidence intervals not reported Effect sizes not reported for comparison of means	No	Yes, generally. However possibility of type 1 error/statistical vs. clinical significance not acknowledged - (weak Odds Ratio scores were highly statistically significant)
<b>Sharma et al (2007)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Yes. Total population of colorectal and vascular surgeons and nurses were sampled. 55.6% response rate	Yes. Participant demographics detailed in table format	Yes, standardised measures used validity and reliability not reported.	Issues of statistical power not discussed but sample size was large.	Yes largely. Described in detail. Parametric statistical test enabled a range of variables to be tested. Not stated if assumptions met for parametric tests.	No. No standard deviations, confidence intervals reported.	Yes. Variables "independently predicted" suggests that other variables were controlled for in the analysis	Generally conclusions were modest and in line with the data presented. Most limitations were acknowledged  Work satisfaction potentially an overlapping construct with

									burnout? Many 'predictors' seemed likely to be consequences of burnout e.g. 'mix less with friends'
									Narrow range of variables tested - not clear why specific variables chosen and how important these are in practice
									Correlations were modest
<b>Sharma et al (2008)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Yes. Total population of colorectal and vascular surgeons were sampled. 58% response rate	Yes. Participant demographics detailed in table format	Yes, standardised measures used validity and reliability not reported.	Issues of statistical power not discussed but sample size was large.	Yes largely. Described in detail. Parametric statistical test enabled a range of variables to be tested. Not stated if assumptions met for parametric tests.	No. No standard deviations, confidence intervals or effect sizes reported.	Yes? Variables "independently predicted" suggests that other variables were controlled for	Generally conclusions were modest and in line with the data presented. Most limitations were acknowledged  Work satisfaction potentially an overlapping construct with burnout? Many 'predictors' seemed likely to be consequences of burnout e.g. 'mix less with friends'
									Narrow range of variables tested - not clear why specific variables

									chosen and how important these are in practice
									Correlations were modest
<b>Sherring and Knight (2009)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Efforts made to reduce bias (i.e. whole population sample) but relatively low response rate - likely unrepresentative sample.	Yes. Participant demographics detailed in table format	Established measure of burnout was used. Additional questions created by researchers. Listed in appendix: demographics and Likert scales around perceptions of clinical supervision; feeling valued; supported; involved in decision-making	Issues of statistical power not discussed. Sample apparently large enough for statistical significance testing	Yes largely. Described in detail. Parametric statistical test enabled some estimate of variance. Not stated if assumptions met for parametric tests. Not clear why comparison of means chosen rather than correlation.	Standard deviations reported only. Not confidence intervals	No	Generally conclusions were modest and in line with the data presented. Most limitations were acknowledged  Effect sizes reported.
<b>Teasdale et al (2001)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Efforts made to reduce bias - i.e. by recruiting from a range of clinical settings. However, response rate was low - 40%	Yes. Participant demographics detailed in table format	Standardised measures used and the final combination of measures was piloted before final distribution	Yes. Statistical power calculations were reported.	Yes. Non-parametric tests.	Yes confidence intervals reported	Consideration given to confounding variables: the supervised and unsupervised groups were comparable in terms of most demographics	Generally conclusions were modest and in line with the data presented. Most limitations were acknowledged
<b>Upton et al (2012)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Yes	Yes	Validated measure used. Questionnaire design approached individualistically (i.e. focus on demographics only) so that organisational factors were not	Large sample size although issue of statistical power not discussed	Yes	No	Partially - stepwise regression. but organisational/job characteristics not captured	Generally conclusions were modest and in line with the data presented. Most limitations were acknowledged

able to be defined.

<b>Wallbank &amp; Hatton (2011)</b>	Study aims were clear and consistent with pre-post design. However, design was weak as Supervision intervention took place concurrently with leadership training programme. There was no control group and sample size was too small	Band 6 nurses only. Not clear how recruited	Partially	Yes. Standardised measures used	Small sample size (n=22). Statistical significance testing not possible.	No statistical significance testing	No	Reporting issues: discussion mixed with in results	Limitations not acknowledged, conclusions and recommendations overstated.  Not clear what elements of supervision were helpful - may have been better as a qualitative study given small sample size
<b>Watts et al (2013)</b>	Yes. Study aims were clear and hypotheses were consistent with cross-sectional correlational design. Cross-sectional design does limit conclusions regarding causality	Yes total population eligible. However likely unrepresentative sample? Only 129 nurses recruited from the three Trusts	Yes. Participant demographics detailed in table format	Yes. Standardised measures used. One of few studies to attempt to capture culture - a complex construct - unlikely to be fully captured in quantitative design	Yes	Yes	Yes	Controlled for demographics in analysis	Yes although small percentage of variance accounted for

## Appendix C. Consent form

*NB. This form was used in an online format. Participants who selected each of the following boxes were able to go forward to complete the questionnaire. Participants also took part anonymously. Therefore, signed copies of consent forms are not included here.*

### Consent Form

#### Please initial 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 during the questionnaire (as data is anonymous, it can't be identified/withdrawn after the questionnaire is submitted)

3. I understand that anonymous data collected during the study will be looked at by my supervisors Sue Holttum and Melanie George. I give permission for these individuals to have access to my anonymous data.

4. I understand that anonymous quotes from my questionnaire may be used in published reports of the study findings.

5. I understand that my organisations will receive feedback in the form of anonymised group findings only (no personal or individual feedback will be given).

6. I agree to take part in the above study.

## **Appendix D. Participant information sheet**

### Information Sheet

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#### *Experiences of healthcare staff at work - a questionnaire study*

##### **What is the purpose of the study and why have I been asked to take part?**

Hello, my name is Rebecca and I'm a trainee clinical psychologist (and ex-nurse). As part of my doctoral research I have designed a questionnaire for healthcare staff. I am interested in the 'culture' or 'climate' of healthcare organisations, as well as the emotional experience of staff. All staff in your organisation (clinical and non-clinical) are being invited to take part. I am hoping to recruit at least 150 participants in total.

##### **What will I have to do?**

Simply click the link in this email and complete the anonymous questionnaire (you may also see me around with paper versions). The questionnaire should take about 15-20 minutes. There will be questions about your workplace, your manager(s) and how you feel at work. All questions are completely confidential and anonymous. Individual responses will not be shared with your organisation. Most of the questions are multiple choice, but there will also be space for longer responses if you wish.

##### **Do I have to take part?**

This is an optional questionnaire. If you agree to take part, there's a consent form to complete. You can change your mind and choose not to submit the questionnaire at any time, without giving a reason (as it's anonymous I can't remove your data once the questionnaire has been submitted).

##### **What are the possible disadvantages and risks of taking part?**

There shouldn't be any significant risks or disadvantages to taking part. However, some of the questions involve thinking about some potentially negative aspects of work, including things like anxiety. You may therefore wish to complete this questionnaire in a private space.

##### **What are the possible benefits of taking part?**

All participants will be offered the opportunity to enter into a prize draw to win £50. You will be contributing to research into how the experiences of healthcare staff at work could be improved.

##### **How your data is kept safe:**

Your data will be anonymous and will be kept confidential. You will not be asked for your name or directly identifying information at any point. Demographics data (e.g. age, length of time in post) will be collected. There is a small chance that this demographics data could make you identifiable to some, and so any such information will remain confidential to the researcher and all information will be treated securely. Data will be collected securely via survey software called 'Qualtrics'. If completing in person on paper, I will store these questionnaires securely in a locked case. If you remain concerned about being identifiable, you can leave any demographics questions unanswered.

- Anonymous data will be encrypted and stored on password protected computers during the course of the project. After completion of the project data will be stored on a password protected CD in the centre's office in a locked cabinet and in my possession for 5 years after the study is completed, after which time it will be destroyed.
- You will be offered the opportunity to give your email to be entered into the prize draw. If you choose to leave your email, this will be separated from your questionnaire responses which will be downloaded into a database anonymously as a batch along with those of other participants.

### What will happen to the results of the research study?

- I will publish the overall results of the study. You will not be identified in any report. Anonymised quotes from open-ended questions on questionnaires may be used in published reports.
- If you would like to be contacted directly about the general results of the study, just leave your email address.
- Due to the design of this study, it would not be possible or meaningful to provide feedback of your individual results.

### Who is organising and funding the research?

Canterbury Christ Church University.

### Who has reviewed the study?

All research in the NHS is looked at by the Health Research Authority (HRA). This study has been reviewed by the HRA and my university's Research Ethics Committee.

### Further information and contact details

#### *1. Specific information about this research project.*

You can leave a message for me on a 24-hour voicemail phone line at 03330117070. Please say that the message is for me, Rebecca Newman, and leave a contact number so that I can get back to you. Or just email [r.c.newman119@canterbury.ac.uk](mailto:r.c.newman119@canterbury.ac.uk)

#### *2. Complaints*

If you have a concern about this study, you can leave a message for me, as above, on 03330117070. If you remain unhappy and wish to complain formally, you can do this via my university by contacting Professor Paul Camic on 0333 011 7091, [paul.camic@canterbury.ac.uk](mailto:paul.camic@canterbury.ac.uk).

#### *3. Information about stress at work*

Of course, a degree of stress at work is normal, but if you are struggling with a stressful work environment, you can find information and support here:

**General advice about work stress:** <http://www.time-to-change.org.uk/get-involved/get-your-workplace-involved/support-employees/how-cope-stress>

**Specific information for emergency service workers:** <http://mind.org.uk/news-campaigns/campaigns/bluelight/>

**Specific information for nurses and healthcare assistants:**

[https://www2.rcn.org.uk/\\_\\_data/assets/pdf\\_file/0008/78515/001484.pdf](https://www2.rcn.org.uk/__data/assets/pdf_file/0008/78515/001484.pdf)

**Government watchdog:** <http://www.hse.gov.uk/stress/>

**Acas (Advice and guidance on employment relations)**

0300 123 1100

[acas.org.uk](http://acas.org.uk)

Your employer will also provide an Employee Assistance Programme, accessible via occupational health.

*Appendix E. Ethics approval letter*

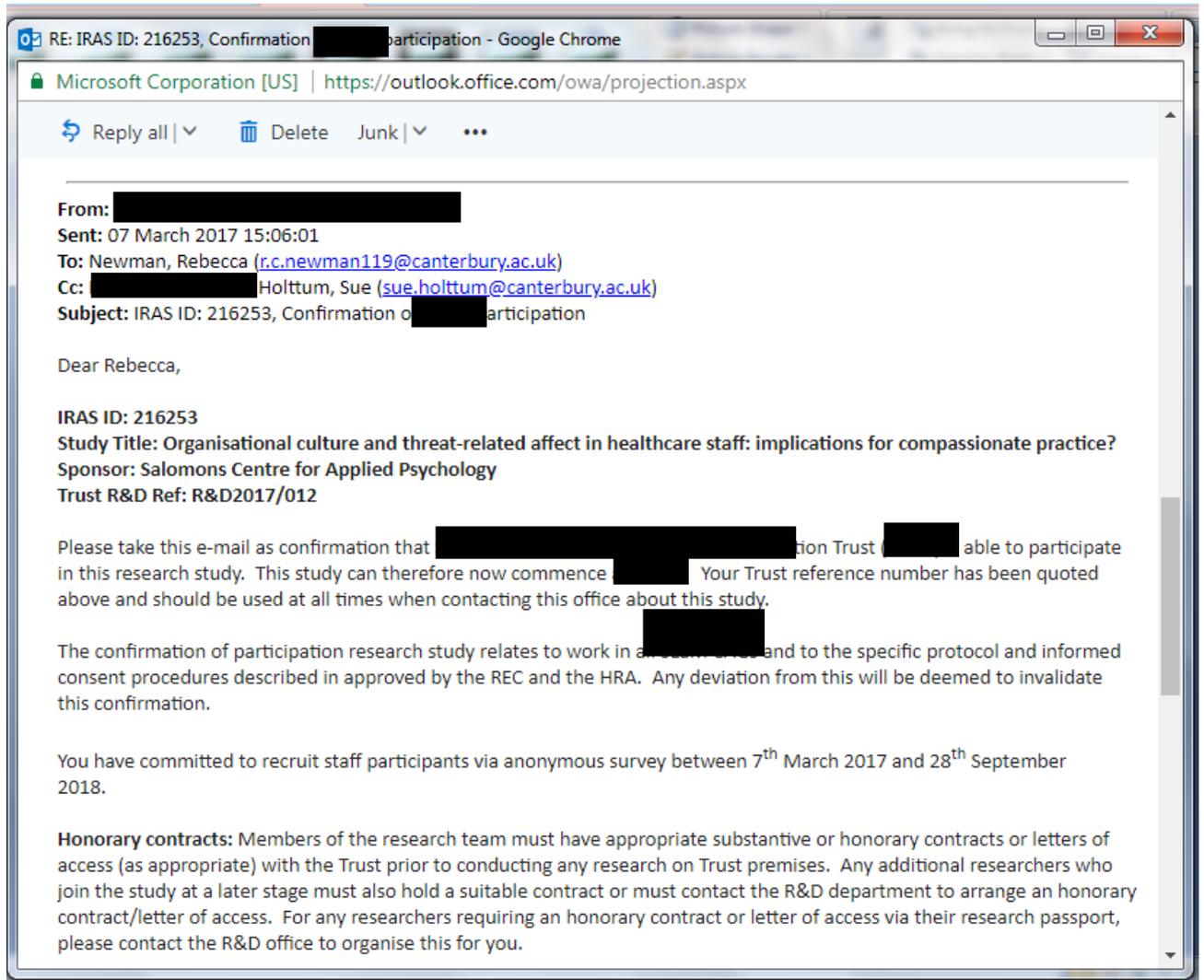
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*Appendix F.* Health Research Authority approval letter

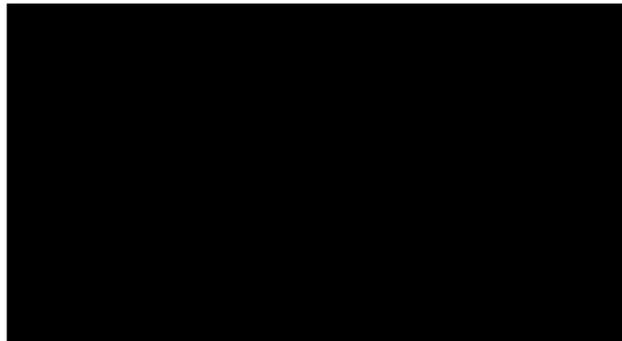
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## Appendix G. Research and Development departments approval (anonymised)

NHS Trust 1



NHS Trust 2



12/12/2016

Rebecca Newman  
CCCU  
Salomons Centre for Psychology  
CCCU  
Broomhill Road  
TN3 0TF

Dear Rebecca Newman

**Organisational culture and threat related emotion in healthcare staff**

**Confirmation of Capacity and Capability at [REDACTED] NHS Foundation Trust**

R&D Ref	2016/PSYCH/02
IRAS No	216253

This letter confirms that [REDACTED] Trust has the capacity and capability to deliver the above referenced study. Please find attached our *(Delete as appropriate signed agreement, agreed Statement of Activities)*

We agree to start this study on 12<sup>th</sup> December 2016.

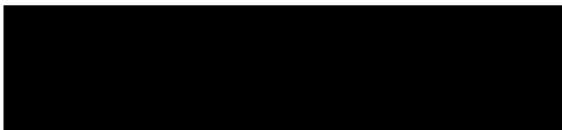
**70 day First Patient First Visit Benchmark**

First Patient/First Visit recruited due date:
20/02/2017

It is a condition of NHS R&D Permission at [REDACTED] that the First Patient First Visit (FPFV) and all local recruitment is uploaded to the ReDA system. This 70 day benchmark is mandated by the Department of Health and is measured from a valid SSI submission to the first patient recruited. Where the benchmark is exceeded the PI is required to provide the R&D Department with a valid reason for purposes of reporting to DH. For further guidance see <http://www.oxhft.nhs.uk/patients-and-visitors/research-and-development/our-research/summary-of-performance/>.

If you wish to discuss further, please do not hesitate to contact me.

Yours sincerely



Research & Development Manager

Copy to: Sponsor – Paul Gamic

Re: Staff recruitment for doctoral research project - Google Chrome

Microsoft Corporation [US] | <https://outlook.office.com/owa/projection.aspx>

Reply all | Delete | Junk | ...

**DA** [Redacted]@nhs.net >

Mon 20/02/2017, 07:59  
Newman, Rebecca (r.c.newman119@canterbury.ac.uk) v

Deleted Items

You replied on 20/02/2017 12:13.

Action Items

Hi Rebecca

Yes, [Redacted] can participate in your study. Have you identified a local collaborator who can help liaise between yourself and the study participants, perhaps your [Redacted] ment supervisor?

All the best

[Redacted] Research and Knowledge Manager  
Tel: 0203 260 5118  
Em: a[Redacted]  
[Redacted] Research and Development Office | [Redacted]

Contact me for information regarding national and local research studies, service evaluations and quality projects, literature search training

Hospice

---

**From:** [REDACTED]  
**Sent:** 26 July 2016 11:12:02  
**To:** Newman, Rebecca ([r.c.newman119@canterbury.ac.uk](mailto:r.c.newman119@canterbury.ac.uk))  
**Subject:** RE: Research

Dear Rebecca.

We discussed your proposal at our meeting this morning [REDACTED] are happy to participate, although to be honest you might not get 50 participants from here. We felt that the best way of proceeding, once you have approval for the project, is for you to email the link to me, which I will forward to each of the Heads of Services. They can then email it on to everyone in their department. We felt this would be preferable to forwarding all the email addresses to you, which we can't be sure we have everyone's permission for. Does that sound ok to you?

When do you think you'll be likely to commence the research?

All the best.

[REDACTED]

## Appendix H. Measures

### "Pressure to produce" subscale of Organisational Climate Measure (Patterson et al, 2005)

1. [Removed for copyright reasons]

### Organisational response to emotions (line manager subscale) (George, 2016)

1. My line manager cares about my emotional wellbeing
2. My line manager is aware that my role requires me to continually suppress my private feelings in order to prioritize the emotional and psychological needs of patients and families\*
3. My line manager is aware that the psychological support that I provide to patients and families can be draining\*
4. My line manager is aware that some patients and their loved ones can be aggressive and bullying towards frontline staff and that this can represent a significant additional source of stress/pressure\*
5. My line manager takes time to ask me about the emotional impact of my work
6. My line manager has the necessary people skills to provide me with emotional support
7. My line manager avoids discussing emotional issues with me
8. My line manager's main focus is on meeting targets from regulators and avoiding blame
9. My line manager is too stressed to provide me with emotional support
10. I believe that it is not the line managers job to deal with stress and emotional exhaustion amongst their staff
11. My line manager does not seem to notice when I am feeling stressed or emotionally exhausted
12. My line manager notices when I am feeling stressed or emotionally exhausted but appears indifferent

\*To add "Not applicable to my role" option as may not apply to all healthcare staff

### 'Compassion from others' Action subscale of Compassionate Action And Engagement scales (Gilbert et al, 2016)

[Added: Thinking about your experience at work:]

1. Others direct their attention to what is likely to be helpful to me.
2. Others think about and come up with helpful ways for me to cope with my distress.
3. Others don't know how to help me when I am distressed
4. Others take the actions and do the things that will be helpful to me.
5. Others treat me with feelings of support, helpfulness and encouragement.

### Hospital Anxiety and Depression Scale: Anxiety subscale (Zigmond & Snaith, 1983)

[Added: Thinking about your experience at work:]

1. I feel tense or 'wound up'
2. I get a sort of frightened feeling as if something awful is about to happen
3. Worrying thoughts go through my mind
4. I get a sort of frightened feeling like 'butterflies' in the stomach
5. I feel restless as I have to be on the move
6. I get sudden feelings of panic
7. I can sit at ease and feel relaxed

### Other as shamer scale (short form) (Goss, Gilbert & Allan, 1994)

[Added: Thinking about your experience at work:]

1. Other people see me as not measuring up to them
2. I think that other people look down on me

3. I feel other people see me as not good enough
4. Other people see me as small and insignificant
5. I feel insecure about others opinion of me
6. People see me as unimportant compared to others
7. Other people see me as somehow defective as a person
8. Others think there is something missing in me

Social Safeness and Pleasure Scale (Gilbert et al, 2009)

[Added: Thinking about *your experience at work*:]

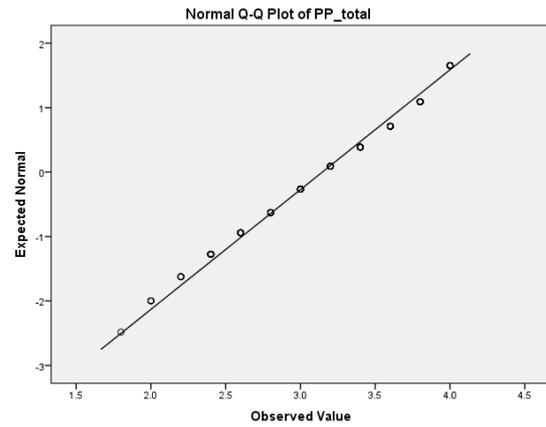
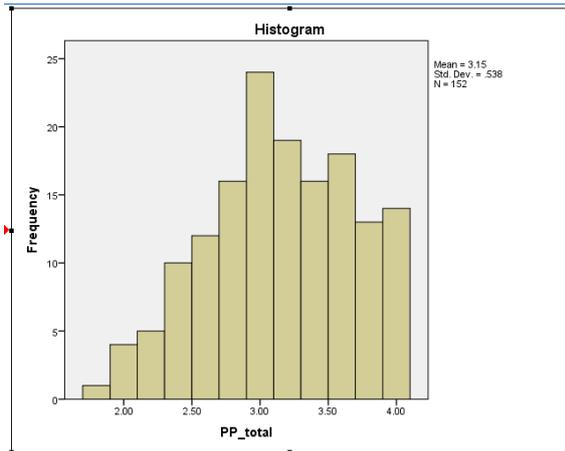
1. I feel content within my relationships
2. I feel easily soothed by those around me
3. I feel connected to others
4. I feel part of something greater than myself
5. I have a sense of being cared about in the world
6. I feel secure and wanted
7. I feel a sense of belonging
8. I feel accepted by people
9. I feel understood by people
10. I feel a sense of warmth in my relationships with people
11. I find it easy to feel calmed by people close to me

"Compassion satisfaction" subscale of Professional Quality of Life Scale (Stamm, 2009)

1. I get satisfaction from being able to help people.
2. I feel invigorated after working with those I help. I like my work as a helper.
3. I am pleased with how I am able to keep up with helping techniques and protocols.
4. My work makes me feel satisfied.
5. I have happy thoughts and feelings about those I help and how I could help them.
6. I believe I can make a difference through my work.
7. I am proud of what I can do to help.
8. I have thoughts that I am a "success" as a helper.

**Appendix I. Distribution graphs and tests for total scales (applicable to multiple regression analyses only)**

'Pressure to produce' (PP)

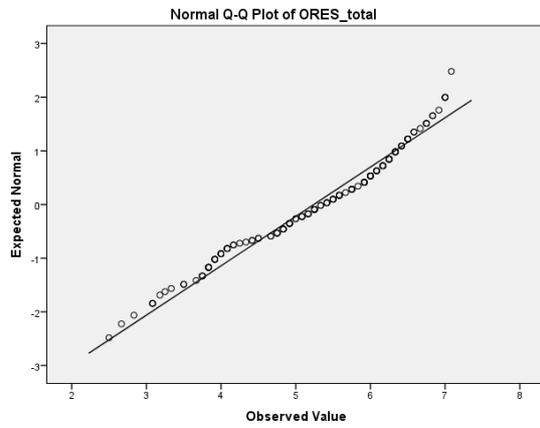
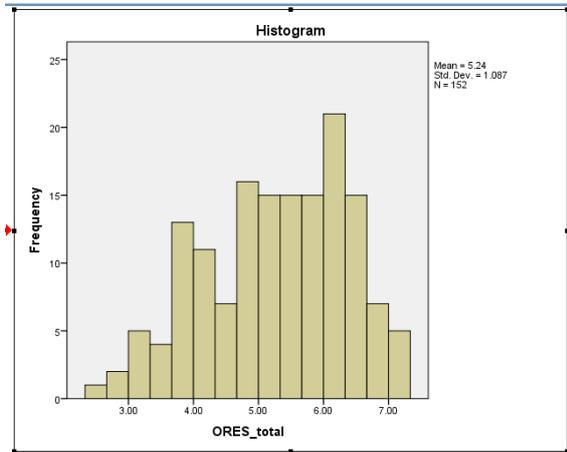


PP_total		Mean	Std. Dev.	N
Mean		3.1461	.53783	152
95% Confidence Interval for Mean	Lower Bound	3.0599		
	Upper Bound	3.2322		
5% Trimmed Mean		3.1599		
Median		3.2000		
Variance		.289		
Std. Deviation		.53783		
Minimum		1.80		
Maximum		4.00		
Range		2.20		
Interquartile Range		.80		
Skewness		-.226	.197	
Kurtosis		-.652	.391	

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PP_total	.095	154	.002	.966	154	.001

a. Lilliefors Significance Correction

'Line manager support for emotions' (ORES)

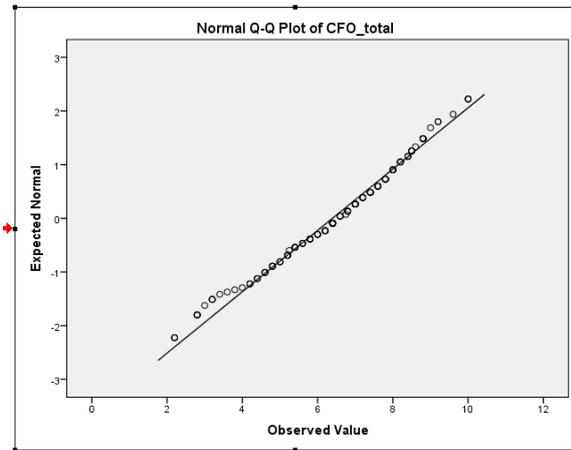
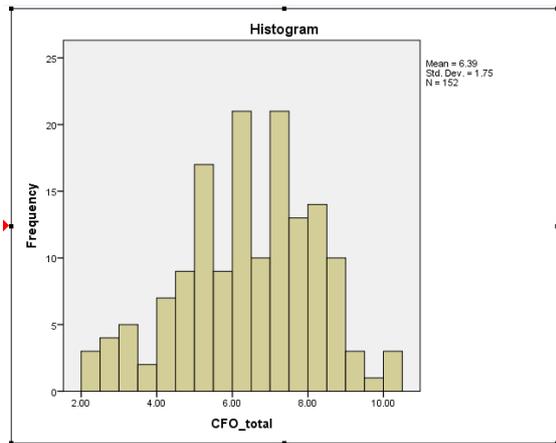


ORES_total	Mean		5.2413	.08817
95% Confidence Interval for Mean	Lower Bound		5.0671	
	Upper Bound		5.4155	
	5% Trimmed Mean		5.2731	
	Median		5.3750	
	Variance		1.182	
	Std. Deviation		1.08698	
	Minimum		2.50	
	Maximum		7.08	
	Range		4.58	
	Interquartile Range		1.73	
	Skewness		-.410	.197
	Kurtosis		-.679	.391

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ORES_total	.094	154	.002	.967	154	.001

a. Lilliefors Significance Correction

'Compassion from others' (CFO)



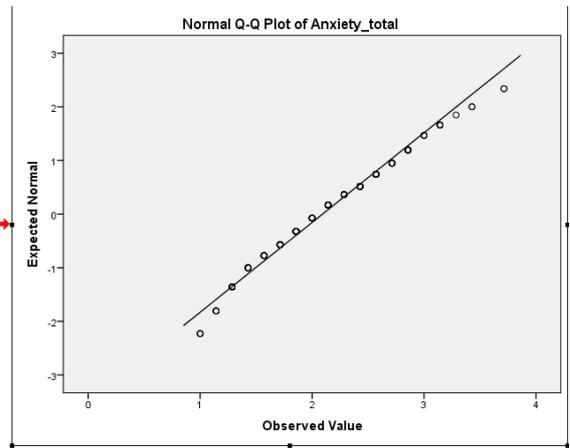
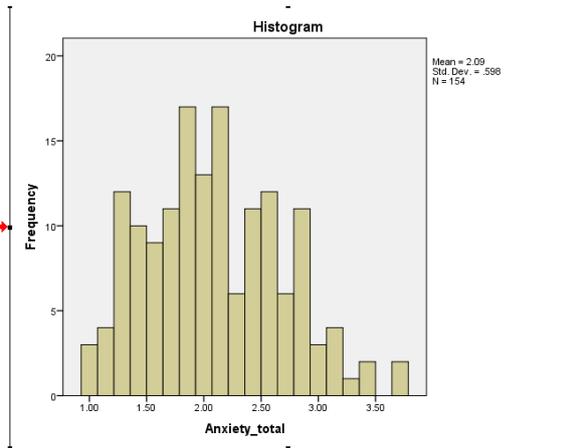
		Statistic	Std. Error	
CFO_total	Mean	6.3941	.14192	
	95% Confidence Interval for Mean	Lower Bound	6.1137	
		Upper Bound	6.6745	
	5% Trimmed Mean	6.4329		
	Median	6.4000		
	Variance	3.061		
	Std. Deviation	1.74968		
	Minimum	2.20		
	Maximum	10.00		
	Range	7.80		
	Interquartile Range	2.60		
	Skewness	-.348	.197	
	Kurtosis	-.305	.391	

**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CFO_total	.080	152	.018	.981	152	.038

a. Lilliefors Significance Correction

# 'Anxiety'

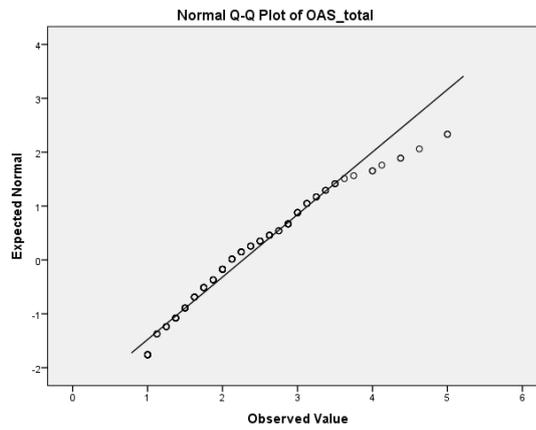
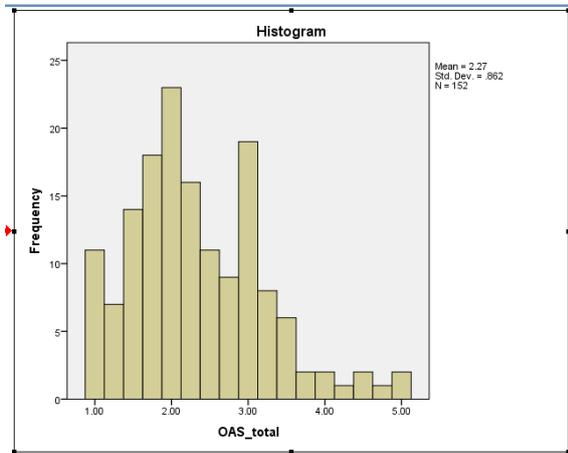


Descriptives			
		Statistic	Std. Error
Anxiety_total	Mean	2.0937	.04815
95% Confidence Interval for Mean	Lower Bound	1.9986	
	Upper Bound	2.1888	
5% Trimmed Mean		2.0772	
Median		2.0000	
Variance		.357	
Std. Deviation		.59753	
Minimum		1.00	
Maximum		3.71	
Range		2.71	
Interquartile Range		.89	
Skewness		.346	.195
Kurtosis		-.393	.389

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Anxiety_total	.091	154	.004	.976	154	.009

a. Lilliefors Significance Correction

## 'Shame' (OAS)



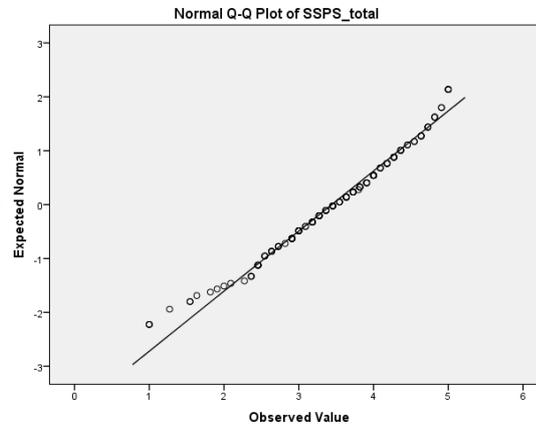
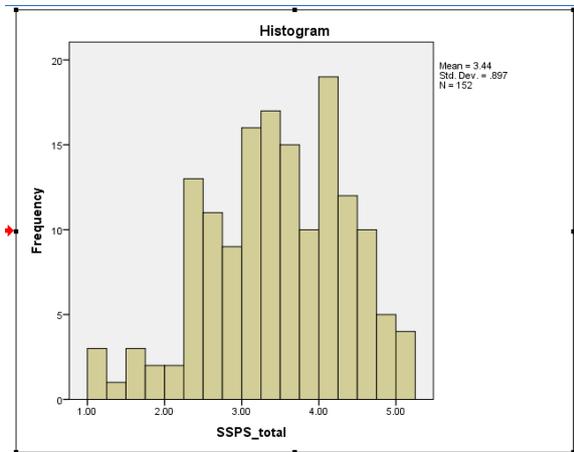
OAS_total	Mean		2.2730	.06993
	95% Confidence Interval for Mean	Lower Bound	2.1349	
		Upper Bound	2.4112	
	5% Trimmed Mean		2.2222	
	Median		2.1250	
	Variance		.743	
	Std. Deviation		.86212	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.25	
	Skewness		.757	.197
	Kurtosis		.518	.391

**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
OAS_total	.104	154	.000	.951	154	.000

a. Lilliefors Significance Correction

# 'Social safeness' (SSPS)



SSPS_total	Mean		3.4413	.07278
	95% Confidence Interval for Mean	Lower Bound	3.2975	
		Upper Bound	3.5851	
	5% Trimmed Mean		3.4755	
	Median		3.4545	
	Variance		.805	
	Std. Deviation		.89725	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.18	
	Skewness		-.435	.197
	Kurtosis		-.054	.391

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SSPS_total	.068	154	.077	.975	154	.007

a. Lilliefors Significance Correction

## **Appendix J. End of study report for Salomons Campus Ethics Panel and NHS R&D**

This is to inform you that the study "Organisational climate and threat-related emotion among healthcare staff: implications for compassionate practice?" is now completed. A short summary of my report is provided for your information.

### **Organisational climate and threat-related emotion among healthcare staff: implications for compassionate practice**

#### **Context**

Following some high-profile cases of institutional neglect and abuse in recent years, the UK National Health Service (NHS) faces a widespread perception of a lack of compassion. Media narratives have often blamed the problem on 'uncaring' healthcare staff. Government responses have also mostly focused on increased scrutiny and monitoring. However, psychological theory suggests that supportive leaders and organisational systems are crucial to enabling healthcare staff to practice compassionately.

Specifically, 'compassionate mind' theory (Gilbert, 2010) proposes that:

- The human brain has a 'threat and self-protection' system. This system suppresses another neuropsychological system involved with compassion. These emotion-regulation systems are activated or suppressed mainly in response to social context.
- Healthcare work (i.e. engaging with others' distress and suffering) often involves managing anxiety and other threat-related emotions
- Organisational contexts (e.g. high pressure around productivity and targets) may further activate employees' 'threat and self-protection' system', suppressing compassion-related processes
- An organisational context of group cohesion and support may reduce the dominance of the 'threat and self-protection system', promoting compassion-related processes.

There was some existing evidence that seemed to support this theory, but it had not been directly tested before.

#### **Aims and hypotheses**

This research project aimed to directly test the above theory, and hypothesised that:

1. A 'high pressure, low support' organisational climate would predict threat-related emotion among healthcare staff
2. Threat-related emotion would, in turn, predict compassion-related outcome (a 'mediated' relationship).

## Methods

154 staff from a range of UK healthcare organisations and professional roles completed an anonymous online cross-sectional survey. Data were analysed using multiple regression and mediation analysis.

## Findings

As hypothesised, a perceived climate of high pressure around productivity, low line-manager support for emotions, and low compassion from colleagues and managers was significantly predictive of reduced compassion satisfaction. This relationship was mediated by low 'social safeness' (feelings of 'positive calm', connectedness, trust and acceptance between colleagues). Other hypothesised mediators (work-related anxiety and shame) were not statistically significant, although were significantly predicted by organisational climate.

## Implications

- Results were supportive of the application of compassionate mind theory to the context of healthcare organisations, although further research is needed.
- Compassionate practice may be promoted by organisational efforts to foster 'social safeness' (feelings of connectedness, acceptance and trust between colleagues and managers) among staff at all levels. Such efforts may include 'compassionate leadership' (i.e. engaging with and acting to alleviate staff stress); fostering emotionally supportive line-manager relationships (and, in turn, offering emotional support to managers). This may include supportive (or 'restorative') clinical supervision (Wallbank, 2013), and reflective group spaces such as Schwartz Rounds. These factors may counter the negative effects of anxiety caused by stressors inherent to the task of providing healthcare.
- Attempting to improve compassion and patient outcome through increased scrutiny and monitoring of staff may be counterproductive.

## **Appendix K. End of study report for participants**

Thank you very much for participating in my study, which was advertised in Spring/Summer 2018 with the title: *Experiences of healthcare staff at work - a questionnaire study*. This short report is a summary of the study's context, aims, methods, findings and implications.

### **Organisational climate and threat-related emotion among healthcare staff: implications for compassionate practice**

#### **Context**

Following some high-profile cases of institutional neglect and abuse in recent years, the UK National Health Service (NHS) faces a widespread perception of a lack of compassion. Media narratives have often blamed the problem on 'uncaring' healthcare staff. Government responses have also mostly focused on increased scrutiny and monitoring. However, psychological theory suggests that supportive leaders and organisational systems are crucial to enabling healthcare staff to practice compassionately.

Specifically, 'compassionate mind' theory (Gilbert, 2010) proposes that:

- The human brain has a 'threat and self-protection' system. This system suppresses another neuropsychological system involved with compassion. These emotion-regulation systems are activated or suppressed mainly in response to social context.
- Healthcare work (i.e. engaging with others' distress and suffering) often involves managing anxiety and other threat-related emotions
- Organisational contexts (e.g. high pressure around productivity and targets) may further activate employees' 'threat and self-protection' system', suppressing compassion-related processes
- An organisational context of group cohesion and support may reduce the dominance of the 'threat and self-protection system', promoting compassion-related processes.

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- Attempting to improve compassion and patient outcome through increased scrutiny and monitoring of staff may be counterproductive.

## **Appendix L. Author guideline notes for chosen journal**

### *Author Guidelines*

The Journal of Occupational and Organizational Psychology publishes empirical and conceptual papers which aim to increase understanding of people and organizations at work. Its domain is broad, covering industrial, organizational, engineering, vocational and personnel psychology, as well as behavioural and cognitive aspects of industrial relations, ergonomics, human factors and industrial sociology. Innovative or interdisciplinary approaches with a psychological emphasis are particularly welcome. So are papers which develop the links between occupational/organizational psychology and other areas of the discipline, such as social and cognitive psychology.

We welcome the following varieties of paper:

- empirical research papers, containing new quantitative or qualitative data which address significant theoretical and/or practical concerns;
- papers which offer new theory and conceptualisation, perhaps accompanied by a critique of existing approaches;
- narrative and/or quantitative reviews of existing research which lead to new conclusions or insights into a field of research and/or practice;
- prescriptive articles advocating changes in research paradigms, methods, or data analytic techniques;
- analyses of practice in occupational and organizational psychology, where such analyses are driven by theory and/or sound data.

All papers published in The Journal of Occupational and Organizational Psychology are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

### **1. Circulation**

The circulation of the Journal is worldwide. Papers are invited and encouraged from authors throughout the world.

### **2. Length**

The word limit for papers submitted for consideration to JOOP is 8000 words and any papers that are over this word limit will be returned to the authors. The word limit does not include abstract, references, figures, and tables. Appendices however are included in the word limit. The Editor retains discretion to publish papers beyond this length in cases where the clear and concise expression of the scientific content requires greater length (e.g., a new theory or a new method). The authors should contact the Editor first in such a case.

In order to supplement innovative research produced in full paper format, the journal provides access to a wider range of investigation through the publication of research in Short Research Note format. Papers submitted as Short Research Notes will be subject to the normal double-blind review process. Short Research Notes should be largely empirical studies. Typically, they will do one of the following:

- replicate existing findings in a new context;
- develop new measures and report on their reliability and validity;
- report contradictory findings that sharpen the interpretation of existing research;
- present new applications of an existing measure;

- report descriptive findings or case studies that will significantly develop professional practice;
- offer an informed and focused challenge to key elements of an existing study, theory or measure.

Papers submitted as Short Research Notes should not exceed 2000 words, including the abstract but not including references or tables. It is normally expected that any tables will take up no more than two printed pages, and there should be no more than about 15 references. With the exception of the items of a new or substantially revised measure, appendices are discouraged.

A paper submitted as a Short Research Note will not necessarily receive positive reviews simply because it falls into one of the categories listed above. Papers need to be located in a conceptual/theoretical context, with rigorous method and appropriate reporting. The issues they raise and/or the findings they report must be deemed to be contributing significantly to the knowledge and understanding of academics and/or practitioners in occupational and organizational psychology. Short Research Notes are not a facility for publishing on the basis of weak data and/or weak conceptual underpinning. In the majority of cases, authors will have submitted the paper in the Short Research Note format. In some instances, however, the Editors may feel that a full paper is best reviewed in a Short Research Note format, or the referees may only recommend publication under this format. All articles in this format will be officially designated and published with the preface 'Short Research Note.' These are placed towards the back of the journal. Acceptance for publication on this basis will be indicated in writing to the authors by the Editor or Associate Editor if the original submission was in full paper format.

### 3. Submission and reviewing

All manuscripts must be submitted via Editorial Manager. The Journal operates a policy of anonymous (double blind) peer review. We also operate a triage process in which submissions that are out of scope or otherwise inappropriate will be rejected by the editors without external peer review to avoid unnecessary delays. Before submitting, please read the [terms and conditions of submission](#) and the [declaration of competing interests](#). You may also like to use the [Submission Checklist](#) to help you prepare your paper.

### 4. Manuscript requirements

- Contributions must be typed in double spacing with wide margins. All sheets must be numbered.
- Manuscripts should be preceded by a title page which includes a full list of authors and their affiliations, as well as the corresponding author's contact details. You may like to use [this](#) template. When entering the author names into Editorial Manager, the corresponding author will be asked to provide a CRediT contributor role to classify the role that each author played in creating the manuscript. Please see the [Project CRediT](#) website for a list of roles.
- All articles should be preceded by an Abstract of between 100 and 200 words, giving a concise statement of the intention, results or conclusions of the article. The abstract should not include any sub-headings.
- All articles must include Practitioner Points – these are 2-4 bullet points, following the abstract, with the heading 'Practitioner Points'. These should briefly and clearly outline the relevance of your research to professional practice. (Please include the 'Practitioner Points' in your main document but do not submit them to Editorial Manager with your abstract.)
- The main document must be anonymous. Please do not mention the authors' names or affiliations (including in the Method section) and always refer to any previous work in the third person.
- Tables should be typed in double spacing, each on a separate page with a self-explanatory title. Tables should be comprehensible without reference to the text. They should be placed at the end of the manuscript but they must be mentioned in the text.
- Figures can be included at the end of the document or attached as separate files, carefully labelled with symbols in a form consistent with text use. Unnecessary background patterns, lines and shading should be avoided. Captions should be listed on a separate sheet. The resolution of digital images must be at least 300 dpi. All figures must be mentioned in the text.

- All articles should contain a clear statement of where and when any data were collected.
- For reference citations, please use APA style. Particular care should be taken to ensure that references are accurate and complete. Give all journal titles in full and provide doi numbers where possible for journal articles. For example:

Author, A., Author, B., & Author, C. (1995). *Title of book*. City, Country: Publisher.

Author, A. (2013). Title of journal article. *Name of journal*, 1, 1-16. doi: 10.1111/bjep.12031

- SI units must be used for all measurements, rounded off to practical values if appropriate, with the imperial equivalent in parentheses.
- In normal circumstances, effect size should be incorporated.
- Authors are requested to avoid the use of sexist language.
- Authors are responsible for acquiring written permission to publish lengthy quotations, illustrations, etc. for which they do not own copyright.

For guidelines on editorial style, please consult the [APA Publication Manual](#) published by the American Psychological Association.

If you need more information about submitting your manuscript for publication, please email Hannah Wakley, Managing Editor ([joop@wiley.com](mailto:joop@wiley.com)) or phone +44 (0) 116 252 9504.

## 5. Cross-sectional self-report data

Studies conducted using only cross-sectional self-report data will be considered only in exceptional circumstances. For example; if the sample is exceptionally large, representative or multiple. In all other cases, cross-sectional self-report data should form part of a wider selection of data, including other measures such as longitudinal or experimental elements, corroborating or comparison data, third party records or psycho-physiological data.

For more details on the use of cross-sectional self-report data please see the [December 2011 Editorial](#).

## 6. Non-working Populations

Papers based entirely on non-working populations (e.g. student samples) will only be considered in rather unusual circumstances. The Editor retains discretion to publish this kind of data, for instance where it is clearly demonstrated that the data obtained can be generalised to working populations.

## 7. Supporting Information

Supporting Information can be a useful way for an author to include important but ancillary information with the online version of an article. Examples of Supporting Information include appendices, additional tables, data sets, figures, movie files, audio clips, and other related nonessential multimedia files. Supporting Information should be cited within the article text, and a descriptive legend should be included. Please indicate clearly on submission which material is for online only publication. It is published as supplied by the author, and a proof is not made available prior to publication; for these reasons, authors should provide any Supporting Information in the desired final format.

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## 11. Colour illustrations

Colour illustrations can be accepted for publication online. These would be reproduced in greyscale in the print version. If authors would like these figures to be reproduced in colour in print at their expense they should request this by completing a [Colour Work Agreement](#) form upon acceptance of the paper.

## 12. Pre-submission English-language editing

Authors for whom English is a second language may choose to have their manuscript professionally edited before submission to improve the English. A list of independent suppliers of editing services can be found in [Author Services](#). All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

### 13. The Later Stages

The corresponding author will receive an email alert containing a link to a web site. The proof can be downloaded as a PDF (portable document format) file from this site. Acrobat Reader will be required in order to read this file. This software can be downloaded (free of charge) from the following [Adobe's web site](#).

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