

THE UNIVERSITY OF HULL

An exploration of self-compassion within healthcare professionals

Being a thesis submitted in partial fulfilment of the requirements for the

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By

Lauren Elizabeth Henshall

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Acknowledgements

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Overview

This portfolio thesis comprises of three parts: a systematic literature review, an empirical report and supporting appendices.

Part one is a systematic literature review in which empirical papers investigating the effectiveness of interventions for cultivating self-compassion in healthcare professionals are reviewed. A systematic database search identified fifteen studies to be reviewed. A narrative synthesis of the findings pertaining to effectiveness is provided alongside a review of the methodological quality of the research in this area. The clinical implications for healthcare services and directions for future research are also discussed.

Part two is an empirical paper combining qualitative and quantitative methodologies to explore compassion amongst healthcare professionals. The quantitative component sought to investigate whether the presence of occupational stressors and threats impacts on healthcare professionals' ability to give compassion to others at work, and whether self-compassion and organisational compassion may moderate this relationship. In addition, thematic analysis was employed to investigate the most prominent troubles that healthcare professionals experience in relation to their work. The findings are discussed in relation to theory and implications for clinical practice and future research.

Part three comprises the appendices supporting the systematic literature review and the empirical paper, but also includes a reflective statement focussing on the research process.

Overall Word Count (excluding appendices): 27,344

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Part one

Systematic Literature Review

Cultivating self-compassion in healthcare professionals: A systematic literature review

Lauren Elizabeth Henshall^{1*}, Philip Molyneux¹ and Tim Alexander¹

¹ Department of Psychological Health and Wellbeing, University of Hull, Hertford Building,
Cottingham Road, Hull, United Kingdom, HU6 7RX

* Corresponding Author. E-mail address: L.Henshall@2012.hull.ac.uk

Telephone number: +44 (0) 1482 464106 Fax: +44 (0) 1482 464093

This paper is written in the format ready for submission to Mindfulness.

Please see Appendix B for the Author Guidelines.

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Abstract

Self-compassion involves being kind and understanding towards oneself during times of difficulty. It also involves being mindful, accepting these experiences without judgement or criticism, whilst remembering that pain and suffering are a part of the shared human experience. Increased self-compassion has previously been linked to well-being, more positive affect, less negative affect, and may be particularly helpful for individuals with high levels of shame and self-criticism. Less attention has so far been paid to the use of self-compassion-increasing interventions for healthcare professionals, who are exposed to high levels of occupational stressors and who in addition may be dealing with self-criticism and feelings of shame. As cultivating self-compassion may therefore be of benefit, this study aimed to systematically review the literature on the effectiveness of interventions upon self-compassion in healthcare professionals. A total of 15 studies were included for review and findings related to methodological quality and the effectiveness of interventions were synthesised narratively. None of the reviewed interventions specifically targeted self-compassion alone, instead all shared mindfulness as a key component and target for intervention. The results of this review suggest that mindfulness-based interventions can be effective for increasing self-compassion in healthcare professionals. Education-based protocols such as those based on Mindfulness-based Stress Reduction were the most widely studied and presented the most consistent improvements in self-compassion. However, further research is needed to establish the role of mindfulness in improving self-compassion, and to better assess the effectiveness of such interventions, or indeed to investigate interventions more directly targeting compassion.

Keywords

Self-compassion - healthcare professionals - systematic review – effectiveness – intervention – mindfulness

Introduction

Compassion can be described as a non-judgemental sensitivity to the suffering of self and others, with a commitment to prevent and alleviate that suffering (Dalai Lama, 1995). Whilst the concept of compassion is historically rooted in Buddhist teachings, it has been of growing interest within Western psychology in recent years. In line with this increasing interest, there is a growing body of research focussed upon Western psychological conceptualisations of compassion and self-compassion, which can be largely attributed to Paul Gilbert (2009) and Kristen Neff (2003a, 2003b) respectively.

The concept of self-compassion has been described by Neff (2003b) as involving sensitivity to one's own suffering and a commitment to respond to that suffering with kindness, understanding and a desire to help oneself. Neff (2003b) posits that self-compassion involves three related elements, each of which involves the presence of one component and the negation of another. The first element - self-kindness - involves being warm and understanding towards ourselves during times of suffering, as opposed to ignoring or avoiding our pain, or being judgemental or critical towards ourselves. The second element - common humanity – involves a recognition of the shared human experience (that all humans suffer, are vulnerable, and are imperfect) as opposed to feeling isolated in suffering or in making mistakes. The third element – mindfulness - here refers to the ability to take a non-judgemental and balanced approach to our pain and negative emotions so that they are neither suppressed nor exaggerated.

Self-compassion has been found to be associated with a range of psychological benefits. For example, in a sample of over two-thousand students, Neff and Vonk (2009) found that self-compassion was positively correlated with happiness, optimism and positive affect, whilst being negatively correlated with self-worth instability, social comparison, public self-consciousness, self-rumination and anger. Experimental paradigms have also been used to test the effect of self-compassion. Firstly, Neff, Kirkpatrick and Rude (2007) recruited 91 undergraduate students to

take part in a mock job interview to induce anxiety. The authors found that greater self-compassion was associated with significantly less anxiety following the mock job interview, even after controlling for initial levels of negative affect. Leary, Tate, Adams, Allen and Hancock (2007) further investigated the role of self-compassion in the emotional and cognitive experience of negative life events using a series of five experiments. The authors found that participants who had greater levels of self-compassion were more likely to treat themselves kindly after negative life events, were less likely to under-value and be critical of their abilities, and were more able to accept responsibility for feedback, rather than externalising blame. Similarly to Neff and Vonk's (2009) findings, these experiments also revealed that self-compassion was associated with less negative affect and more positive affect. Specifically, Leary et al. (2007) found greater self-compassion related to less catastrophizing and personalising, less negative affect, and a decreased likelihood of feeling overwhelmed by negative emotion, as well as a greater sense of equanimity and humour.

Given the psychological benefits of self-compassion, and its potential impact on well-being, it is perhaps unsurprising that increasing one's self-compassion has more recently been a focus for intervention in clinical populations (for a review please see Barnard & Curry, 2011). Paul Gilbert (2009) developed Compassionate Mind training and Compassion Focussed Therapy (CFT) which aim to increase one's ability to respond to one's own pain in a self-compassionate way, whilst also being able to receive compassion from others, and to show compassion to others. The theory underpinning Compassionate Mind training and CFT combines evolutionary, neurobiological, social psychological and Buddhist perspectives. This approach was initially developed for people with high levels of shame and self-criticism, and initial findings on its effectiveness are promising (Leaviss & Uttley, 2015). Gilbert (2009) identified six key attributes that he considered necessary for compassion: 'motivation' to care for well-being, 'empathy' and 'sympathy', 'distress tolerance' rather than controlling or avoiding emotions, 'sensitivity' to distress, and a 'non-judgemental' stance. Compassionate Mind training and CFT acknowledge

the importance of reducing self-directed hostility in individuals who are high in shame or self-criticism, but also aim to increase feelings of self-reassurance, courage, warmth and self-soothing. To do this, Gilbert (2009) identified key skills with which individuals can build on the six attributes. These compassionate skills include: imagery to bring about feelings and sensations of warmth and kindness; learning to direct attention in a compassionate and mindful way; thinking and reasoning in a helpful and honest way, without rumination; and behaving compassionately to the self and to others. Supporting the development of these skills and attributes is the use of psycho-education around the evolution of the brain, and in particular the evolution of three emotion regulation systems. These three systems include the 'threat and self-protection' system which reacts quickly to threat by giving bursts of feelings such as anger, anxiety or disgust; the 'incentive and resource-seeking system' which drives us to seek out resources in order to survive, giving feelings of excitement and pleasure; and the 'soothing and contentment system' which brings about an inner peacefulness when we are neither threatened nor striving to achieve, and is affiliative-focussed, giving us feelings associated with connectedness to others. Gilbert (2009) posits that a balance of all three systems is required for health and well-being, but that often self-criticism and shame relates to an under-developed soothing and contentment system.

Although healthcare professionals may be increasingly considering the use of self-compassion as a means of helping service-users, less attention has been paid to the use of occupational interventions that seek to cultivate self-compassion in healthcare professionals themselves. The many occupational stresses and troubles faced by healthcare professionals have been documented to include: excessive workload; time pressures; inadequate staffing levels; interpersonal conflicts and bullying from colleagues or managers; and working with service-users experiencing extreme distress, amongst others (National Institute for Occupational Safety and Health, 2008). In line with this, Wall et al. (1997) found that 27% of health service staff exceeded the threshold for 'minor psychiatric disorders' such as anxiety and depression on the General Health Questionnaire (Goldberg & Hillier, 1979), compared to just 18% for the British workforce

more generally. Similarly, research focussing solely on physicians found this population in particular to have high rates of depression, anxiety, drug and alcohol addiction, misuse of prescription drugs and emotional exhaustion or burnout (Brooks, Geralda & Chalder, 2011; Firth-Cozens, 2001). Interestingly, Firth-Cozens (1997) found that General Practitioners' levels of self-criticism during training were positively correlated with their levels of stress 10 years later. This suggests that it is not just the occupational stressors which impact on healthcare professionals' well-being, but also their way of relating to themselves and their experiences. In addition to this relationship with stress, self-critical and perfectionistic traits in physicians has also been highlighted as a barrier to help-seeking. For example, Brooks et al. (2011) explained how self-criticism may lead to feelings of shame and embarrassment around help-seeking, with physicians feeling pressure to appear healthy and feeling that they may be letting themselves, service-users and colleagues down by seeking help. These feelings of shame and self-criticism have also been highlighted following adverse incidents and medical mistakes (Scott et al., 2009). Scott et al. (2009) documented how healthcare professionals often chastise themselves for not thinking clearly during such crises, and later report feelings of inadequacy, periods of self-isolation and self-doubt, lack of confidence, and predictions that others will think negatively of them or lose trust in them. Shame and self-criticism reported in healthcare professionals therefore may impact upon their well-being and their ability to successfully apply themselves to their occupation, though may also reduce the likelihood that they will seek help for physical and psychological difficulties. Given the additional occupational stressors such as high workload, it is important to consider the use of self-compassion as a point of intervention. By increasing self-compassion, healthcare professionals may be better able to respond to themselves kindly, rather than critically, thus reducing their levels of negative affect. This may also have secondary impact in that the individual is better able to cope with the more external stressors that are less controllable. Furthermore, greater self-compassion in healthcare professionals has also been related to greater compassion for others at work, thus suggesting this may have a positive impact on their ability to give care

and compassion to service-users and colleagues (Henshall, Alexander, Molyneux & McLellan, *in preparation*).

Previous literature reviews have evaluated the literature around stress-management interventions for healthcare professionals, though without specific focus on the cultivation of self-compassion (e.g. Edwards & Barnard, 2003; Shapiro, Shapiro & Schwartz, 2000). Additionally, literature reviews focussing on interventions which increase self-compassion have included data from a range of populations, as opposed to concentrating solely on healthcare professionals (Barnard & Curry, 2011) or have not been systematic in their approach (Raab, 2014). One systematic literature review has evaluated the effectiveness of interventions upon the self-compassion of healthcare professionals, however the scope of that review was limited to mindfulness-based interventions and loving-kindness meditation only (Boellinghaus, Jones & Hutton, 2014). Consequently, the review conducted by Boellinghaus et al. (2014) may not be fully inclusive of the interventions used to cultivate self-compassion in healthcare professionals, and may also be missing studies published since their search in 2011. To the authors' knowledge, no previous systematic review of the literature has inclusively examined the effectiveness of interventions for healthcare professionals with specific focus on the cultivation of self-compassion.

Research Question

How effective are interventions for increasing self-compassion in healthcare professionals?

Methods

Search Protocol

Four online databases were selected and searched up to and including February 2015, these were Web of Science and three databases accessed via the EBSCOhost service, CINAHL, MEDLINE, and PsycINFO. Additionally, the lists of publications were manually searched on two relevant websites: 'www.compassionatemind.co.uk' and 'self-compassion.org'. Finally, retrieved articles were searched manually for additional references. Search terms were generated by listing alternatives for 'healthcare professionals', 'intervention', and 'self-compassion'. The thesaurus service on EBSCOhost was used to capture alternative words, and Boolean operators were used to broaden the search. Terms related to 'healthcare professionals' and 'intervention' were applied to the 'abstract' or 'topic', whilst terms related to 'self-compassion' were applied to 'full text' or 'topic' as specific outcome variables are not always reported in the abstract.

The following terms were used for the online database search:

"healthcare professional*" OR doctor* OR nurs* OR worker* OR clinician* OR "medical students"
OR trainee* OR personnel OR staff

AND

intervention* OR training OR induc* OR cultivat* OR evaluat* OR reduc*

AND

"self-compassion" OR ((self) N2 (compassion))

Inclusion and Exclusion Criteria

Inclusion:

- Participants are healthcare professionals or in training for a healthcare-based career
- The study evaluates an intervention
- A quantitative measure of 'self-compassion' is applied pre- and post-intervention

Exclusion:

- Not reported in the English language
- Self-compassion as an outcome is reported qualitatively only
- None of the participants are healthcare professionals, either qualified or in training
- The study does not evaluate an intervention
- Review or discussion papers

Abstracts were initially read, and all articles failing to meet one or more of the exclusion criteria on this basis were retrieved in full. Once retrieved, articles were then read in full and re-evaluated using the exclusion criteria. A further two articles were then excluded on the basis that insufficient analysis was carried out and reported for outcomes relating to self-compassion, meaning that they could not provide data relevant for the current review. A final sample of 15 studies remained after the application of inclusion and exclusion criteria. Figure 1 summarises the article selection process.

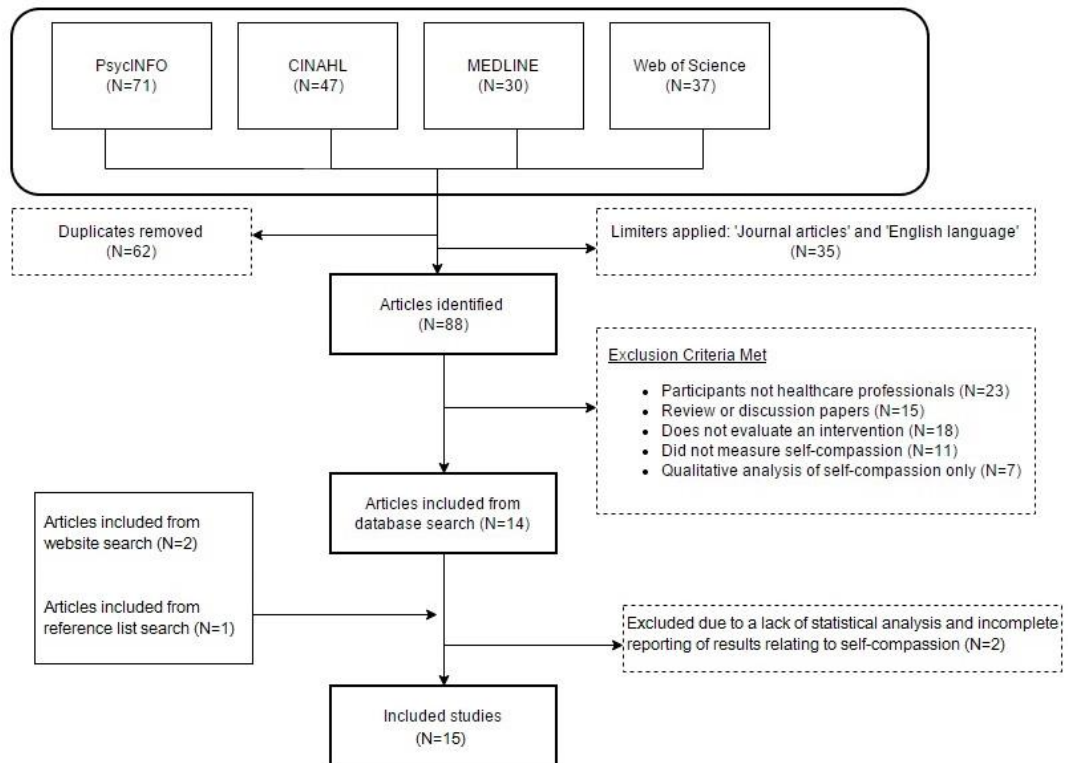


Fig. 1 Summary of article selection process

Data Extraction

Data was extracted on the basis of a data extraction form designed specifically for the current review (see Appendix C), which included the following broad focus points:

- Research aims and design
- Characteristics of participants (e.g. sample size, gender ratio, professions)
- Nature of intervention
- Findings/results relating to self-compassion and how this was measured

Quality assessment

The checklist for measuring study quality, developed by Downs and Black (1998) was modified for use in the current review. Downs and Black (1998) found the checklist to have good reliability for both randomised and non-randomised trials of healthcare interventions. Though it is important to note that the adaptations made to the checklist for use in the current review may have altered its level of reliability.

Six items were removed from the checklist as they were not considered relevant to the research questions of the current review (items 8, 9, 13, 14, 15 and 24). Question 8 “Have all important adverse events that may be a consequence of the intervention been reported?” was removed as such events are unlikely to occur within the interventions reviewed. Question 9 “Have the characteristics of patients lost to follow-up been described?” was omitted as although this information is an important consideration in terms of feasibility, it does not contribute to effectiveness as assessed in the current review. Question 13 “Were the staff, places, and facilities where the patients were treated, representative of the treatment the majority of patients receive?” as there are no clear guidelines or standards for staff interventions. Questions 14, 15 and 24 related to concealment and blinding procedures, and were omitted due to the use of self-report measures and difficulties blinding healthcare professionals who are likely to have an awareness of the interventions reviewed.

Additionally, items 2,6,7,16,18 and 22 were adapted to better reflect the focus of the review on self-compassion. For example “Is the main outcome to measure ‘self-compassion’ clearly described in the Introduction or Methods section?” rather than focussing on the ‘main outcomes’ more generally.

Finally, in items 3, 19 and 23 the word “patients” was replaced with “participants” to better reflect the focus of the current review on healthcare professionals.

The final checklist used to assess the quality of studies reviewed therefore contained 21 items (see Appendix D) with a minimum possible score of 0 and a maximum possible score of 26, where higher scores imply greater quality. Five (33%) of the studies were also quality assessed by a second rater in order to assess inter-rater reliability and to minimise the impact of bias on reporting. There was 75.24% agreement between the two raters. Where discrepancies existed between ratings, the two raters had a discussion to reach a consensus score. The final quality ratings for individual items can be found in Appendix E, and total scores are summarised in Table 1. It is important to note that the quality assessment was used as a framework within which to assess quality, and that studies were not compared on scores alone. Consequently, quality scores obtained did not determine a study's inclusion in the review, but findings from the quality assessment are referred to throughout the narrative synthesis.

Data synthesis

Due to the heterogeneity of the studies reviewed a meta-analysis was not considered appropriate. Instead, a narrative synthesis methodology was employed whereby data was summarised and explained through text, rather than statistics. As the review primarily relates to the assessment of the effectiveness of interventions an integrative approach to data analysis and synthesis was adopted, involving the aggregating, combining and summarising of findings (Dixon-Woods, Agarwal, Jones, Young & Sutton, 2005).

Table 1. Summary of study characteristics and key findings

Study (Authors; Year; Country)	Aim(s) of study	Characteristics of Participants (Profession(s); sample size)	Control/ comparison group	Intervention	Measurement of self-compassion (how / when measured?)	Key findings relating to self- compassion	Quality score (/26)
Bazarko et al. (2013; USA)	To examine the effect of an innovative telephone-based MBSR intervention on the overall health and well-being of Nurses	Nurses working for a large healthcare company (100% female; Mean age 52.2 years) N= 41	None	8-week course of MBSR delivered via telephone. Weeks 1 and 8: full-day 'retreat' face-to-face. Weeks 2-7: 1.5 hour weekly teleconference group calls, email contact with instructor, and home practice. Mean total time participating: 50.3 hours.	SCS (Neff, 2003a) 2 weeks prior to the intervention (T1); immediately following intervention (T2) and at 4-month follow-up (T3)	Significant increase in overall SCS score and significant improvements on all subscales between pre- and post-intervention (p<0.001). Significant increase in overall SCS score (p<0.01), self-kindness subscale (p<0.05) and common humanity subscale (p<0.01) between post-intervention and follow-up. Participants who maintained MBSR practice post-intervention had significantly greater overall SCS scores	18

						than those who did not ($p < 0.001$).	
Bond et al. (2013; USA)	To evaluate the short term effects of an 'Embodied Health' training program for medical students	First and second-year medical students N= 27	None	11-week elective module. Weekly 1.5 hour classes involving 1 hour of breathing, meditation or yoga followed by 30 minute related Neuroscience lecture. Daily homework practice (e.g. breathing/meditation) and related reading	SCS (Neff, 2003a) 1 week prior to the start of the module (T1) and within 1 week after the module ended (T2)	Overall SCS score significantly increased between pre- and post- intervention (mean change score = 0.28; $p = 0.04$; Cohen's $d = -0.55$).	16
Brooker et al. (2013; Australia)	To evaluate the impact of a mindfulness-based training program on stress, psychological wellbeing and job satisfaction within the disability sector.	Support workers and managers working within community residential services (59% female; mean age 42.9 years) N= 34	None	8-week 'Occupational Mindfulness' course, based on combination of MBSR and MBCT. Weekly 2 hour sessions; engaging in core mindfulness practices. 40 minutes home-practice for 6 days each week.	SCS (Neff, 2003a) Prior to commencement of intervention (T1) and immediately following completion (T2)	No significant change in overall SCS score or subscale scores ($p > 0.05$).	18

Erogul et al. (2014; USA)	To examine the impact of an abridged MBSR intervention on the well-being of medical students, and to assess whether the benefits could be sustained.	1 st year medical students (42.9% female; mean age 23.6 years) N= 28	Randomised control- no intervention received. (48.3% female; mean age 23.3 years) N= 29	8-weeks MBSR intervention. Weekly 75 minute group-sessions; engaging in mindfulness and meditation practices; full-day 'retreat' in Week 7. 20-minute daily home practice (mean time spent self-meditating = 40.7 minutes per week)	SCS (Neff, 2003a) Prior to intervention (T1); At end of intervention (T2); and at 6-month follow-up (T3)	Significant difference between groups, with the intervention group having significantly greater increases in overall SCS score at post-intervention ($p < 0.05$; Cohen's $d = 0.89$) and at follow-up ($p < 0.001$; Cohen's $d = 0.97$).	24
Gauthier et al. (2015; USA)	To assess the feasibility of a 5-minute mindfulness meditation for nurses and to test its effect on wellbeing and burnout over a 3 month period.	Nurses working on a Paediatric Intensive Care Unit (93.3% female; majority aged between 26-39 years (75.5%)) N= 45	None	5-minute daily mindfulness meditations across 30 days. Guided by an ordained Zen Buddhist priest daily, in the minutes before shifts started. 42% of participants attended an average of 2 sessions per week.	SCS (Neff, 2003a) Pre-intervention (T1); Immediately following intervention (T2); and 1-month follow-up (T3)	No significant change in overall SCS scores ($p = 0.26$).	18

Gockel et al. (2013; USA)	To examine the effect of a brief mindfulness-based intervention on the learning and development of Social Work students.	1 st year Clinical Social Work, graduate-level students (84.1% female; mean age 30.02 years). Taking part in Clinical Interviewing classes. N= 38	Non-randomised control. 1 st year Social work students also taking part in Clinical Interviewing classes. N= 94	28 Clinical Interviewing Classes, each containing 15 minutes of MBSR-based Mindfulness Training (total of 7 hours across 10-weeks). Also introduced LKM. Control group took part in classes without the integration of mindfulness.	SCS-SF (Raes et al. 2011) Before training (T1); immediately following training (T2); and 3-month follow-up (T3).	No significant between-groups difference in overall SCS-SF scores over time (p>0.05).	18
Marx et al. (2014; UK)	To assess the feasibility of an adapted MBCT intervention for healthcare staff, and to investigate its effectiveness in relation to perceived stress and self-compassion.	NHS staff from range of Mental Health disciplines, including nurses, ward managers and therapists (81% female; mean age 42 years). N= 42	None	8-week MBCT intervention (following the protocol outlined by Segal et al. (2002)). Weekly 2-hour group sessions, plus home practice (duration not reported).	SCS (Neff, 2003a) Prior to intervention (T1); immediately following intervention (T2); and 3-month follow-up (T3)	Significant increase in overall SCS score from pre- to post-intervention (p<0.001, Cohen's d= 0.67) and from pre-intervention to follow-up (p<0.001, Cohen's d=0.81).	17

Moore (2008; UK)	To examine the impact of a brief course of mindfulness exercises for Trainee Clinical Psychologists	1 st year Trainee Clinical Psychologists (90% female; age unspecified) N=10	None	Mindfulness Skills Course involving 14 sessions held across a 1-month period. 10-minute mindfulness scripts were developed for group volunteers to read, guiding each exercise, each incorporating silent practice typically lasting 7 minutes.	SCS (Neff, 2003a) Prior to starting the Mindfulness Skills Course (T1); and in final session (T2).	Significant increase in SCS Self-Kindness subscale score between pre- and post-intervention ($p = .02$). No other significant differences in SCS scores over time ($p > 0.05$).	17
Newsome et al. (2012; USA)	To assess the impact of a MBSR group in students from the helping professions, employing baseline and follow-up measures to address previous gaps in the literature.	Healthcare students (e.g. counselling, psychology, nursing and sociology; 87% female; mean age 29.26 years) N=31	None	8-week MBSR intervention. Weekly 90-minute group sessions; home practice for a minimum of 45 minutes, 4 times a week. Participants also received weekly reminders about home practice, and regular reading on the topics of stress and burnout.	SCS (Neff, 2003a) 4-weeks prior to intervention (T1); first meeting (T2); end of week 7 (T3); and 1-month follow-up (T4)	Significant increase in SCS score over time ($p < .0001$). Significant increase in overall SCS score between T2 and T3 ($p < 0.0001$); but no significant change between T1 and T2 ($p = 1.00$) or between T3 and T4 ($p < .111$) suggesting no natural change prior to intervention, and benefits of intervention maintained at follow-up.	17

Pakenham (2014; Australia)	To investigate the effects of ACT training on stress, therapist skills and attributes, and the personal acquisition of ACT strategies in a Clinical Psychology Training programme.	1 st year Trainee Clinical Psychologists (88% female; mean age 27.6 years). N= 32	None	12-week ACT training course. Weekly 2-hour training workshops focussing on: acceptance, defusion, mindfulness, self-as-context, values committed action, case conceptualisation, ACT therapeutic stance and bringing it all together, self-care, ACT for depression and ACT for anxiety. Participants were encouraged to practice and apply the principles to their own life.	SCS (Neff, 2003a) 1 week prior to the course (T1); and 4-weeks after the end of the course (T2).	Significant increase in SCS Self-Kindness subscale score between pre- and post-intervention ($p<0.05$). No other significant change in SCS scores over time ($p>0.05$).	19
Rimes et al. (2011; UK)	To investigate the impact of MBCT (modified for stress, not depression) on Trainee Clinical Psychologists and to assess whether this varies according	Trainee Clinical Psychologists across three years of training (100% female; mean age unspecified) N= 20	None	8-week MBCT intervention based on Segal et al. (2002) though aspects specific to Depression were altered to focus on Stress. Weekly 2-hour group sessions; and home practice (mean weekly total home practice was 91.9 minutes).	SCS (Neff, 2003a) Session 1 (T1); and session 8 (T2).	Significant increase in overall SCS score between pre- and post-intervention ($p=0.016$). 1 st year students showed a significantly larger increase in overall SCS score than 2 nd /3 rd year students ($p=0.025$). No significant difference between	16

	to stage of training.					groups in amount of home practice (p=0.79).	
Shapiro et al. (2005; USA)	To explore the value of MBSR in healthcare staff actively working clinically, and to also explore positive benefits of the intervention in life satisfaction and self-compassion.	Healthcare professionals from one US hospital (e.g. physicians, nurses, social workers and psychologists; gender unspecified; age range 18-65). N= 18	Randomised control group – recruited from same population, on waitlist for intervention. N= 20	8-week MBSR intervention. Weekly 2-hour group sessions involving mindfulness exercises and LKM to help participants develop greater compassion for themselves, their co-workers, and their patients. Daily home mindfulness practice (amount unspecified).	SCS (Neff, 2003a) Pre-intervention (T1) and post-intervention (T2)	Significant between-group differences, with the intervention group showing significantly larger increase in overall SCS score (p=.004).	21
Shapiro et al. (2007; USA)	To test the efficacy of MBSR for enhancing the mental health of therapists in training; examining this process and the effect of	Master's level Counselling Psychology students, enrolled in a 'Stress and Management' course (88.9%	Non-randomised. Master's level Counselling Psychology students, enrolled in 'Psychologic al Theory' or	8-week MBSR intervention within 10-week Stress and Stress Management course. Also introduced LKM. Weekly 2-hour group sessions; and home practice (mean of 55.92 minutes per week home practice).	SCS (Neff, 2003a) First week of the course (T1); and final week of the course (T2)	The Intervention group had significantly larger increases in overall SCS score than the control group, between pre- and post-intervention (p=.0001). No significant effect of amount of time spent on home practice, or amount of time	23

	type/amount of mindfulness practice on well-being.	female; mean age 29.2 years) N= 22	'Research Methods' courses. N= 32	Control group also attended 10 weekly sessions but with no experiential stress management component.		spent on each type of mindfulness practice ($p>0.05$). An increase in mindful attention and awareness (MAAS; Brown & Ryan, 2003) from pre- to post-intervention predicted an increase in self-compassion ($p<.01$)	
Stafford-Brown et al. (2012; Australia)	To evaluate the effectiveness of a group ACT-informed stress management intervention for Clinical Psychology Trainees.	Clinical Psychology Trainees from 4 Australian universities (89.3% female; mean age 28.79 years). N= 28	Non-randomised. Clinical Psychology Trainees (85.7% female; mean age 28.11 years). N= 28	4-week ACT stress-management group. Weekly 3-hour group sessions involving didactic teaching, group discussions, and a variety of experiential exercises. Between-session practice assignments involved mindfulness exercises, LKM, focusing on values, and education on stress and ACT.	SCS (Neff, 2003a) Pre-intervention (Week 1; T1); Post intervention (week 4; T2); and 10-week follow-up (T3)	Overall SCS score significantly increased between pre-and post-intervention for both groups ($p < .001$) however there were no significant differences between groups for overall SCS score ($p>0.05$). The intervention group showed significantly greater improvements on the SCS Over-identification subscale than the control group did ($p<0.05$) and this was maintained at follow-up. No other subscales showed a	23

						significant effect of group (p>0.05).	
Wasner et al. (2005; Germany)	To investigate whether a spiritual care program could bring about positive benefits for health care professionals in palliative care, and whether these benefits can be sustained over a 6-month period.	Professionals or volunteers working in medical or social support for palliative care patients (51% nurses; 91% female; age range 26-70). N= 63	None	3.5 days of Spiritual Care Training: 'Wisdom and Compassion in Care for the Dying'. The participants learn techniques of active and compassionate listening and how to recognize and address the causes of emotional and spiritual suffering. Practical exercises such as contemplation and meditation are introduced, which can help the participants apply and experience the benefits of spiritual care for themselves.	Numeric rating scale: 'compassion with oneself' – rated from 0 (not at all) to 10 (very much). Before training (T1); at the end of training (T2); and at 6-month follow-up (T3).	Significant increase in 'Compassion with oneself' score between pre-training and post-training (p<0.01), and between pre-training and follow-up (P<0.01).	16

MBSR – Mindfulness-based Stress Reduction; SCS – Self-Compassion Scale; SCS-SF – Self-Compassion Scale- Short Form; MBCT – Mindfulness-based Cognitive Therapy; LKM – Loving Kindness Meditation; ACT – Acceptance and Commitment Therapy

Results

Data extracted from each of the 15 reviewed studies is summarised in Table 1.

Overview of included studies

Characteristics of participants

More than half of the 15 reviewed studies were conducted in the USA (N=8), three studies recruited from the UK, and three from Australia, with one study being conducted in Germany.

Participants were recruited from a range of healthcare professions and disciplines, including nursing, social work, support workers, managers, psychology, therapists and medical students/physicians. In nine of the included studies the participants were students training for careers within healthcare, whilst the remaining six studies recruited from qualified populations of healthcare professionals. Five studies recruited from multiple professions, however the majority of studies (N=10) focussed on a single profession/discipline and, of those, half (N=5) recruited Trainee Clinical Psychologists or Trainee Counselling Psychologists.

Whilst two studies did not disclose the gender ratio of participants, the majority of participants were female. The percentage of female participants ranged from 100% of participants (Bazarko, Cate, Azocar & Kreitzer, 2013; Rimes & Wingrove, 2011) to 42.9% of participants (Erogul et al., 2014), with a median of 88.9% of participants being female (Shapiro, Brown & Biegel, 2007).

Design

The number of participants recruited to the intervention groups of the reviewed studies ranged from 10 (Moore, 2008) to 63 (Wasner, Longaker, Fegg & Borasio, 2005) participants, with the mean sample size being 31.93 (standard deviation 12.91).

A third of the studies (N=5) recruited control groups. Of these, two randomly assigned the participants to group (Erogul et al., 2014; Shapiro, Astin, Bishop & Cordova, 2005) meaning that the intervention group and the control group were recruited from the same population. In both of these randomised-control studies the control group received no intervention during the study period. Three studies employed a non-randomised control design, though again participants in the control group were recruited from the same population as participants in the intervention group. In two of the non-randomised control studies the control group engaged in courses matching the duration and frequency of the intervention group, though without the mindfulness component (Gockel, Burton, James & Bryer, 2013) or the stress-management component (Shapiro et al., 2007) respectively. In the third non-randomised control study (Stafford-Brown & Pakenham, 2012) the control group received no intervention.

All included studies measured self-compassion at both pre-intervention and post-intervention. Just over half (N=8) of the studies also collected follow-up data. Follow-up intervals ranged from between one-month (Gauthier, Meyer, Grefe & Gold, 2015; Newsome, Waldo & Gruszka, 2012) to six-months (Erogul et al., 2014; Wasner et al., 2005) with the median follow-up interval being three-months. In addition, one study also collected baseline data four-weeks prior to the start of the intervention (and thus prior to collecting pre-intervention data) in order to capture any natural change in self-compassion over time (Newsome et al., 2012).

Measurement of self-compassion

Thirteen of the included studies chose to measure self-compassion using the Self-Compassion Scale (SCS; Neff, 2003a). The SCS is based on Neff's (2003b) conceptualisation of self-compassion, involving: self-kindness versus self-judgement; common humanity versus isolation; and mindfulness versus over-identification. The scale contains 26 items, for example "I'm tolerant of my own flaws and inadequacies" or "When times are really difficult, I tend to be tough on

myself". Each item is rated on a five-point likert scale ranging from '1 (almost never)' to '5 (almost always)', asking participants to rate how often they 'behave in a stated manner'. The SCS can be used to calculate one overall self-compassion score, but can also be used to evaluate an individual's score on each of the six subscales, three of which are considered positive (self-kindness, common humanity and mindfulness) and three of which are considered negative (self-judgement, isolation and over-identification). The SCS is found to have good test-retest reliability for an overall SCS score, as well as subscale scores (Neff, 2003a). However, only five of the 13 studies that used the SCS chose to analyse individual subscale scores (Bazarko et al., 2013; Brooker et al., 2013; Moore, 2008; Pakenham, 2014; and Stafford-Brown & Pakenham, 2012).

An abbreviated version of the SCS containing 12 items is also available (Self-compassion Scale – Short Form, SCS-SF; Raes, Pommier, Neff & Van Gucht, 2011), but was used in only one of the 15 included studies (Gockel et al., 2013). The SCS-SF was found to be highly correlated with the SCS ($r > 0.97$) and was also found to have high internal consistency ($\alpha = 0.86$) when calculating a total self-compassion score (Raes et al., 2011). However, the individual subscales of the SCS-SF were found to have relatively low internal consistency (α ranged from 0.54 to 0.75; Raes et al., 2011) and indeed, Gockel et al. (2013) used only the overall score for their study.

One study chose to use a less standardized method for measuring self-compassion, in the form of a numeric rating scale (Wasner et al., 2005). Wasner and colleagues (2005) used a combination of standardised scales and numeric rating scales in order to measure a number of variables. Self-compassion specifically was measured by asking participants to rate their level of 'compassion with oneself' from '0 (not at all)' to '10 (very much)' (Wasner et al., 2005). However, the authors do not elaborate or give a definition of 'compassion with oneself', and also do not report whether participants were informed of a definition. This lack of clarity around 'compassion with oneself' means that results relating to self-compassion in this particular study must be interpreted with caution; individual participants within this study may be defining and considering

'compassion' in a different way, and indeed participants in this study may be defining self-compassion differently to those completing standardized measures such as the SCS (Neff, 2003a) and the SCS-SF (Raes et al., 2011).

A further difficulty that each of these three methods of measuring self-compassion have in common is the reliance on self-report data. Whilst self-report may be the most appropriate and accessible way of measuring a personal construct such as self-compassion, it is important to consider that responses may be open to bias. For example, in many of the included studies the participants knowingly signed up to an intervention aimed at increasing well-being and reducing stress, which may have impacted (knowingly or not) on their responses. This is perhaps emphasised within the target population, as healthcare professionals may have prior knowledge of mindfulness-based interventions or of self-compassion, further adding to the risk of response bias.

Of the 13 studies utilising the SCS (Neff, 2003a), three reported the average total score, calculated by summing the means of the six subscales, after reverse scoring the three negative subscales (Rimes & Wingrove, 2011; Shapiro et al., 2005; Shapiro et al., 2007). Baseline total scores ranged from 16.48 (Shapiro et al., 2005; intervention group) to 19.51 (Shapiro et al., 2005; control group). The median score of 19 (Rimes & Wingrove, 2011) is similar to that obtained within a sample of 232 Educational Psychology undergraduate students, for which the mean total self-compassion score was 18.26 (Neff, 2003a). However, this score of 19 is relatively low in comparison to a sample of Buddhist practitioners who regularly practiced meditation and gained an average total self-compassion score of 23.19 (Neff, 2003a). Additionally, six studies using the SCS (Neff, 2003a) reported the average overall mean score, calculated by finding the mean of the six subscale mean scores (Bond et al., 2013; Erogul et al., 2014; Gauthier et al., 2015; Newsome et al., 2012; Pakenham, 2014; Stafford-Brown & Pakenham, 2012). Baseline overall means ranged from 2.77 (Newsome et al., 2012) to 3.27 (Pakenham, 2014) giving a median of 2.96 (Stafford-Brown & Pakenham, 2012). Again, the median value found within this review was

similar to that of a sample of undergraduates (mean score of 3.01) and a sample of people from the general public (mean score of 2.95), though relatively low in comparison to a sample of Buddhist meditators (mean score of 3.58; Neff & Pommier, 2013). This suggests that healthcare professionals, as a population, exhibit similar levels of self-compassion to others in the general population, which is relatively low in comparison to populations of Buddhist meditators, suggesting that there is scope for increasing the self-compassion of healthcare professionals through intervention.

Effectiveness of interventions

Nature of interventions

All of the interventions employed across the 15 included studies involved the use of mindfulness as a key component. Mindfulness is a metacognitive skill and can be described as being alert to the here-and-now and being aware of one's thoughts, feelings and behaviours as they arise, whilst relating to one's experience within an orientation of curiosity, openness, and acceptance (Bishop et al., 2004). It is thought that cultivating one's capacity to evoke and apply mindfulness can help one to become more aware of when one is focussed on worries or ruminations that may otherwise lead to distress or engagement in maladaptive behaviour (Bishop et al., 2004). In this way, it is believed that developing mindfulness as an overarching way of relating to one's experience can promote emotional well-being and good mental health (Bishop et al., 2004).

Mindfulness is also identified as one of three components of self-compassion (Neff, 2003b), however it is important to note that there are also some key distinctions between the two constructs. Firstly, whilst self-compassion specifically involves the acknowledgement and awareness of painful experiences (Neff, 2003b), mindfulness more generally involves acceptance and awareness of all experience, be it painful or not (Bishop et al., 2004). For example, one can be mindful of positive and neutral experiences too. Though in terms of mindfulness-based

interventions, one might expect that learning to apply mindfulness more generally would similarly increase one's ability to be mindful during times of pain and suffering. However, the two constructs also differ in that self-compassion not only involves mindfulness, but also places importance on self-kindness and common humanity (Neff, 2003b). In this sense, learning to be mindful may not necessarily equate to learning to be self-compassionate. For example, if one were mindful of a positive experience, one perhaps need not be actively remembering that this experience is part of the shared human experience, or be actively showing kindness to oneself. Likewise, one may be experiencing pain and suffering in an attentive and mindful way, but this does not necessarily mean one will be compassionate to oneself. In this sense, interventions cultivating mindfulness only may not specifically or directly target self-compassion, although may bring about indirect improvements in self-compassion, for example by increasing the mindfulness component. Indeed, none of the 15 included studies focussed solely on self-compassion and only three of the studies specifically outlined self-compassion as a target for change within the aims of the study (Shapiro et al., 2005; Bond et al., 2013; Marx, Strauss, Williamson, Karunavira & Taravajra, 2014). However, four studies did include 'loving kindness meditation' (or LKM) alongside mindfulness exercises, which more specifically targets compassion (Gockel et al., 2013; Shapiro et al., 2005; Shapiro et al., 2007; Stafford-Brown & Pakenham, 2012). LKM is a guided meditative practice designed to cultivate compassion for the self and others, wishing and willing for happiness and well-being (The Buddhist Centre, 2015). Though more often the aims and research questions implied that the studies were targeting overall well-being and reducing perceived stress or burnout. In line with this, all of the included studies set out to measure other constructs and variables in addition to self-compassion, such as perceived stress, burnout, empathy, physical health, depression, anxiety and satisfaction with life. Nine studies also utilised quantitative measures of mindfulness, such as the Mindful Attention Awareness Scale (MAAS; Brown and Ryan 2003) which was used in four studies (Gauthier et al., 2015; Gockel et al., 2013; Newsome et al., 2012; Shapiro et al., 2007).

Despite sharing mindfulness as a key component, the interventions evaluated across the 15 studies were largely heterogeneous, and varied in terms of duration and mode of delivery. The majority (N=9) of studies utilised protocol-driven, education-based interventions derived from Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn, 1982) or Mindfulness-based Cognitive Therapy (MBCT; Segal, Williams & Teasdale, 2002), both of which are described in more detail below. A further two studies were grounded in the principles of Acceptance and Commitment Therapy (ACT; Hayes, Strosahl & Wilson, 1999), again described in more detail below. The median and most common duration of intervention was 8-weeks, however the length of intervention ranged greatly from three and a half days (Wasner et al., 2005) to 12 weeks (Pakenham, 2014). Within this, the frequency and total amount of time dedicated to the intervention also varied, for example some interventions required weekly sessions of up to three hours at a time (Stafford-Brown & Pakenham, 2012) whilst other interventions were carried out in brief five-minute sessions (Gauthier et al., 2015). Additionally, nine studies involved the use of home practice between group sessions, whilst six studies did not.

MBSR-based interventions

Mindfulness-based Stress Reduction (MBSR) was initially developed by Jon Kabat-Zinn in 1979 in an attempt to help individuals with chronic medical conditions to lead fuller and healthier lives (Kabat-Zinn, 1982). It was originally created as an eight-week, education-based intervention that focuses on teaching mindfulness meditation, breathing exercises and basic yoga. Throughout the exercises and techniques the focus is on mindfulness and thus on paying attention to the present moment non-judgementally. The current MBSR protocol as recommended by the University of Massachusetts Medical School's Center for Mindfulness website includes weekly two and a half hour-long group sessions across eight-weeks; one all day retreat; and home practice of mindfulness for 45-60 minutes daily (Center for Mindfulness, 2014). Since its initial application to

individuals with chronic medical conditions, MBSR has been widely used within both clinical and non-clinical samples, including healthcare professionals, and has been documented to bring about a decrease in distress, and improvements in well-being, positive coping and empathy (for a review see Praissman, 2008).

Shapiro et al. (2005) conducted a randomised-controlled trial (RCT) of an eight-week MBSR intervention with additional LKM for 18 multi-disciplinary healthcare professionals working in a US hospital. The authors reported a significantly greater increase in self-compassion for the intervention group in comparison to the control group, as scored on the SCS (Neff, 2003a). The waitlist control group consisted of 20 participants recruited from the same population as the intervention group. The authors note that the use of a placebo control group, as opposed to 'waitlist', would have been ideal. Although this would have allowed for a more tightly controlled study, the feasibility and acceptability of recruiting qualified healthcare professionals to engage in a placebo intervention is low. The MBSR intervention mostly followed the protocol outlined by the Center for Mindfulness (2014) as described above, however the weekly group sessions lasted two-hours and participants did not attend an all-day retreat. The authors report that daily home practice was also a part of the intervention, although they do not disclose the amount of time spent practicing at home – making it difficult to ascertain exactly how much time participants dedicated to the intervention. Finally, the study would have benefitted from the collection of follow-up data such that conclusions could be drawn about the sustainability of the increase in self-compassion.

Shapiro and colleagues went on to investigate the use of this same MBSR intervention protocol with additional LKM within a population of 22 Master's level Counselling Psychology students who had elected to complete a 10-week Stress Management course (Shapiro et al., 2007). The eight-week MBSR intervention was embedded within the overall 10-week course, and in this study the authors did recruit a placebo control group - 32 Master's level Counselling Psychology students, who were engaged in 10-week courses without an experiential mindfulness component.

Unfortunately, the authors were unable to randomise participants to group, meaning that those in the intervention group had specifically elected to engage in a Stress Management course – having said that, outside of research it is likely that healthcare professionals engaging in any such intervention would need to elect to do so. Furthermore, on this occasion the authors collected data on the length of time participants spent engaging in home practice – although the mean of 56 minutes per week suggests that participants in this study engaged in far less than the recommended 45-60 minutes per day (Center for Mindfulness, 2014). Interestingly, however, the authors found that the amount of time dedicated to home practice had no significant effect on outcome. The authors did find a significant main effect of group, whereby the intervention group had significantly larger increases in self-compassion on the SCS (Neff, 2003a) than did the control group. Again, the study would have benefitted further from the collection of follow-up data. Shapiro et al. (2007) also revealed that an increase in mindful attention and awareness (MAAS; Brown & Ryan, 2003) significantly predicted an increase in self-compassion, lending evidence to the suggestion that mindfulness is an important component in interventions aiming to increase self-compassion.

An RCT delivering an eight-week MBSR intervention to 28 first-year medical students was conducted by Erogul et al. (2014) with the intention of investigating whether a slightly less intensive protocol could remain beneficial. Participants engaged in 75-minute weekly sessions as well as home practice (mean time being 41 minutes per week), and participants also attended a full-day retreat during the intervention. Although the control group did not engage in any placebo intervention, the groups were randomly assigned and recruited from the same population. Additionally, the study benefitted from a relatively long follow-up period, with data being collected six-months after the intervention had ended. The authors found that despite the weekly classes being of shorter length, and the relatively small amount of home practice, the intervention group had significantly greater pre- to post-intervention increases in self-compassion than did the control group (as measured by the SCS; Neff, 2003a). Further, they found that this increase in

self-compassion was maintained at follow-up with the intervention group remaining significantly more self-compassionate than the control group after six-months. Overall this study was of high methodological quality, gaining a total rating of 24/26, and therefore lends strong support for the use of an abbreviated MBSR intervention for the purposes of promoting self-compassion.

Newsome et al. (2012) also delivered an eight-week MBSR intervention to students, though from a range of healthcare disciplines. Again the intervention loosely followed the recommended protocol for MBSR (Center for Mindfulness, 2014) although weekly sessions lasted 90 minutes and participants did not engage in a full-day retreat. It was found that self-compassion as measured by the SCS (Neff, 2003a) significantly increased between pre-intervention and post-intervention. The authors note that home practice was encouraged for at least 45 minutes, four times per week and that participants recorded this in a log book, however this data regarding the amount of home practice was unfortunately not described by the authors. Additionally, no control group was used making it difficult to draw conclusions about the exact source of this increase in self-compassion. This is partially helped, however, by the collection of baseline data prior to the collection of pre-intervention data which did reveal that the participants had no significant natural change across the four weeks prior to the intervention. Furthermore, the study benefitted from follow-up data which revealed that the increased level of self-compassion remained stable at one-month post-intervention.

Bazarko et al. (2013) adapted the delivery of an eight-week MBSR intervention, whereby participants attended two full-day retreats (one in week one and one in week eight) and in-between engaged with weekly one and a half-hour group teleconference calls, as opposed to attending for weekly sessions in-person. Additionally, participants had email contact with the facilitators if required, and were encouraged to engage with daily home practice for 30 minutes at a time. Participants were nurses recruited from a large US healthcare company, and unfortunately no control group was used for comparison. Within subjects comparisons however do show promising findings with self-compassion scores on the SCS (Neff, 2003a) increasing

significantly between pre- and post-intervention, and increasing further between post-intervention and four-month follow-up. It is important to consider that the average amount of time spent participating in the intervention (including the retreats, teleconference calls, and home practice) was 50 hours across eight-weeks, which may not be a feasible amount of time for busy healthcare professionals to dedicate. Further, the authors found that the majority of participants in this study were dedicating between one and five hours per week to self-practice between post-intervention and follow-up and importantly they found that those participants who maintained self-practice were significantly more self-compassionate at follow-up than those who had ceased mindfulness practice. In the absence of a control group, this lends support to the assumption that the MBSR techniques were helpful in promoting self-compassion.

Using another novel approach to the application of MBSR, Gockel et al. (2013) embedded 15-minute bursts of Mindfulness Training and LKM into 28 clinical interviewing classes attended by 38 first-year Social Work students. The Mindfulness Training involved 10 minutes of experiential mindfulness based on the content used in MBSR, followed by five minutes of related discussion, and totalled seven-hours of intervention across a 10-week period. A control group consisted of 94 individuals from the same population who also engaged in 28 clinical interviewing classes though without the 15-minute Mindfulness Training component, however allocation was not randomised. The SCS-SF (Raes et al., 2011) was used to collect data on self-compassion at pre- and post-intervention and again at three-month follow-up, however the authors found no significant change in self-compassion over time. This could suggest that the intervention was perhaps too brief or lacked the intensity to achieve the significant results that other MBSR-based studies have found. However, the authors report that almost half of the overall sample (46.2 %) disclosed that they had at some point maintained a personal practice of mindfulness prior to the intervention – it could therefore be that individuals had already reached a relatively high level of self-compassion prior to intervention and thus may benefit less. Unfortunately, results specifically looking at self-compassion were not reported in full so little interpretation of this sort can be made.

In summary, although individual studies investigating MBSR-based interventions did contain methodological and design flaws, when viewed as a body of literature the support for MBSR-based interventions is relatively strong. As a collection of studies, they provide data on both within-subjects and between-subjects effects, and also provide follow-up data and possible information about the intensity and duration of intervention required for change. In general, MBSR-based interventions appear to be effective for the cultivation of self-compassion within healthcare professionals. All but one of the studies utilising MBSR-based interventions found significant improvements from pre-intervention levels of self-compassion to post-intervention levels. Further, those studies utilising control groups found a significant effect of group in relation to self-compassion. Interestingly, MBSR-based interventions were found to be effective regarding self-compassion even when large amounts of the intervention were delivered via telephone, or were abbreviated (in that weekly sessions were shorter, retreats were not provided, or home-practice was limited). However, when greatly abbreviated to only 15 minutes per session, across 28 sessions, changes in self-compassion were not found to be significant.

MBCT-based interventions

Mindfulness-based Cognitive Therapy (MBCT) was developed by Segal, Williams and Teasdale (2002) as a therapeutic programme designed to reduce the risk of relapse for individuals with recurrent major depression. It is based on the premise that risk of relapse may be reduced if individuals can learn to become aware of negative thinking patterns and rumination and consequently draws heavily on the techniques and values of MBSR (Kabat-Zinn, 1982). Similarly to MBSR, MBCT is an eight-week group program which aims to increase the individual's awareness of, and change their relationship to, unwanted thoughts, feelings, and body sensations, so that individuals no longer avoid them or react to them in an automatic way. MBCT differs to MBSR in that it also draws on some principles of Cognitive Behavioural Therapy (CBT;

e.g. Beck, Rush, Shaw & Emery, 1979) such that individuals also learn skills and formulate around relapse prevention, for example by identifying early warning signs or by keeping written suggestions of negative thoughts to look out for. In the three included studies that utilised an MBCT-based intervention (Marx et al., 2014; Rimes & Wingrove, 2011; Brooker et al., 2013) the focus was shifted slightly from recurrent major depression to stress, so as to be more applicable for healthcare professionals at work.

Marx et al. (2014) aimed to investigate the effectiveness of MBCT in relation to perceived stress and self-compassion, for a sample of 42 UK mental health professionals working in the NHS. Although the authors followed the original eight-week protocol for MBCT (Segal et al., 2002) they also included some additional MBSR elements, for example the use of education around stress physiology. Participants also attended an orientation session before starting the course in order to induct the participants to the culture and expectations of the group. The authors found significant improvements in self-compassion scores on the SCS (Neff, 2003a) between pre-intervention and post-intervention. They also found that self-compassion remained significantly improved (in comparison to pre-intervention) at follow-up, three months post-intervention. Unfortunately there was no control group, making it difficult to ascertain how much of this improvement can be attributed to the MBCT group. It is also important to note that treatment adherence in this study was defined as having attended at least 50% of sessions offered, however the authors did not carry out any analysis to assess whether attendance rate impacted on outcome. In line with this, the amount of home practice was also not measured, again meaning the impact of this could not be statistically assessed.

In an earlier UK study, Rimes and Wingrove (2011) delivered an eight-week MBCT intervention to 20 Trainee Clinical Psychologists. Again, the original protocol (Segal et al., 2002) was followed, though with slight modification to the depression-specific content, making it more stress-focussed. In line with the findings of Marx et al. (2014), there were significant improvements in overall SCS score between pre-intervention and post-intervention. The study unfortunately did not collect

follow up-data, and again no control group was used. However, the authors did carry out analyses around attendance and also around stage-of-training in order to assess the impact of these factors on outcome. The average amount of time dedicated to home practice was reported to be 92 minutes per week. Interestingly, the authors found that participants in their first year of training showed significantly larger improvements in self-compassion than did participants in their second or third year of training, despite there being no significant year-group differences in the amount of home practice.

Brooker et al. (2013) delivered an eight-week intervention to 34 professionals working as either managers or support workers in a disability service in Australia. The intervention was based on MBCT though drew also on MBSR practices, with participants meeting weekly for two-hour sessions in addition to home-practice of 40 minutes, six days per week. The authors note that all participants attended at least five of the eight sessions, although adherence to homework practice was not reported, making it difficult to ascertain exactly how much time participants dedicated to the intervention. The authors found no significant change in self-compassion between pre-intervention and post-intervention, as measured by the SCS (Neff, 2003a). It was suggested that the positive effects of mindfulness may have become more apparent over time following completion of the study, however unfortunately no follow-up data was collected in order to test this.

In summary, research has begun to focus on the use of MBCT in healthcare professionals, although at present only three studies have directly measured the effect of this on self-compassion. Further, none of these three studies have recruited a control group, meaning that the within-subjects effects they have measured cannot reliably be attributed to the intervention only. From the reports it is also difficult to fully ascertain the content of the MBCT interventions being used, although in all cases MBSR-based practices were also drawn on, modifying the original depression-specific content to make it more stress-focussed. The effectiveness in relation to self-compassion appears to be mixed. Whilst two studies found significant improvements in

self-compassion over the course of the intervention, one study found no such change. The intervention sessions were of equal duration, although it could be that the amount of home-practice impacted on the intervention's effectiveness. Unfortunately, from the information available it is difficult to draw any firm conclusions on this. The study by Rimes and Wingrove (2011) also highlights that timing may be important, with individuals in their first year of training gaining larger improvements in self-compassion.

ACT-based interventions

Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) is an intervention grounded in behavioural psychology, but which also applies mindfulness and acceptance with commitment and behavioural change processes. It was developed to address avoidance behaviour that interferes with an individual's values for living, and as a means of increasing psychological flexibility. In tackling the experiential avoidance of private events such as emotions, thoughts, memories and bodily sensations perceived as aversive it is hoped that individuals will be more able to consciously connect with the present moment, and to adapt their behaviour or continue to engage in behaviour that fits their desired values. ACT involves six key treatment processes to achieve this: acceptance; defusion; contact with the present moment; self as context; values; and committed action. Although a detailed description of the treatment processes in ACT is beyond the scope of this review, it is worth noting that ACT makes use of metaphors, experiential exercises, and exposure to the avoided private events, in order to meet its objectives.

Stafford-Brown and Pakenham (2012) delivered an ACT-informed stress management intervention to 28 Clinical Psychology trainees from four Australian universities. The intervention involved weekly three-hour long sessions across four consecutive weeks, in which participants received didactic teaching, and engaged in group discussions and experiential exercises from an ACT perspective, as well as LKM. Participants were also expected to complete 'assignments'

between sessions which involved mindfulness exercises and LKM, focusing on values, and educational tasks around both stress and ACT. The study benefits from a controlled design, albeit non-randomised, with the waitlist control group being recruited from the same population as the intervention group. The authors found that whilst overall self-compassion did significantly improve between pre- and post-intervention, this improvement was noted for both the intervention group and the control group with no between-group differences being found. The 'over-identification' scale of the SCS (Neff, 2003a) did reveal significant between-group differences, with the intervention group seeing greater reductions in over-identification than the control group at both post-intervention and at 10-week follow-up. This suggests that the improvement in overall levels of self-compassion cannot reliably be attributed to participation in the intervention itself, although the intervention may have brought about positive changes in terms of over-identification specifically. Mindfulness, here (measured using the Five Facet Mindfulness Questionnaire; Baer, Smith, Hopkins, Krietmeyer, & Toney, 2006) was not found to mediate the improvements in over-identification, unlike the findings of Shapiro et al. (2007). However, the authors did find that increased scores on the Acceptance and Action Questionnaire (Bond & Bunce, 2003) significantly mediated improvements in over-identification. The authors suggest that this is in keeping with ACT theory, whereby acceptance and action are prime therapeutic processes (Stafford-Brown & Pakenham, 2012).

Pakenham (2014) later attempted to build on this study by evaluating the impact of ACT training within the curriculum for Clinical Psychology trainees, as opposed to a stand-alone stress-management intervention. For 32 trainees the ACT training was incorporated into the first year of their postgraduate course via 12 weekly workshops, each lasting two hours. The weekly workshops taught the six ACT treatment processes mentioned previously, as well as the ACT therapeutic stance, self-care, ACT for anxiety, and ACT for depression. The authors describe a 'self-as-laboratory' approach such that learning was highly experiential using role-plays, practice exercises, and application of ACT in clinical practice. Additionally, trainees were asked to practice

and apply the ACT strategies to their own lives outside of class, particularly with regards to self-care. The SCS (Neff, 2003a) was administered one week before the course and four weeks after the course. Only the self-kindness subscale revealed a significant improvement between pre-intervention and post-intervention. However, in the absence of a control group it is not possible to say how much of this change in self-kindness was attributable to the ACT training itself. For example, it might be that trainees just starting their postgraduate course would experience some amount of change, regardless of the topic being taught.

In brief, ACT-informed interventions have not been widely studied in relation to self-compassion in healthcare professionals. Within the two studies utilising an ACT-informed intervention, improvements in self-compassion were largely non-significant; only one subscale showed reliable improvements in each case, though this subscale was not consistent across the two studies. This makes it difficult to interpret the intervention as having cultivated self-compassion, particularly as the latter study did not compare with a control group. In the absence of data on home-practice, it is not possible to say whether participants had truly taken the principles of ACT on board and practiced this within their own lives outside of class.

Other interventions aiming to increase self-compassion

Moore (2008) investigated the use of a volunteer-led mindfulness group amongst Trainee Clinical Psychologists. Ten participants met on 14 occasions across a one-month period. On each occasion the group met for 10-minutes, with one volunteer from the group reading a mindfulness script each time. Each script typically involved seven minutes of silent practice alongside instructions, and the scripts were progressive, focussing first on breathing, then body, emotions and finally on thoughts. In general, the study was poorly controlled, for example it is not possible to know whether the participants utilised the exercises outside of the group or whether those attending only eight sessions experienced less change than those attending 13 sessions. There

was also no control group, and follow-up data was not provided. Consequently, possible changes in self-compassion cannot be interpreted beyond what is reported by the authors who found that only the self-kindness subscale of the SCS revealed significant improvements between pre-and post-intervention. Overall SCS scores did not significantly change over time.

Gauthier et al. (2015) implemented an intervention that was briefer still, with participants engaging in five-minute periods of mindfulness at a time, across a one-month period. The intervention was designed for, and tested within, a population of nurses working on a busy Paediatric Intensive Care Unit in the USA. The five-minute mindfulness practices were unscripted and spontaneous, focussing on breath, sound, body and mind, and were facilitated by a Zen Buddhist priest immediately before the participants' working shifts were due to start. Data on attendance is limited, though the authors note that 42% of participants attended an average of two sessions per week. Self-compassion was measured by the SCS (Neff, 2003a) at pre-intervention, post-intervention and at one-month follow-up, however the authors report no significant change in self-compassion over time. The authors suggest that the intervention may have been too brief to bring about changes in self-compassion, and also highlight that the intervention may not have been didactic enough for beginners, who would perhaps have benefitted more from guided mindfulness exercises.

Bond et al. (2013) implemented an 11-week 'Embodied Health' module for 27 first- and second-year medical students in the USA. The module involved weekly 90-minute classes containing an hour of mindfulness meditation, breathing exercises and yoga followed by a 30 minute neuroscience lecture. The lectures and associated reading revolved around the effect of mindfulness and meditation on physiology and stress. Participants were also asked to engage with daily mind-body exercises such as meditation at home. Overall scores on the SCS (Neff, 2003a) increased between pre-intervention and post-intervention suggesting an increase in self-compassion. Unfortunately, no control group was employed meaning it is not possible to know how much of this change was caused by the intervention. There was also no follow-up data to

provide information about the sustainability of this improvement. It would be interesting to know whether the combination of experiential classes and neuroscience lectures was particularly important, or if one of these components alone would bring about similar improvements in self-compassion. It is perhaps also worth noting that the combination of experiential exercises with neuropsychological education is reminiscent of Compassionate Mind training and CFT developed by Paul Gilbert (2009), which also aims to increase one's self-compassion as well as compassion for and from others.

Finally, Wasner et al. (2005) measured the impact of a spiritual care training workshop 'Wisdom and Compassion in Care for the Dying' on self-compassion. The training was attended by a range of healthcare professionals working in palliative care, and involved three and a half days of learning about active and compassionate listening, and learning how to recognise and address the causes of emotional and spiritual suffering. Exercises used within the training were described as non-denominational spiritual practices, which included contemplation and meditation and were designed for both personal use, and for professional use with service-users. Alongside a range of standardised measures and other non-standardised numeric rating scales, the authors asked participants to rate their level of 'compassion with oneself' immediately before and after training, but also at six-month follow-up. The authors report that 'compassion with oneself' significantly improved over the course of the training, and that this improvement was sustained six-months post-training. Considering these findings in isolation, it can be said that the training workshop brought about significant and lasting improvements in self-compassion. However, as previously mentioned caution must be taken when comparing these findings with the 14 studies utilising standardised measures, all of which are based on Neff's (2003b) conceptualisation of self-compassion.

In summary, four studies utilised more individual forms of intervention, albeit sharing mindfulness as a key component. Two of these studies implemented relatively brief interventions of only five or 10 minutes at a time, across a one month period, which did not show promising results in

terms of self-compassion (Moore, 2008; Gauthier et al., 2015). A combination of mindfulness exercises and related neuroscience lectures were found to be successful in cultivating self-compassion in medical students across 11-weeks, however methodological flaws mean that the sustainability of these improvements is unknown. Also, throughout these four studies there was a lack of a control group, meaning it is difficult to reliably attribute any improvements to the intervention itself. Using a non-standardised measure, one study also found that a three and a half-day workshop could be useful in cultivating greater 'compassion with oneself', which was sustained even at six-months post-training (Wasner et al., 2005) although how this was defined by participants is unclear.

Discussion

This review aimed to examine the effectiveness of interventions upon levels of self-compassion within healthcare professionals. Within this, the quality of this strand of research was also reviewed, as was the preferred methods of measuring self-compassion in such studies, and the types of intervention being utilised. Following a systematic protocol, 15 studies were selected for inclusion in the current review.

All studies relied on self-report to measure self-compassion, and all but one study utilised measures developed by Neff and colleagues, with 13 studies opting for the SCS (Neff, 2003a) and one utilising the abbreviated version – the SCS-SF (Raes et al., 2011). These measures draw on Neff's (2003b) conceptualisation, which considers self-compassion to be a culmination of self-kindness, common-humanity and mindfulness. One study, however, gave no clear indication of the conceptualisation or definition they were using, and asked participants to numerically rate their level of 'compassion with oneself' as a means of measuring self-compassion. Self-report measures are generally flawed in that they are open to response bias, and this may be particularly the case when completed by healthcare professionals, who may have some prior

knowledge of mindfulness and self-compassion influencing their responses. Having said that, it is difficult to imagine an alternative measure of a construct such as self-compassion which is suitable for research. For example, it would be difficult to capture one's style of relating to oneself, or to identify how compassionate one's thoughts are about oneself without this needing to be reported in the first place.

All of the included studies utilised an intervention that held mindfulness as a key component. In some cases the intervention relied solely on mindfulness exercises (e.g. Gauthier et al., 2015) whilst others included mindfulness exercises within a broader and more manualised protocol, such as in MBSR, MBCT and ACT. Additionally, four studies also utilised LKM in an attempt to cultivate compassion more specifically (Gockel et al., 2013; Shapiro et al., 2005; Shapiro et al., 2007; Stafford-Brown & Pakenham, 2012). Due to the heterogeneity of studies, a meta-analysis was not deemed appropriate for the current review. Instead, effectiveness was reviewed qualitatively using a narrative synthesis approach.

How effective are interventions for increasing self-compassion in healthcare professionals?

Six studies examined the effectiveness of an MBSR-based intervention on the self-compassion of health professionals, either qualified or in-training. Although based on MBSR, none of the included studies completely followed the recommended protocol outlined by the Center for Mindfulness (2014). The modifications made to the protocol included abbreviated weekly sessions, omitting the full-day retreat (or in one case including an extra full-day retreat), omitting or reducing the time required in home practice, and in one study delivering the weekly group sessions via teleconference calls. The quality of these six papers was varied, and the methodological shortcomings tended to revolve around a lack of control group, a lack of follow-up data, or a failure to measure the amount of home practice such that the total time spent engaging with the intervention could not be calculated. Despite this, when viewing these studies in

combination it is possible to draw some conclusions about the effectiveness of MBSR-based interventions for improving self-compassion and the sustainability of these effects. In general, MBSR-based interventions appear to be effective for the cultivation of self-compassion within healthcare professionals. All but one of the studies utilising MBSR-based interventions found significant improvements in self-compassion from pre-intervention to post-intervention, and those studies utilising a control group also found the intervention group improved significantly more than the control group. These improvements in self-compassion were sustained up to six-months post-intervention, suggesting that the benefits of MBSR-based interventions may have lasting effects on an individual's capacity to relate to themselves compassionately. In the one study which did not find any significant change in self-compassion, Gockel et al. (2013) had abbreviated the protocol to just 15-minute sessions of MBSR across a series of 28 sessions, suggesting that this amount of intervention may not be sufficient to achieve the level of change found in the other five studies.

Three studies drew on some of the principles of MBSR but used these within an MBCT framework, therefore adapting what was originally a depression-specific protocol into a more stress-focussed intervention, making it more applicable to healthcare professionals at work. Unfortunately, none of the studies utilising an MBCT intervention recruited a control group for comparison, meaning findings cannot reliably be attributed to the intervention itself. The quality of these three studies was also compromised by limited reporting of the amount of time spent engaging with home-practice, and limited understanding of the sustainability of findings, with only one study collecting follow-up data. Effectiveness in relation to self-compassion was mixed; whilst two studies found significant improvements in self-compassion over the course of the intervention, one study found no such change. Unfortunately, due to the methodological shortcomings and limited information, it is difficult to make predictions about why results are mixed. It is possible that despite sharing the same amount of time in weekly sessions, participants in different studies engaged with very different amounts of home-practice, for

example. Although Rimes and Wingrove (2011) found that participants in their first year of training improved significantly more in terms of self-compassion than participants in their second/third year of training, despite these groups reporting equal amounts of home practice. In the one study reporting follow-up data the significant increase in self-compassion was found to be sustained up to three-months post-intervention. These findings suggest that health professionals engaging in MBCT-based interventions may gain sustainable improvements in self-compassion, although the degree to which these improvements are directly attributable to the intervention itself is unknown, as are the factors making this intervention more or less effective.

Two studies drew on the principles of ACT, though the specific interventions were heterogeneous. Stafford-Brown and Pakenham (2012) delivered an eight-week stress management intervention based on ACT to Trainee Clinical Psychologists, whilst Pakenham (2014) later went on to evaluate the effectiveness of ACT training incorporated into the curriculum for Trainee Clinical Psychologists. Although Stafford-Brown and Pakenham (2012) found significant within-subjects improvements in self-compassion, when compared to a waitlist control group only the 'over-identification' subscale of the SCS showed significant improvements attributable to the intervention. Similarly, the later study by Pakenham (2014) revealed significant improvements only on the 'self-kindness' subscale of the SCS, although there was unfortunately no control group for comparison, making it difficult to accept this significant improvement in self-kindness as a product of the intervention itself. Given the paucity of research evaluating ACT in relation to self-compassion it is difficult to draw firm conclusions, however it can be said that this initial research does not lend strong support for the use of ACT principles in cultivating self-compassion in healthcare professionals. It is acknowledged however that greater research is needed. That is, in the absence of data on home-practice, it is not possible to say whether participants had truly absorbed the principles of ACT and practiced this within their own lives.

Finally, four studies utilised mindfulness principles and practice, though not affiliated with any of the more education-based, protocol-driven interventions such as MBSR. None of the studies

recruited a control group, and only two of them collected follow-up data. Two of these studies implemented relatively brief interventions of only five or 10 minutes at a time, across a one month period, which did not show promising results in terms of self-compassion (Moore, 2008; Gauthier et al., 2015). In line with the findings of Gockel et al. (2015) who implemented MBSR for 15-minutes across 28 sessions, it could be that this 'dosage' was too brief for any significant effect to occur. Using a more traditional 'dosage' of 90 minutes per week, Bond et al. (2013) found a combination of mindfulness exercises and related neuroscience lectures successful in cultivating self-compassion in medical students. However, again the amount of time spent practicing at home and the sustainability of this increased self-compassion is unknown, in addition to the issues of uncontrolled designs. Finally, Wasner et al. (2005) found that a three and a half-day workshop on spiritual palliative care could be useful in cultivating greater 'compassion with oneself', which was sustained even at six-months post-training. Although this lends support for the use of a spiritually-based workshop in promoting self-compassion, the authors used a non-standardised numerical rating scale to measure 'compassion with oneself'. Consequently, it is not possible to know whether participants were interpreting self-compassion in the same way that, for example, Neff (2003b) would interpret self-compassion.

In summary, interventions drawing on the principles and practice of mindfulness show promising results and can be effective in significantly improving healthcare professionals' ability to relate to themselves compassionately. At present, interventions derived from the education-based and protocol-driven treatments of MBSR and MBCT are the most widely studied in terms of self-compassion in healthcare professionals. Indeed, these interventions also seem to be the most effective in terms of cultivating self-compassion, with increases in self-compassion being sustained up to six-months post-intervention. Interestingly, these interventions were found to be effective even when using more novel approaches such as delivering classes via telephone, or when weekly classes were abbreviated. However, when interventions were abbreviated too much, for example to five or 15-minute sessions, little or no change was established in relation to

self-compassion. Despite being the most widely studied interventions regarding self-compassion in healthcare professionals, it is important to note that the body of research around MBCT and MBSR is not free of flaws. This review has highlighted the methodological shortcomings (such as inconsistency in recruiting control groups or in collecting follow-up data) which compromise the quality of such papers, and ultimately mean that education and protocol-driven interventions cannot be fully endorsed. Whilst the use of mindfulness exercises in a less manualised protocol was also found to have some positive impact on self-compassion, this body of research is more sparse and of lower methodological quality. Unfortunately, only two studies reported on the mediating effect of mindfulness, and one of these found significant improvements for 'over-identification' only, limiting the generalisability of the mediation analysis (Stafford-Brown & Pakenham, 2012). However, Shapiro et al. (2007) did find that significant improvements in overall self-compassion were mediated by improvements in mindful attention and awareness. This suggests that mindfulness may indeed be an important component in terms of increasing self-compassion, however further research is needed before firm conclusions can be drawn. Four studies also utilised LKM, which specifically aims to cultivate compassion for the self and others (Gockel et al., 2013; Shapiro et al., 2005; Shapiro et al., 2007; Stafford-Brown & Pakenham, 2012). However, due to the heterogeneity of these studies it is difficult to comment on the usefulness of LKM over and above mindfulness exercises. Whilst Shapiro and colleagues (2005, 2007) found significant increases in self-compassion, Gockel et al. (2013) and Stafford-Brown and Pakenham (2012) did not find reliable improvements, suggesting that further research into the use of more compassion-specific interventions is required.

Given the potential success of mindfulness-based interventions, particularly those derived from MBSR and MBCT for cultivating self-compassion in healthcare professionals, attention should be paid to both the use of such interventions in everyday practice and the further investigation of these interventions, addressing those methodological shortcomings identified throughout this review. Self-compassion has been associated with more positive affect, happiness and optimism

(Neff & Vonk, 2009). It has also been associated with less negative affect, anxiety, stress and depression, and has also been found to benefit individuals with high levels of shame and self-criticism (Neff & Vonk, 2009; Neff et al., 2007; Leary et al., 2007; Leaviss & Uttley, 2015). In this sense, increases in self-compassion may be particularly beneficial for healthcare professionals, who as a population are exposed to high levels of occupational stressors, but who may also be dealing with self-criticism and shame when feeling stressed (National Institute for Occupational Safety and Health, 2008; Brooks et al., 2011; Firth-Cozens, 1997). This self-criticism may also lead healthcare professionals to feel embarrassed about seeking-help or taking time off from work when required, further adding to the level of stress they may face (Brooks et al., 2011). Consequently, offering healthcare professionals the opportunity to engage with interventions, such as those based on MBSR reviewed here, may increase their self-compassion which in turn may improve their well-being and their ability to seek help when required. This could have long-term benefits for those working in healthcare, encouraging better physical and psychological health which can only impact positively on one's ability to care for others (Henshall et al., *in preparation*).

Limitations of review

This review has systematically appraised the available literature relevant to the effectiveness of self-compassion-increasing interventions for healthcare professionals. Being a relatively new focus of study, the scope of this review was limited, in part, by the quality of the studies available. Shortcomings in terms of methodological quality included a lack of control group or the use of a non-randomised control group, lack of follow-up data, and a lack of information about treatment adherence and amount of time dedicated to the intervention. With few randomised controlled trials, it was often difficult to know whether changes were attributable to the intervention itself, or whether natural change may have occurred over time. Similarly, it was difficult to ascertain

whether it was the general process of engaging with an intervention which elicited change, or whether the specific components of the intervention were necessary. For example, the opportunity to be within a group of colleagues and to know that you are not alone in your difficulties may in itself increase one's sense of common humanity – a key component of self-compassion (Neff, 2003b).

Without the randomised controlled design, studies are also open to recruitment bias, with participants opting in to intervention groups. Having said that, this style of recruitment is perhaps most similar to real-world intervention groups, where healthcare professionals would opt to attend, thus making the research more ecologically valid.

As with any review of the literature, only research meeting a certain level of quality will be accepted for publication and disseminated on research databases, making the literature review susceptible to publication bias. In line with this, authors may be more likely to publish some research studies over others. Although the current review was systematic, and attempted to include all of the relevant, quantitative research studies, it is important also to remember that the studies included here may not be fully inclusive. This is also relevant to the choice to exclude qualitative research within the current review. Although such questions were beyond the scope of this review, qualitative studies could provide additional information about the feasibility and acceptability of interventions which aim to increase self-compassion. Qualitative data could also complement the numerical data, allowing deeper or more contextual interpretations about the benefits one gets from such interventions.

Conclusions, implications and directions for future research

Interventions which aim to cultivate self-compassion within healthcare professionals have the potential to improve their well-being and to minimise the impact of stress, as well as increasing their ability to seek help when required. This may also have an indirect impact on their ability to

care for others, including service-users and colleagues. This review aimed to assess the effectiveness of interventions with regards to increasing the self-compassion of healthcare professionals. None of the interventions reviewed focussed solely on self-compassion, instead all of them shared mindfulness as the key component and target for intervention. However, in general the interventions did have a positive impact on self-compassion. Education-based and protocol-driven interventions, such as those based on MBSR and MBCT, were the most widely studied and also provided the most consistent outcomes revealing significant improvements in self-compassion over time. However, methodological shortcomings across papers means that caution must be taken when endorsing even these more widely studied interventions. This review therefore provides initial support for the use of mindfulness-based interventions as a means of increasing self-compassion within healthcare professionals and highlights the potential usefulness of further research in this field. Increasing self-compassion in turn may have a positive impact on their health and overall well-being, their ability to seek help when required, but also on their ability to care for service-users and colleagues. Implementation of such interventions would perhaps be most beneficial if based on existing protocols, making use of weekly sessions and between-session practice of mindfulness exercises. Further research is also indicated in order to further clarify the role of home practice and the optimum amount of time that individuals should dedicate to the intervention. Future studies would also benefit from the use of randomised controlled designs and in the collection of follow-up data. As none of the reviewed interventions were specifically designed to improve self-compassion alone, the use of mediation analysis or indeed more tailored interventions is required in order to assess the usefulness of mindfulness itself, and how this relates to the use of more compassion-specific exercises such as LKM. Finally, research focussed on Compassionate Mind Training and CFT-based approaches for healthcare professionals is required, comparing the effectiveness of such interventions with the mindfulness-based approaches reviewed here.

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Part two

Empirical paper

The relationship between perceived organisational threat and compassion for others: Implications for the NHS

Lauren Elizabeth Henshall^{1*}, Tim Alexander¹, Philip Molyneux¹ and Ashleigh McLellan^{2 3}

¹ Department of Psychological Health and Wellbeing, University of Hull, Hertford Building,
Cottingham Road, Hull, United Kingdom, HU6 7RX

² Hull Recovery and Psychological Interventions Team, John Symons House, Park Row, Hull,
HU2 8TB

³Humber Traumatic Stress Service, Victoria House, park Street, Hull, HU2 8TD

* Corresponding Author. E-mail address: L.Henshall@2012.hull.ac.uk

Telephone number: +44 (0) 1482 464106 Fax: +44 (0) 1482 464093

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The relationship between perceived organisational threat and compassion for others:

Implications for the NHS

Abstract

The National Health Service (NHS) is known to be a challenging place to work, with financial and performance targets placing increasing pressure on the organisation. This study aimed to investigate whether these pressures and threats might be detrimental to the quality of care and the level of compassion that the NHS strives to deliver. Qualitative and quantitative data were collected via self-report questionnaires from healthcare professionals across three NHS Trusts in England in order to measure self-compassion, compassion for others, perceived organisational threat and perceived organisational compassion. The key findings suggest that whilst perceived organisational threat may impact on an individual's ability to give compassion to others, self-compassion and organisational compassion were better predictors of compassion for others. This highlights the need to consider compassion at a systemic level, providing interventions and training not only to cultivate self-compassion in healthcare professionals, but also to encourage compassion across the NHS more generally. In promoting self-compassion and increasing the level of compassion that employees feel they receive at work, healthcare professionals may be better able to maintain or improve their level of compassion for service-users and colleagues.

Introduction

The quality of health care services is often the focus of political interest and clinical interventions, and improving the quality of services is now a key requirement for the National Health Service (NHS; The Health Foundation, 2014). Recently, the failure of a healthcare system to meet adequate levels of quality and safety has resulted in the publication of the Francis Report (Mid Staffordshire NHS Foundation Trust Public Inquiry, 2013), which highlights the importance of putting the service-user first, by “ensuring that, within available resources, they receive effective care from caring, compassionate and committed staff, working within a common culture”. Indeed, ‘compassion’ is stated as one of the six values enshrined in the NHS constitution, and underpinning all that the NHS does (NHS England, 2013).

To be able to work within a ‘common culture’ involving care, compassion and commitment, compassionate and caring individuals must work alongside likeminded colleagues, but perhaps would also benefit from working within compassionate and caring services and environments more generally. This is in contrast to the current representation of the NHS within the media (Unison, 2013; BBC News, 2013, 2014, 2015). For example, government-driven threats to the NHS as an organisation exist in the form of privatisation and the need to compete with other providers for business (Unison, 2013), amongst others. Within the organisation additional challenges exist for individual NHS Trusts, such as the threat of financial penalties if targets are breached (NHS Commissioning Board, 2013) which can leave healthcare professionals with excessive workloads, time pressures and inadequate staffing levels (National Institute for Occupational Safety and Health- NIOSH, 2008). Alongside these top-down pressures, healthcare professionals often also face extreme suffering in service-users and interpersonal conflicts amongst colleagues and managers (NIOSH, 2008). It is perhaps unsurprising then that 27% of health service staff exceed the threshold for ‘minor psychiatric disorders’ such as anxiety and depression on the General Health Questionnaire (Goldberg & Hillier, 1979), compared to just 18% for the British workforce more generally (Wall et al., 1997). In turn, the impact of these

stresses and pressures on healthcare professionals may also impact on the quality of the relationships and the care that service-users receive. That is, stress and burnout are thought to negatively impact on attention, concentration, decision-making skills and the professional's ability to establish relationships with service-users (Shapiro, Brown & Biegel 2007). Given the prevalence of stress and burnout within NHS staff and healthcare professionals more generally, and the impact this may have on service-users, it is important to consider ways to conceptualize and improve this situation.

Compassionate Mind

One way to conceptualise and understand this stress is through the work of Paul Gilbert (2009), using the Compassion-Focussed Therapy (CFT) model. Gilbert's (2009) theory suggests that humans, in common with other animals, possess three key emotion-regulation systems. The first system, the 'threat and self-protection system' (herein referred to as the 'Threat system') reacts quickly to threat by giving bursts of feelings such as anger, anxiety or disgust in order to protect the self. The second system, the 'incentive and resource-seeking system' (herein referred to as the 'Drive system') drives us to seek out resources in order to survive, giving feelings of motivation, excitement and pleasure. Finally, the 'soothing and contentment system' (hereafter referred to as the 'Affiliative system') brings about feelings of peacefulness and contentment when we are neither threatened nor striving to achieve, and gives us feelings of well-being associated with connectedness to others. Despite having these emotion regulation systems in common with other animals, humans are unique in that our brains have evolved to also allow complex thinking, imagination, learning and language (Gilbert, 2009). The CFT model therefore distinguishes between the 'old brain' (the three emotion regulation systems) and the 'new brain', which involves more unique skills allowing humans to reflect on the three systems and thus on our emotions and behaviours (Gilbert, 2009). In line with this model, it could be suggested that

feelings of distress and burnout in healthcare professionals result from over-activation of both the Drive system and the Threat system, and under-activation of the Affiliative system. This distress may be increased if professionals relate to their experiences (via the new brain) in a critical or harsh way. For example, a nurse may find her Threat system being activated when the shift is under-staffed so she is unable to dedicate as much time as she would like to each service-user and works most of the shift feeling hungry and tired. Now consider how critical or threat-based thinking via the new brain may leave her questioning whether she is at fault for not spending enough time with each service-user, or what she might have done 'wrong' during the shift. In contrast, Gilbert (2009) describes how nurturing the Affiliative system can help one to develop a more compassionate motivation, helping the three emotion regulation systems to operate in more balanced, healthy and productive ways. For example, the Drive system can attend to action in the service of compassion, to prevent or resolve the sources of suffering; the Threat system can attend to situations that may jeopardise compassion; and the Affiliative system promotes soothing, encourages connection with others and emphasises the importance of maintaining positive relationships. Thus, cultivating a compassionate motivation, based on a clear understanding of how this tricky brain works, can allow humans to think and behave in ways which are more likely to create happiness for the self and others (Gilbert, 2009).

Compassion can be broadly described as a non-judgemental sensitivity to the suffering of self and others, with a commitment to prevent and alleviate that suffering (Dalai Lama, 1995). Gilbert (2009) proposes that compassion involves the flow of compassion to the self, to others, and also involves allowing compassion to flow from others to oneself. He has also identified a number of attributes and skills thought to be necessary in cultivating this flow of compassion. The six key attributes include: 'motivation' to care for well-being, 'empathy' and 'sympathy', 'distress tolerance' rather than controlling or avoiding emotions, 'sensitivity' to distress, and a 'non-judgemental' stance (Gilbert, 2009). The compassionate skills with which to build on the six attributes include: imagery to bring about feelings and sensations of warmth and kindness;

learning to direct attention in a compassionate and mindful way; thinking and reasoning in a helpful and honest way, without rumination; and behaving compassionately to the self and to others (Gilbert, 2009). Kristen Neff (2003a) has expanded on the concept of self-compassion and describes three necessary components: self-kindness- being warm and understanding towards ourselves; common humanity- recognizing that suffering and personal inadequacy is part of the human experience; and mindfulness- taking a balanced, non-judgemental approach to our emotions so that they are neither suppressed nor exaggerated.

Threat and Self-compassion

Research has begun to investigate how self-compassion interacts with the Threat system. Neff and Vonk (2009) found that self-compassion, as measured by the Self-Compassion Scale (SCS; Neff, 2003b), was positively correlated with happiness, optimism and positive affect, whilst being negatively correlated with self-worth instability, social comparison, public self-consciousness, self-rumination, anger and the need for cognitive closure/certainty, in a sample of over two-thousand participants. In an experiment, Neff, Kirkpatrick and Rude (2007) found that greater self-compassion was associated with significantly less anxiety following a mock job interview, even after controlling for initial levels of negative affect. Furthermore, in a series of five experiments, Leary, Tate, Adams, Allen and Hancock (2007) investigated the role of self-compassion in the emotional and cognitive experience of negative life events. The authors found that participants who had greater levels of self-compassion were more likely to treat themselves kindly after negative life events, were less likely to under-value and be critical of their abilities, and were more able to accept responsibility for feedback, rather than externalising blame. Leary et al. (2007) also found that a greater level of self-compassion was associated with less catastrophising and personalising, less negative affect, and a decreased likelihood of feeling overwhelmed by negative emotion, as well as a greater sense of equanimity and humour. It is important to note

that these studies focussed on undergraduate samples only, and failed to measure social desirability bias alongside the self-report questionnaires. Despite this, they provide reasonably strong evidence to suggest that higher levels of self-compassion may serve to buffer against the effects of negative experiences and cognitive processes which activate the Threat system.

Threat and compassion for others

Two studies have attempted to explore the impact of compassion for others on activation of the threat system. Pace et al. (2009) investigated the effects of a 6-week Lojong-based compassion meditation, where one practices developing spontaneous feelings of empathy and love for an ever expanding circle of people. Following these 6 weeks participants took part in a laboratory stress task involving public-speaking and mental arithmetic in order to induce anxiety and stress. The authors found that the compassion meditation did not significantly alter self-reported levels of distress or biochemical measures of anxiety when compared to a control group. However, within the meditation group, those practicing meditation more often did exhibit lower anxiety and distress levels overall. It is important to note that level of compassion for others was not recorded following the meditation, so it is difficult to know whether the meditation did indeed increase compassion for others.

Cosley, McCoy, Saslow and Elissa (2010) also asked individuals to engage with a stress task involving mental arithmetic and public speaking, though in this study one group was joined by neutral evaluators during the task, whilst another was joined by supportive evaluators.

Compassion for others was measured prior to the experiment using the Compassion subscale of the Dispositional Positive Emotion scales (Shiota et al., 2006). In the supported group evaluators would interrupt with verbal and non-verbal praise. In this situation higher compassion for others was significantly correlated with lower blood pressure and lower cortisol levels during the task, suggesting lower levels of anxiety. In contrast, the neutral group showed no correlation between

compassion for others and any of these physiological measures, despite the two groups having no significant physiological differences at baseline. These findings are interesting in that compassion for others seemed to play a role in buffering against the physiological effects of stress, but only when social support from the evaluators was present. It could be that individuals who are more able to give compassion to others are also more able to receive compassion and support from others, in line with Gilbert's (2009) idea about the flow of compassion. Yet when in the neutral group without this social support, participants' Threat systems were activated and they experienced anxiety despite their level of compassion for others, suggesting that compassion for others alone does not directly buffer against stress. These findings are also supported by the findings of Pace et al. (2009), whereby possible increases in compassion for others had little effect on the stress response in a task where support was not available.

As compassion is thought to involve a complex interplay of motivational and emotional systems, over- or under-stimulation of one of these systems could be detrimental to an individual's capacity for compassion. Self-compassion may buffer against the impact of threat (e.g. Leary et al., 2007) and compassion for others might also indirectly buffer against stress by increasing one's ability to draw on social support (Cosley et al., 2010). However, when self-compassion and social support are limited or not accessible, activation of the Threat system may limit one's capacity for compassion. That is, according to Gilbert's (2009) theory the flow of compassion requires a range of skills and attributes, which draw on higher-level cognitive components such as attention and reasoning. However, it could be suggested that such skills might be difficult to access whilst one's Threat system is activated, as one's body may have shifted into a 'survival mode'. Returning to the previous example of the nurse – if she continued to work shifts that were under-staffed she may find her stress symptoms gradually worsening; she may become more emotionally exhausted, and her attention and concentration may decline (Shapiro et al., 2007). This would likely leave her with less emotional reserve and thus less capacity to tolerate the suffering of service-users and colleagues – one of the skills identified by Gilbert (2009) as important for

compassion. Despite this theoretical relationship, the authors found no such research exploring this.

The Present Study

It can be theorised that healthcare professionals experiencing occupational stress, or whose levels of perceived organisational threat is high (for example, when there is job insecurity or long working hours), may find it more difficult to access the attributes or higher level cognitive components required for compassion. This is an important consideration given the current drive for 'compassionate care' in the NHS (NHS England, 2013). However, as yet this link between threat and compassion for others has, to the best of the authors' knowledge, not been investigated. Consequently the first aim of the present study was to explore this potential relationship.

Hypothesis 1: Perceived organisational threat experienced by healthcare professionals will be negatively correlated with their level of compassion for others at work.

A second research aim was to investigate the impact of self-compassion and perceived organisational compassion on activation of the threat system, and on compassion for others. The literature suggests that higher levels of self-compassion may have a buffering effect against activation of the threat system and the stress-response (e.g. Leary et al., 2007). Research on the potential buffering effect of compassion for others is sparser. Preliminary findings suggest that compassion for others may not directly buffer against threat and stress, however increased compassion for others may increase one's ability or desire to draw on social support, which in turn can reduce levels of stress (Cosley et al., 2010). Given this, the present study aimed to investigate perceived organisational compassion alongside self-compassion. Perceived organisational compassion here refers to the perceived degree to which an organisation fosters a culture of compassion, including the degree of social support that members of that organisation

feel they receive at work. It was predicted that perceived organisational compassion and self-compassion would both moderate the relationship between perceived organisational threat and compassion for others. Again using the previous example of the nurse, the level of threat that she perceived whilst at work may have been high and thus may have been detrimental to her ability to give compassion. However, if she were to have improved self-compassion and perceived the organisation in general to be compassionate and supportive, she may be better able to cope with and manage the occupational stressors and perceived organisational threat, thus reducing the impact of such stressors on her ability to give compassion to others.

Hypothesis 2: The relationship between perceived organisational threat and compassion for others will be strongest when perceived organisational compassion is low and weakest when perceived organisational compassion is high.

Hypothesis 3: The relationship between perceived organisational threat and compassion for others will be strongest when self-compassion is low and weakest when self-compassion is high.

Method

Design

A cross-sectional design was employed, collecting both quantitative and qualitative self-report data via questionnaires. The dependent variable was compassion for others. The predictor variables were perceived organisational threat, self-compassion, and perceived organisational compassion.

Procedure

Employees were invited from three NHS Trusts in England to take part in an anonymous online survey between August 2014 and January 2015. Trusts 1 and 3 were Mental Health Trusts, whilst Trust 2 was an Acute Trust. At the point of recruitment, only Trust 3 was already integrating the CFT model into service delivery and planning, staff training, and research and development.

Advertisements for the survey were circulated online via the Trusts' intranet pages and their staff newsletters. The advertisement briefly outlined the aims of the study, the broad focus of the anonymous survey questions, and that it should take approximately 30 minutes to complete (see Appendix G for the full advertisement). Potential participants voluntarily self-selected by following the link within the advert, re-directing them to the online survey hosted by Survey Monkey (www.surveymonkey.com). Upon following the link potential participants were presented with an information sheet (see Appendix H), a description of the inclusion criteria, and a consent form (See Appendix I). Following completion of the questionnaires participants were presented with a debriefing page (see Appendix J).

Approval for the study was granted by the Faculty Ethics Committee at The University of Hull (See Appendix K) and from the relevant Research and Development departments for each of the three NHS Trusts. Permission to advertise was also granted from the relevant NHS trusts.

Participants

The inclusion criteria specified that participants were: an NHS employee; working in a clinical profession and/or their job role involved clinical contact with service-users/patients. A total of 314 participants met the inclusion criteria, consented to participate, and completed at least one questionnaire. Of the 314 participants included, 276 (87.90%) completed all questionnaires within the survey. Demographic data are presented in Table 1.

Power Analysis

A power analysis calculation using G*Power version 3.1.3 (Faul, Erdfelder, Buchner & Lang, 2009) software was performed to find the required sample size to test for moderation by adding interactions to a multiple regression model for the dependent variable, compassion for others. The calculation was based on a requirement of 80% power and a 5% significance level. The effect size assumed was based on a study by George, Reed, Ballard, Colin and fielding (1993) which utilized the same method of analysis to investigate the moderating effect of two variables (organisational support and social support) on the relationship between exposure to a particular client group and negative affect. The power calculation for the present study showed that, with linear multiple regression analysis assuming an R^2 of 0.2 for all predictor variables excluding the two interaction effects, and assuming a 0.05 increase in R^2 by adding in the two interactions to test moderation for Hypotheses 2 and 3, a sample size of 148 participants would be needed. This was an assumed effect size of $f^2=0.067$.

Measures

All measures were included within one anonymous online survey (see Appendices L - P).

Demographics

Participants were asked to disclose their age, gender, the NHS trust within which they were employed, their job role/job title, and for how many years they had worked within the NHS.

Perceived Organisational Threat

As no clear measure of perceived organisational threat existed at the point of designing this study, the authors reviewed the available scales and questionnaires that might best quantitatively assess the level of threat that individuals perceive in relation to their work. In the present study the aim was not to measure the actual level of stress (i.e. whether stress symptoms are present) but instead was to measure the level of perceived threat, which involves the stressors and challenges faced by individuals working within that organisation. Consequently, A Shortened Stress Evaluation Tool (ASSET; Cartwright & Cooper, 2002) was chosen, which is a measure developed to assess risk of stress within a workforce with respect to a range of known workplace stressors. It contains three main scales as well as collecting biographical information. Specifically, the 'Perceptions of your job' scale of ASSET was used to measure 'perceived organisational threat' as a predictor variable. The 'Perceptions of your job' scale contains 37 items covering the following categories of workplace stressors: work relationships, the nature of the job, overload, control, job security, resources and communication, work-life balance and pay and benefits. Each item is preceded by "I am troubled that..." and participants respond via a six-point likert scale, ranging from '1 (strongly disagree)' to '6 (strongly agree)'. For example, the first item reads "I am troubled that... I work longer hours than I choose or want to". 'Perceived organisational threat' was measured by summing the 37 individual item scores, giving a minimum possible score of 37 and a maximum of 222, where higher scores indicate greater Perceived Organisational Threat. Although not included within the Perceived Organisational Threat predictor variable, participants also completed the remaining two scales of ASSET- 'Attitudes towards your organisation' and 'Your health'. The 'Attitudes towards your organisation' scale contains nine items, such as "I feel valued and trusted by the organisation" which participants respond to via a six-point likert scale ranging from '1 (strongly disagree)' to '6 (strongly agree)'. The 'Your health' scale contains a list of 17 physical symptoms associated with stress, such as "headaches", and asks participants to rate how often they experience each, ranging from '1 (never)' to '4 (often)'. Faragher, Cooper and

Cartwright (2004) report adequate internal consistency and strong convergent validity. ASSET was normed on a large sample of public and private sector workers in the UK (N=25,352) and the available norms for each subscale can be found in Table 2.

Open Question

Due to the dearth of measures aiming to quantify perceived organisational threat, the authors discussed and developed an open question, with a view to gaining qualitative data alongside the ASSET questionnaire. It was hoped that the qualitative data could provide more detailed information on the most relevant organisational threats perceived to be present by participants. At the end of the overall survey participants were presented with a free-response box and asked 'What is the biggest thing that troubles you about working in your organisation?'

Self-Compassion

The Self-Compassion Scale – Short Form (SCS-SF; Raes, Pommier, Neff & Van Gucht, 2011) is based on Neff's (2003a) conceptualisation of self-compassion, described earlier. The scale contains 12 items, for example "I'm disapproving and judgmental about my own flaws and inadequacies". Each item is rated on a five-point likert scale ranging from '1 (almost never)' to '5 (almost always)', asking participants to rate how often they 'behave in a stated manner'. The SCS-SF is an abbreviated version of the original 26-item Self-Compassion Scale (SCS; Neff, 2003b) and the two measures are found to be highly correlated ($r > .97$; Raes et al., 2011). Raes et al. (2011) report that the English version of the SCS-SF has high internal consistency ($\alpha = .86$) when calculating a total self-compassion score, however the subscales of the SCS-SF were found to have relatively low internal consistency (α ranged from .54 to .75). Consequently, the short form was selected for use in the current study to reduce burden on participants, however individual subscales were not analysed. For each participant an overall SCS-SF score was calculated by reverse-scoring the items on the three negative subscales

before then calculating an overall mean. This gives a minimum possible score of one and a maximum of five, whereby higher scores indicate greater self-compassion. Norms were not available for the SCS-SF, however Lockard, Hayes, Neff and Locke (2014) found a mean SCS-SF score of 2.80 amongst a sample of 1,609 students attending for counselling at colleges or universities in the US.

Compassion for Others

The Compassion Scale (CS; Pommier, 2011), although a measure of compassion for others, was also developed around Neff's (2003a) conceptualisation of self-compassion. It is a 24-item questionnaire giving an overall measure of compassion for others, as well as scores on three positive subscales (Kindness, Common humanity and Mindfulness) and three negative subscales (Indifference, Separation and Disengagement). Participants respond to each item using a five-point likert scale describing how often they 'behave in a stated manner', ranging from '1 (almost never)' to '5 (almost always)'. For example, one item reads "I like to be there for others in times of difficulty". Pommier (2011) found the CS to have good internal consistency (Cronbach's $\alpha=.90$), good split-half reliability (.90) and adequate convergent validity. For use in the current study, participants were asked specifically to consider how they 'typically act towards others at work', rather than considering how they generally act towards others, so as to specifically capture participants' level of compassion for others within the workplace. For each participant an overall CS score was calculated as a measure of 'Compassion For Others' by reverse scoring the three negative subscales before then calculating an overall mean. This gives a minimum possible score of one and a maximum of five, whereby higher scores indicate greater compassion for others. During validation of the CS, Pommier (2011) found the mean score to be 3.57 in a sample of 510 undergraduate educational-psychology students. More recently, Neff and Germer (2013) found a

baseline mean CS score of 4.17 amongst a sample of 54 individuals from the general public in the US, who had opted to take part in a Mindful Self-Compassion Program.

Organisational Compassion

The Compassionate Organizations Quiz (COQ; Simon-Thomas & Nauman, 2013) is a 16-item questionnaire measuring how participants think, feel and act in a given organisation in order to assess how successfully that organisation fosters compassion in its employees. Participants respond using a five-point likert scale ranging from '1 (never)' to '5 (always)'. Four items represent non-compassion, whilst the remaining 12 items represent compassionate organisational experiences. For example, one item reads "The leaders in my organisation take time to talk and listen to people who are having a hard time". Participants were instructed to "please consider the 'organisation' to be the NHS trust within which you are employed, and keep that organisation in mind as you answer the questions". At the time of writing there are no published data relating to the reliability or validity of this measure. Participants were given an overall COQ score as a measure of 'Perceived Organisational Compassion' by reverse-scoring the four non-compassion items before then calculating an overall mean. This gives a minimum possible score of one and a maximum possible score of five, such that higher scores represent greater organisational compassion. At the time of writing, no existing data is available on the normative scores for the COQ.

Data Analysis Procedures

Data was analysed using IBM SPSS Statistics version 22.0 (IBM Corp., 2013) for windows.

Descriptive statistics were used to analyse the demographic data. A significance level of 5% was used in all data analysis procedures.

Pearson's Product Moment Correlation Coefficient was used to investigate correlations between the predictor variables. To include the maximum number of participants for each analysis, participants were included in each correlation if they completed the two questionnaires relevant to that analysis, rather than excluding participants that did not complete all four questionnaires from all analyses.

Linear Multiple Regression analysis was then completed in three stages to explore the degree to which the demographic and predictor variables could explain the variance in Compassion for Others, and to carry out a moderation analysis to explore Hypotheses 2 and 3.

Qualitative data collected via the open question ('What is the biggest thing that troubles you about working in your organisation?') was analysed using thematic analysis, following the six-step approach outlined by Braun and Clarke (2006). First, the data was repeatedly read by the first author and semantic patterns were noted. Secondly, the data set was systematically coded. Initially, data were deductively coded according to the eight subscales of the 'Perceptions of your job' scale of the ASSET questionnaire. Following the initial coding process, the codes were reviewed by the first and second authors to generate, omit, combine and divide codes. Thirdly, codes were organised into themes by the first and second authors. Fourthly, the themes were organised and reviewed in relation to other themes, codes, and the raw data set. Fifth, superordinate and subordinate themes were labelled and defined before finally presenting these in tabular format alongside examples in preparation for this report.

Results

Descriptive Statistics

Demographic Characteristics

Demographic data are available in Table 1. The majority (68.5%) of participants were recruited from Trust 1 and most (64%) were at least 40 years of age. A large proportion of participants were female (82.2%), which is in keeping with more general NHS workforce statistics reporting that 77% of NHS employees are female (NHS Choices, 2014). Participants were recruited from a range of disciplines and job roles, with the largest group being classified as 'Nursing' (40.1%) which is again in keeping with general NHS workforce statistics (NHS choices, 2014). Disciplines with small participant numbers were grouped together as 'Other' (making up 12.4% of the sample). Pearson's Chi Squared tests were carried out on the categorical variables (age group, gender, and job role) to test for differences between NHS Trusts. For the purposes of the Chi Squared tests only, 'job role' was temporarily re-grouped as either 'Nursing' (40.1%) or 'Other' (50.6%) to ensure cell counts were sufficiently large for analysis. The Chi Squared tests revealed no relationships between NHS Trust and demographic characteristics ($p > .05$ for all tests). The mean number of years worked within the NHS was 16.04 years (standard deviation = 10.79) though this ranged from less than one year to 46 years. A One Way ANOVA revealed that this mean differed significantly between NHS Trusts ($F(2, 298) = 6.549, p = .002$) and a Tukey post-hoc test revealed that the number of years worked in the NHS was significantly larger for Trust 2 than it was for Trust 1 ($p = .001$) only.

Table 1. Demographic characteristics of the overall sample and each of the three individual NHS Trusts.

	Overall sample N= 314	Trust 1 N= 215 (68.5%)	Trust 2 N= 43 (13.7%)	Trust 3 N= 46 (14.6%)
Age Groups				
20-29 years	32 (10.2%)	27 (12.6%)	2 (4.7%)	3 (6.5%)
30-39 years	71 (22.6%)	48 (22.3%)	9 (20.9%)	11 (23.9%)
40-49 years	100 (31.8%)	69 (32.1%)	13 (30.2%)	17 (37%)
50+ years	101 (32.2%)	66 (30.7%)	19 (44.2%)	15 (32.6%)
Gender				
Female	258 (82.2%)	185 (86.0%)	34 (79.1%)	35 (76.1%)
Male	49 (15.6%)	29 (13.5%)	9 (20.9%)	11 (23.9%)
Job Role				
Nursing	126 (40.1%)	81 (37.7%)	23 (53.5%)	20 (43.5%)
Psychology, Psychotherapists and Counsellors	59 (18.8%)	43 (20.0%)	4 (9.3%)	11 (23.9%)
Physiotherapy, OT and SALT	28 (8.9%)	24 (11.2%)	1 (2.3%)	3 (6.5%)
Health Care Assistants and Support Workers	33 (10.5%)	32 (14.9%)	-	6 (13.0%)
Other	39 (12.4%)	23 (10.7%)	10 (23.3%)	2 (4.3%)
Mean Number of years worked in NHS (SD)				
	16.04 (10.79)	14.97 (10.46)	21.4 (11.87)	16.24 (10.18)

Note: OT – Occupational Therapy; SALT – Speech and Language Therapy; SD – Standard Deviation.

Predictor Variables

Scale score means were calculated for all measures and can be found in Table 3. The Shapiro-Wilk Test was used to test for normality within each NHS Trust (3 groups) for each of the 12 variables displayed in Table 3. Comparisons were then made between NHS Trusts using a One Way ANOVA or a Kruskal-Wallis Test (if a non-parametric test was indicated).

A One Way ANOVA revealed that there was a significant main effect of group on the 'Attitudes towards your organisation' scale of the ASSET ($F(2, 301) = 3.565, p = .030$). A Tukey post-hoc test revealed that the mean score was significantly higher in Trust 1 than it was in Trust 3 ($p = .047$) and significantly higher in Trust 2 than it was in Trust 3 ($p = .040$) suggesting that participants from Trusts 1 and 2 had significantly more positive attitudes towards their organisation than did Trust 3.

A One Way ANOVA revealed that there was a significant main effect of group on the SCS-SF score ($F(2, 287) = 10.063, p < .001$). A Tukey post-hoc test revealed that the mean SCS-SF score was significantly higher in Trust 1 than it was in Trust 3 ($p < .001$) suggesting that participants from Trust 1 were significantly more self-compassionate than those from Trust 3.

A Kruskal-Wallis Test revealed that there was a significant main effect of group on the 'Your Health' Scale of the ASSET ($X^2 = 7.641, df = 2, p = .022$) with Trust 1 showing the lowest mean score and Trust 3 showing the highest mean score. This suggested that Trust 1 employees had better health and lower levels of stress than employees of Trust 3.

A Kruskal-Wallis Test revealed that there was a significant main effect of group on the overall CS score ($X^2 = 8.126, df = 2, p = .017$) and on three of the individual CS Subscales: Indifference ($X^2 = 9.914, df = 2, p = .007$); Separation ($X^2 = 6.292, df = 2, p = .043$); and Mindfulness ($X^2 = 7.975, df = 2, p = .019$). In comparison to the other NHS Trusts, Trust 1 revealed the highest mean score on positive subscales and the lowest mean score on the negative subscales, suggesting the greatest level of compassion for others when compared to the other two Trusts. In comparison, Trust 3 revealed the lowest mean score on the positive subscales and the highest mean score on the negative subscales, suggesting participants from Trust 3 exhibit the least compassion for others.

No significant main effect of group was found for the following variables: The 'Perceptions of your job' Scale of the ASSET (used as a measure of Perceived Organisational Threat; $p = .096$); CS

Kindness Subscale ($p=.233$); CS Common Humanity Subscale ($p=.235$); CS Disengagement Subscale ($p=.054$); and COQ ($p=.678$).

Table 2. Mean scores obtained within the current study for each of the scales and subscales of the ASSET questionnaire, alongside the normative scores based on 25,352 public and private sector workers in the UK (Robertson Cooper Ltd., 2004). Standard deviations (SD) given in parentheses.

ASSET subscale	Mean score of overall Sample	Normative mean
'Perceptions of Your Job' Scale	117.99 (28.94)	-
Work Relationships	21.04 (7.96)	21.85 (2.85)
Work-life balance	13.04 (4.22)	12.42 (1.24)
Overload	13.40 (4.78)	11.33 (1.27)
Job Security	12.07 (3.80)	11.66 (0.81)
Control	13.93 (5.06)	13.02 (0.98)
Resources & Communication	12.67 (4.39)	12.82 (0.94)
The Job	28.71 (6.26)	25.46 (2.77)
Pay & Benefits	3.12 (1.58)	3.44 (0.33)
'Attitudes towards your organisation' Scale	31.81 (9.01)	-
Perceived commitment of organisation to employee	16.03 (5.64)	20.11 (1.24)
Perceived commitment of employee to organisation	15.79 (4.18)	15.58 (2.53)
ASSET 'Your health' Scale	41.76 (11.62)	-
Physical Health	15.77 (4.23)	13.82 (0.77)
Psychological Well-being	26.00 (8.20)	23.15 (1.38)

Note: ASSET – A shortened Stress Evaluation Tool (Cartwright & Cooper, 2002)

Table 3. Mean scores for each variable within the overall sample and each of the three NHS Trusts (Standard deviation given in parentheses).

Variable	Overall			
	Sample	Trust 1	Trust 2	Trust 3
ASSET 'Perceptions of Your Job' Scale	117.99 (28.94)	116.23 (27.58)	115.37 (33.97)	126.15 (30.75)
ASSET 'Attitudes towards your organisation' Scale	31.81 (9.01)	32.22 (8.60)	33.42 (7.67)	28.74 (11.75)
ASSET 'Your health' Scale	41.76 (11.62)	40.75 (11.93)	42.19 (11.90)	45.35 (9.27)
SCS-SF	2.98 (0.73)	3.11 (0.70)	2.83 (0.68)	2.62 (0.73)
CS overall	4.09 (0.55)	4.15 (0.53)	4.12 (0.48)	3.85 (0.61)
CS Kindness Subscale	4.10 (0.78)	4.14 (0.80)	4.14 (0.68)	3.96 (0.76)
CS Indifference Subscale	1.87 (0.70)	1.80 (0.66)	1.89 (0.71)	2.18 (0.76)
CS Common Humanity Subscale	3.94 (0.75)	3.97 (0.71)	3.94 (0.92)	3.77 (0.76)
CS Separation Subscale	1.85 (0.79)	1.78 (0.75)	1.81 (0.72)	2.14 (0.89)
CS Mindfulness Subscale	4.05 (0.79)	4.13 (0.76)	3.97 (0.92)	3.80 (0.74)
CS Disengagement Subscale	1.82 (0.71)	1.77 (0.70)	1.80 (0.58)	2.07 (0.80)
COQ	2.89 (0.66)	2.92 (0.64)	2.88 (0.73)	2.82 (0.69)

Note: ASSET – A shortened Stress Evaluation Tool (Cartwright & Cooper, 2002); SCS-SF – Self-Compassion Scale – Short Form (Raes et al., 2011); CS – Compassion Scale (Pommier, 2011); COQ – Compassionate Organizations Quiz (Simon-Thomas & Nauman, 2013).

Are the predictor variables related?

Relationships between each of the predictor variables was assessed using Pearson's Product Moment Correlation Coefficient (see Table 4). Perceived Organisational Threat, as measured by the 'Perceptions of your job' Scale of the ASSET was significantly, although weakly, negatively correlated with Self-Compassion and Compassion for Others, and was significantly and moderately, negatively correlated with Perceived Organisational Compassion. This suggests that

as the level of organisational threat perceived by an individual increases, the level of organisational compassion perceived by the individual decreases, as does their ability to show compassion towards themselves and others at work. These findings therefore lend support for Hypothesis 1. Additionally, significant, although weak, positive correlations were found between Self-Compassion, Compassion for Others, and Organisational Compassion. This suggests that the more self-compassionate an individual is, the more compassionate they are to others, and the more they perceive the organisation they work in to be a compassionate organisation. It is important to note, however, that the nature of correlational analysis means that relationships can be detected but causal inferences cannot be made. For example, perceived organisational compassion may be either a predictor of self-compassion and compassion for others, or a consequence of one or both of these variables.

Table 4. Inter-correlations between the predictor variables (Figures shown depict Pearson's *r*).

	Compassion for Others	Self-Compassion	Organisational Compassion (COQ score)
Perceived Organisational Threat (ASSET 'Perceptions of your job' score)	$r = -0.336^*$	$r = -0.302^*$	$r = -0.661^*$
Compassion for Others (CS score)	-	$r = 0.313^*$	$r = 0.391^*$
Self-Compassion (SCS-SF score)	-	-	$r = 0.283^*$

Note: ASSET – A shortened Stress Evaluation Tool (Cartwright & Cooper, 2002); SCS-SF – Self-Compassion Scale – Short Form (Raes et al., 2011); CS – Compassion Scale (Pommier, 2011); COQ – Compassionate Organizations Quiz (Simon-Thomas & Nauman, 2013).

* $p < .001$

Is Perceived Organisational Threat related to Compassion for Others, and is this relationship moderated by Self-Compassion and/or Organisational Compassion?

A multiple regression model was used to further investigate whether there was an association between Perceived Organisational Threat and Compassion for Others. In Stage one of the regression analysis, the four demographic variables (age, gender, number of years' experience in the NHS, and job role) were entered into a simultaneous regression model. The results indicated that Gender was significantly associated with Compassion for Others ($\beta=0.322$, $SE= 0.094$, $t= 3.237$, $p=.001$) with females gaining greater CS scores, indicating higher levels of compassion for others (mean female CS score= 4.14, $SD= 0.53$; mean male CS score= 3.79, $SD= 0.61$). No significant association was found for age, number of years' experience in the NHS, or job role ($p>.05$).

In stage two of the analysis the three predictor variables (Perceived Organisational Threat, Self-Compassion, and Organisational Compassion) were centred, and then entered into a simultaneous regression model alongside the four demographic variables (age, gender, number of years' experience in the NHS, and job role). Results indicated that greater Self-Compassion ($\beta =0.165$, $SE= 0.046$, $t= 3.362$, $p<.001$) and greater Organisational Compassion ($\beta =0.200$, $SE= 0.066$, $t= 3.177$, $p=.003$) were both significantly associated with greater Compassion for Others. However, the association between Perceived Organisational Threat and Compassion for Others was not found to be significant ($\beta=-0.001$, $SE= 0.002$, $t= -0.556$, $p=.433$) once the other two predictor variables were accounted for. Gender ($\beta=0.345$, $SE= 0.088$, $t= 3.786$, $p<.001$) continued to be significantly associated with Compassion for Others, whilst age, number of years' experience in the NHS, and job role failed to reach significance ($p>.05$).

Stage three of the analysis was carried out in order to test for moderation, and the results are summarised in Table 5. Here, the three centred predictor variables (Perceived Organisational Threat, Self-Compassion, and Organisational Compassion) and the four demographic variables

(age, gender, number of years' experience in the NHS, and job role) were entered into a simultaneous regression model alongside two interactions ('Self-Compassion by Perceived Organisational Threat' and 'Organisational Compassion by Perceived Organisational Threat'). Results indicated that neither the interaction between Self-Compassion and Perceived Organisational Threat nor the interaction between Organisational Compassion and Perceived Organisational Threat were significant. This suggests that Hypotheses 2 and 3 are not supported; neither Self-Compassion nor Organisational Compassion moderate the relationship between Perceived Organisational Threat and Compassion for Others. This is expected given that stage two of the regression analysis showed that there was no significant association between Perceived Organisational Threat and Compassion for Others once the other predictor variables and the demographic variables were taken into account.

Table 5. Stage three of the multiple regression analysis to test for a moderating effect of self-compassion and perceived organisational compassion on the relationship between perceived organisational threat and compassion for others.

Variable	β (SE)	t	95% CI	p-value
Demographic variables				
Age Groups				
20-29 years	.197 (.14)	1.407	(-.08, .47)	.161
30-39 years	.004 (.11)	.039	(-.20, .21)	.969
40-49 years	-.027 (.08)	-.323	(-.19, .14)	.747
50+ years	-	-	-	-
Gender				
Female	.340 (.09)	3.805	(.16, .52)	<.001
Male	-	-	-	-
Job Role				
Nursing	.084 (.10)	.840	(-.11, .28)	.402
Psychology, Psychotherapists and Counsellors	.166 (.12)	1.439	(-.06, .39)	.152
Physiotherapy, OT and SALT	.158 (.13)	1.215	(-.10, .41)	.225
Health Care Assistants and Support Workers	-.015 (.13)	-.118	(-.27, .24)	.906
Other	-	-	-	-
Mean Number of years worked in NHS	.003 (.004)	.779	(-.01, .01)	.437
Predictor variables				
Perceived Organisational Threat	-.001 (.002)	-.537	(-.004, .002)	.591
Self-compassion	.157 (.05)	3.398	(.07, .25)	.001
Perceived Organisational Compassion	.218 (.07)	3.231	(.09, .35)	.001
Interactions				
Perceived organisational threat x self-compassion	.001 (.001)	.720	(-.002, .004)	.473
Perceived organisational threat x perceived organisational compassion	.001 (.002)	.496	(-.002, .004)	.620

Note: OT- Occupational Therapy; SALT – Speech and Language Therapy.

Qualitative analysis

In addition to the statistical analysis used to quantify perceived organisational threat, thematic analysis (Braun & Clarke, 2006) was used to investigate and gain a greater understanding of the nature of this perceived organisational threat. 235 participants (74.8%) contributed to the thematic analysis by providing written responses to the open question – “What is the biggest thing that troubles you about working in your organisation?”. Five super-ordinate themes were identified, and these along with the sub-ordinate themes identified, can be found in Table 6. Four of the super-ordinate themes related to troubles and threats located within the organisation: Change; Overload and resources; Work relationships; and Communication, leadership and direction. A final super-ordinate theme – ‘Personal factors’ – was identified to collate those troubles located more within the individual.

Table 6. Super-ordinate themes, and descriptions of the sub-ordinate themes with example quotes, identified through thematic analysis of participants’ responses (N=235) to the question “What is the biggest thing that troubles you about working in your organisation?”

Super-ordinate theme	Sub-ordinate theme	Description	Example quotes
Change	Control over change	Troubles related to a lack of control or a lack of input when change is made	“Having to deal with enforced staff and team changes which are detrimental and difficult to manage has been a major burden.” “I have not been asked my expertise on my new contract.”
	Impact of change	The impact of change on services, staff and service-users and the uncertainty and insecurity that this creates around the future and jobs	“all the changes make others feel very insecure” “Changes in structure that may mean not being able to provide

			the flexibility that the clients require.”
	Amount of change	The frequency of change and “changing for changes sake”	“I dislike the feeling of constant change and chaos as the trust strives to improve standards and meet targets” “the never ending changes”
Overload and Resources	Physical, financial and staff resources	Shortage of resources, including staff members and time pressures on staff – associated waiting times for service-users and increased workload for staff	“Lack of time to respond to every client and family with the space they deserve.” “Constant lack of resources, and yet buildings are heated to tropical levels. Very poor use of technology.”
	Time devoted to technology, admin and paperwork	In addition to fewer staff resources there are more paperwork and admin duties to complete	“Too much technology takes time away from patient care” “being buried in paper work and having to use poorly designed computer data inputting systems.”
	Target-driven culture	Overall sense that the culture is to strive to achieve targets above all else- conflict between targets and patient care	“driven by models and targets, it feels that we are forgetting that there are people involved in this process” “Driven [by] business concerns rather than what constitutes good clinical practice.”
	Work-life balance	Issues or stresses related to the amount of time dedicated to work, or the impact this has on other areas of life	“spend extra time at home catching up with computer work frequently.” “I had worked over 200 unpaid hours extra in the space of 6 months just trying to keep up.”

Nature of the work	Troubles related to the difficult nature of the work and the complexity or risks of clinical work	“Working with patient group is becoming more risky and unsafe.” “dealing with difficult situations”
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Work relationships	Lack of support, humility and compassion	Feeling a lack of care, support and compassion from the organisation to its staff	“This culture does not genuinely foster a sense of compassion for ourselves and for our colleagues.” “I think the whole organisation needs to consider the wellbeing of the staff working for it in a detailed and considered way; not just a 'tick box' exercise.”
	Bullying and punishment	Feeling like there is culture of blame and judgment, leading to bullying and punishment	“I have seen Bullying” “I feel that the organisation uses a 'big stick' and takes a punitive approach rather than supportive approach should someone be experiencing a difficult time professionally.”
	Trust and monitoring	Feeling untrusted to do the job or feeling constantly watched, judged, or monitored by the organisation	“Worried to be ill in case of going on sickness monitoring.” “Feel that I am being watched all the time through statistical information and not on a face-to-face basis. I am an honest person but sometimes feel this is questioned.”
	Isolation	Feeling isolated or disconnected from colleagues	“Working as a bank worker I feel alone and don't fit in anywhere its quite lonely” “Isolation from my team. I rarely see them because team meetings are held at a time when I cannot attend. I rarely see my boss even,

			so I feel a long way off - even though I feel they probably do care about me.”
	Not feeling valued	Feeling a lack of respect or recognition, and not feeling valued through pay and benefits	“Not being shown any appreciation of the hard and difficult work that we do” “I am going to be down-banded due to money savings”
	Inequality	Troubles relating to inequality or feeling that others are not ‘pulling their weight’	“Attitudes like ‘I’m not doing that it’s not part of my job role’.” “There doesn’t seem the care for employees there once was... diversity and equality should apply to all not just patients”
Communication, leadership and direction		Lack of clear direction from leaders, and a lack of communication around the rationale and purpose of change	“When there are changes in service provision people are unaware of this or what this might mean.” “lack of vision and long term strategic thinking to benefit patients and carers”
Personal Factors		Troubles attributed to personal factors	“I have a disability and worry about the impact it has on my team and working with patients/colleagues.” “Not as confident or assertive as other staff members.”

Summary of results

The results of the quantitative analysis, firstly, indicated that Compassion for Others, Self-Compassion and Perceived Organisational Compassion were all found to be positively correlated, such that an increase in any one of these variables was related to an increase in the other two. Further, as Perceived Organisational Threat increased, Compassion for Others, Self-Compassion and Perceived Organisational Compassion decreased. Despite this correlational relationship between Perceived Organisational Threat and Compassion for Others, the moderation analysis revealed that Perceived Organisational Threat was not a significant predictor of an individual's level of compassion for others. Instead, only greater Self-Compassion, greater Perceived Organisational Compassion and Gender (specifically, being Female) were found to be significant predictors of greater Compassion for Others. Comparisons between the three NHS Trusts revealed that participants from Trust 1 were found to have more positive attitudes towards their organisation, higher levels of self-compassion, higher levels of compassion for others, and were also found to have better physical and psychological health than participants from Trust 3. Interestingly, however, there were no significant differences between Trusts in terms of demographic characteristics, their perceived level of organisational compassion, or their perceived level of organisational threat. The qualitative analysis suggested that the content and nature of participants' perceptions of organisational threat can be considered in terms of five key themes. Firstly, 'Change', including a lack of control over organisational changes, the negative impact of change and the frequency of these changes. Secondly, 'Overload and resources' relating to the difficult nature of the work and a lack of physical and financial resources, but also to a lack of staff or a lack of time to carry out one's responsibilities and the impact this has on life at work and at home. Thirdly, participants wrote about troubles related to 'Work relationships', which included experiences of bullying, a lack of support and compassion, feeling isolated from others, or feeling untrusted or under-valued. A fourth theme involved troubles related to a lack of

'Communication, leadership and direction' within their organisation. Finally, participants also spoke of troubles located more within the individual 'Personal factors' for example not feeling confident in one's abilities.

Discussion

Hypothesis 1 predicted that perceived organisational threat experienced by healthcare professionals would be negatively correlated with their level of compassion for others. This hypothesis was partially supported in so much as a significant correlational relationship was found between Perceived Organisational Threat and Compassion for Others, whereby as threat increased compassion for others decreased. Through thematic analysis this study also explored the nature of these perceived threats. Participants' troubles about working in their organisation were broad, spanning five super-ordinate themes. One of the most prominent super-ordinate themes was 'Overload and resources' which included troubles relating to a lack of time to dedicate to clinical work, or a lack of financial and physical resources, resulting in poorer care provision and over-stretched staff. This seems to echo news stories on increasing waiting times (BBC News, 2015) and NHS funding cuts (BBC News, 2014), for example. The super-ordinate theme of 'Change' revolved largely around the lack of control healthcare professionals feel they have over changes to their organisation, and their feelings of uncertainty about the future. Again, this is perhaps unsurprising given the recent political and media focus on changes to the NHS, including ideas around privatisation of the NHS and service re-structuring (BBC News, 2013). It does however highlight the need for staff to feel consulted about such changes, and to feel that they are informed of these changes. In line with this, a third super-ordinate theme was of 'Communication, leadership and direction' which professionals suggested was lacking. Perhaps the most surprising super-ordinate theme involved troubles relating to 'Work relationships' with many participants revealing experiences of bullying from colleagues and managers, a culture of

blame, judgement and punishment, and a lack of support, compassion and humility between professionals. This is in stark contrast to the 'common culture' of compassion called for within the Francis Report (Mid Staffordshire NHS Foundation Trust Public Inquiry, 2013).

This study also sought to investigate factors that could minimise the effect of this perceived organisational threat, reducing its possible negative impact on compassion for others at work. In line with this, Hypotheses 2 and 3 predicted that the relationship between perceived organisational threat and compassion for others would be moderated by self-compassion and organisational compassion. However, this moderation effect was not supported as the relationship between perceived organisational threat and compassion for others was not found to be significant once other variables were accounted for. Instead, Self-Compassion and Organisational Compassion were found to be stronger predictors of Compassion for Others. Specifically, an increase in an individual's compassion for the self, or an increase in an individual's perceived compassion from their organisation (their employing NHS Trust) significantly predicted an increase in compassion for others at work.

Although Hypotheses 2 and 3 were unsupported, these findings further existing knowledge. Firstly, the significant positive relationship between self-compassion and compassion for others is, to the authors' knowledge, a novel finding. Pommier (2011) did not find this relationship when validating the CS in a sample of undergraduate students. Additionally, the finding that organisational compassion is predictive of compassion for others presents, to the authors' knowledge, another novel finding. These relationships do however make theoretical sense when considering CFT theory as Gilbert (2009) proposes that compassion involves the flow of compassion to the self, to others, and allowing compassion to flow from others to oneself. As discussed earlier, Gilbert (2009) suggests that the Affiliative system, specifically, is linked to developing a compassionate motivation which can help to balance the three emotion regulation systems. In line with this theory, the findings of the current study suggest that developing the Affiliative system (and by association a compassionate motivation) through improving

organisational compassion and employees' self-compassion, will generate improvements in compassion for others.

A final predictor of compassion for others identified within the present study was gender, with females seemingly demonstrating significantly greater levels of compassion for others. This finding is consistent with previous literature (Pommier, 2011). One explanation for such differences put forward by Seppälä (2014) suggests that males and females have a similar capacity for compassion, but that the genders may express compassion in different ways as a result of socialisation. This view is supported by a neuroimaging study which found that males and females did not differ in terms of how they rated a series of images (as either compassion-evoking or not) but that they did differ in terms of the brain regions activated when viewing such images (Mercadillo, Diaz, Pasaye & Barrios, 2011). Similarly, gender differences in the expression of compassion may have been adaptive in terms of evolution. For example, following childbirth mothers need to be attuned to the needs of the baby and need to have compassionate motivation to alleviate their baby's distress. For this reason, the Affiliative system may be particularly important for females. Likewise, in evolutionary terms males may have needed to provide physical protection and resources for mother and baby, perhaps relying more on the Drive system. This too would suggest that males and females have the same capacity for compassion, but may express it differently. Whilst males may exhibit fiercer or more protection-focussed forms of compassion in general, the common representation of compassion (involving kindness, nurturance and emotional warmth) may be more attributable to females (Seppälä, 2014). Indeed, the CS (Pommier, 2011) which was used in the present study to capture compassion for others focusses more on this 'feminine' expression of compassion. This may be why females in the present study, and in Pommier's (2011) study using the same measure, were found to have greater levels of compassion for others than males.

Indeed, one of the limitations of this study is the use of questionnaires and the specific measures chosen. Self-report data was necessary given the need to capture participants' own perceptions

of compassion or threat, however the use of self-report data does unfortunately allow for bias. It must also be acknowledged that there was a dearth of measures available for each variable and as such, the measures chosen were not ideal. As described earlier, the compassion measures may relate more to a 'feminine' conceptualisation, neglecting some of (what can be considered) the more 'masculine' traits of compassion, such as protection or courage (Seppälä, 2014). Additionally, the particular troubles captured within the measure of perceived organisational threat may not be fully inclusive of the threats relevant to healthcare professionals within the NHS, although this challenge was partially overcome through the collection of qualitative data.

It is important also to recognise that the measures used within this study do not give a direct measure of compassionate behaviour, such that caution must be taken when predicting that an increase in one's compassion for others score represents an increase in one's compassionate behaviour towards others. Initial findings into this relationship however are promising. Condon, Desbordes, Miller and DeSteno (2013) compared the effects of an eight-week mindfulness meditation and an eight-week compassion meditation to a waitlist control group. Following the randomly-assigned eight-week intervention/waitlist period participants were assessed for compassionate responding in an experimental paradigm. Participants were invited to the laboratory with the intention of completing tests of cognitive ability, but whilst in the waiting room were unknowingly assessed to see whether or not they would give up their chair for someone visibly in pain. Condon et al. (2013) found that individuals in both the mindfulness meditation and the compassion meditation groups were more than five times more likely to offer their chair up in order to help the individual who was suffering. The findings of Condon et al. (2013) therefore provide initial support for the idea that compassionate behaviour may increase following an intervention designed to increase compassionate motivation, however the authors did not report whether or not this was also reflected on questionnaire measures. Further research is therefore needed in order to ascertain whether an individual's score on a measure of compassion accurately reflects the degree to which they behave compassionately.

In addition, the measures used in the current study represent the participants' responses at a single point in time, and therefore cannot identify how an individual's level of compassion may change/ be maintained across situations or towards different individuals or groups. For example, it may be that a nurse relates more compassionately to other nurses than to managers, or vice versa. Indeed, empathy (believed to be one of the key attributes required for compassion; Gilbert, 2009) for example is thought to be greater between individuals who perceive themselves as more similar (for example, from the same healthcare profession; Hogg & Vaughan, 2005). It is therefore necessary to recognise that other factors not measured within the current study, such as situational context and the relationships between individuals, may also impact on one's level of compassion for others and will be important to explore with further research.

This study is also limited by the use of a self-selected sample; although this was deemed the most appropriate mode of recruitment, it further adds to the potential for bias. Finally, it is important to recognise that only one of the Trusts sampled had widely delivered CFT-based training to their employees, and interestingly this Trust was found to have lower levels of compassion and higher levels of stress symptoms than the other two Trusts. One interpretation of this is that there may have been misunderstanding of the concept of compassion- it is not possible to know whether different participants were interpreting compassion in the same way. It may also be that participants who had undertaken training in the CFT model had a greater understanding, or were less naïve/more honest about the challenges to compassion, and thus reported less compassion. It will be important for future research to try and untangle these findings by specifically measuring the effect of knowledge and training in compassion and the CFT model.

Conclusions and implications for practice and future research

Despite its limitations, this study appears to be the first of its kind which incorporates each aspect of the flow of compassion; to the self, to others, and from others to the self, with threat. In addition, it has given strength to the idea that compassion is a systemic issue, to be tackled at all levels of the NHS and not just within individual employees. At present, the focus of most interventions available for healthcare professionals is on managing or reducing stress (e.g. Irving, Dobkin & Park, 2009). Whilst these may be effective for stress management (Irving et al., 2009) the findings of the present study suggest that these interventions may not be the most efficient way to maintain or promote compassion for others within healthcare. Given the current drive for service-users to “receive effective care from caring, compassionate and committed staff, working within a common culture” (Mid Staffordshire NHS Foundation Trust Public Inquiry, 2013) it will be important to consider the role of self-compassion and perceived organisational compassion in the development of staff interventions. This may involve the use of interventions based on CFT (Gilbert, 2009), and importantly should involve all individuals within the organisation, in line with Gilbert’s idea of the flow of compassion. It will also be necessary for future research to begin to explore the use of any alternative interventions for healthcare professionals, and to assess their efficacy. Finally, this study has also highlighted the threats and troubles most important to the individuals who took part. Whilst issues of overload or change may be less controllable due to the external pressures placed on the NHS, the results of the thematic analysis reveal that improvements in communication, in leadership, and in involving individuals in decisions could make a real difference. These are improvements that can be made from within the organisation, and should be considered alongside interventions, training and service development plans.

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Part three
Appendices

Appendix A: Reflective Statement

As I begin to write this statement, I am struck by the range of emotions and experiences that have been a part of producing this thesis over the last three years. I hope that my reflections on this process will give the reader an insight into this journey, including its challenges and achievements, its ups and downs. However, I have also gained a wealth of knowledge during this time - both about the research and about myself – and I hope that this statement will also serve as a reminder for myself in years to come.

Background and topic choice

With a piece of work this large it is hard to decide exactly where the start line was, but for me I believe the journey began at the fourth year research fair, where internal and external supervisors first present their ideas for thesis projects. I don't think you would exactly call it a 'flying start' – I remember feeling quite uninspired by the ideas presented and this left me feeling disappointed. Fortunately, one of the presenters had not been able to go, but had left a list of their interests and an email address. When I first met with Ashleigh (who later went on to become my field supervisor) to talk through ideas, it was clear that we would be able to find a project that might interest us both.

I found myself particularly drawn to ideas around healthcare professionals and their well-being, or their ability/need to tolerate distress and suffering in others. Prior to starting the Doctorate course I had been working on a mental health ward where I encountered frequent and high levels of risk and self-harm. After leaving my job there to start the course, I had opportunity to reflect on my experiences. I noticed how fearful and hypervigilant myself and other staff members could become after a succession of challenging shifts, but also how this led to frustration and irritability towards others. I was intrigued to find a way to understand these experiences, but also how to improve situations such as these, and to explore the impact of these experiences on service-users' care. This is almost certainly where my passion for the CFT model began. It is now clear to

me that my experiences and motivations prior to starting the course were largely driven by the Threat and the Drive system. What took longer for me to realise was how little compassion I had allowed myself, and how under-developed my Affiliative system was. However, when starting the course I had really held on to a message that Peter Oakes had given us – that it is okay to self-care. I will come back to this point later.

Once Tim and Philip had also joined the research project, we were able to talk through ideas and to really hone in on a topic. At times I found this stressful – I was attempting to get my head around a new theory whilst trying to ensure that I held on to the ideas and ponderings that had been important to me, in amongst the ideas of three supervisors. Although initially stressful, I now feel incredibly lucky to have three supervisors working alongside me on this project, and I hope that each was (and is) as excited about the final research question as I was. Looking back, I realise how important it was for me to play a key role in the development of the research question. Perhaps my lack of enthusiasm at the research fair also demonstrated this – I needed to feel like the project was my own and that I had really been a part of its development. From that point onwards I felt incredibly excited about the project and was keen to share my idea with others. Of course, there were times when this excitement lay hiding, but with the help of others it has never managed to run too far.

Design and data analysis

The first point at which my excitement waivered was during the decision-making process between quantitative and qualitative methodologies. If you have read the rest of my thesis and not skipped straight ahead to this, you will know that I did in fact use both, albeit with great reluctance at first. I have always been clear that I enjoy mathematics, and that if I had the choice I would choose a gigantic and complicated spreadsheet over a pile of transcripts. This thesis, however, has been a turning point. I knew (quite realistically) that I would need to use a quantitative methodology if I was to remain enthusiastic and excited about the project from start to finish. After designing the

study and the research questions around a quantitative methodology, I was frustrated to gain feedback from peers at a research proposal presentation suggesting that I should also consider including a qualitative component. Although frustrated, I was not surprised. I remember talking with a peer beforehand about how I was desperately hoping nobody would pick up on the need for qualitative analysis. Reluctantly, I included the free response box in order to gain a greater depth of data relating to occupational stressors. My reluctance continued, I'm embarrassed to say, right up until the point of analysis. I was sat in front of the printed data with a highlighter pen for quite some time, having not made a single mark on the page. I was overwhelmed. I had expected maybe five or ten participants to use the box for comments – I had no idea that over two-hundred healthcare professionals would dedicate yet more of their precious time to write so much and with such honesty. Once I had read through each and every comment I felt able to chuck myself into the analysis. I had been truly moved by the comments and felt a desire to do them justice and to give the analysis my best shot. I do not get this from statistics. For me, having the combination of both qualitative and quantitative analyses has been incredibly rewarding, and I am grateful to my supervisors for continuing to encourage the inclusion of both despite my reluctance. I am yet more grateful to the participants who made use of the free response box, without whom I'd have had nothing to highlight!

Needless to say, I enjoyed the statistical analysis as much as I thought I would. I have found that statistics, in common with qualitative analysis, has a flexible end-point. Consequently, I found myself often carrying out further analysis 'just out of curiosity', which is of course another way of saying 'just as a means of avoiding the next stage'...

...The next stage: Writing up

I think if I had to pinpoint any aspect of the entire project as being the most challenging, it would be the writing-up. As yet, I haven't figured out why this is. My guess would be that it is the stage I currently most engrossed in and so is at the forefront of my mind. I hadn't anticipated that the

writing itself would be so difficult. I had heard previous trainees talking of huge hurdles during the application for ethical approval, or speaking of real difficulties recruiting enough participants, but none of the trainees I'd spoken to had mentioned difficulty in writing-up. I wonder now whether this is because they were so busy writing-up that they weren't around to speak about the process. I certainly feel that this stage of the project has been the biggest challenge to my attempts at keeping a balance between work and play. Throughout this stage I have been aware of the approaching deadline, and whilst at times I have felt ahead of schedule, at other times I've felt like I'm falling behind. I have also been very aware of the impact that this might have on my supervisors, and have used this when necessary to drive me to keep going.

Making connections

Another big motivator has been the excitement and interest of others. From early on in the project my supervisors have been key in establishing connections. I have received emails from interested individuals asking to be kept in the loop about the project and its findings, or wishing to use the findings as a basis for service delivery and planning. On occasion, these emails have felt like extra work I am striving to keep up with, but on the whole they have served as a real reminder of how exciting this project can be, and the need to do as much with the research as I can, while I have the chance. Similarly, despite being anxiety-provoking, I have made use of every opportunity given to present my research. Receiving 2nd prize for the poster I presented at The International Conference on Compassion Focussed Therapy showed me that this research is not just a thesis, but is also able to add to the literature base and to be useful in clinical practice. This realisation was exaggerated when I was invited to present the findings of my research to one of the NHS Trusts involved, who had decided to set up a Trust-wide event in an attempt to integrate the CFT model into the organisation. Without the excitement of others, and the sense that the project has meaning, I suspect I would have had more difficulty maintaining my motivation to complete this thesis.

Systematic literature review

The excitement about my empirical paper has at times been to the detriment of my systematic literature review (SLR). During sixth year I decided that my original idea might be ‘too easy’ or ‘not interesting enough’ in comparison to my empirical paper. I proceeded to search for alternative ideas but to no avail. I finally came across an idea that I felt would be exciting and that would be possible within the time available – only to realise that after nearly six months of searching for alternative ideas, I had settled once again on the idea that I had proposed almost a year previous. As you might imagine, this was incredibly frustrating at the time and left me feeling that I had wasted precious time. On reflection, however, this was an important process and without it I’d likely not be feeling motivated or excited to complete the SLR at all. After this initial period of avoidance, I found that I was able to throw myself into the SLR reasonably well and found that breaking the overwhelming task down into smaller manageable chunks was much easier. In contrast to the empirical paper, I found the writing-up the most enjoyable stage of SLR and revelled in the opportunity to really critique and understand the literature.

“It is okay to self-care”

As I mentioned earlier, in addition to reflecting on what I have learnt about my approach to research, I have also gained knowledge about myself in the process. What I hope most to hold on to is the improvements that I have made in self-compassion, and my ever-increasing belief that it is “okay to self-care”. In writing this statement I have been able to reflect on the difference between how I am now, and how I was during the final stage of my undergraduate dissertation. Myself, and those closest to me, have been struck by the parallels between this research and other areas of my life. In researching compassion, and perhaps with most focus on self-compassion, I have been better able to understand and embrace the importance of looking after yourself and have strived to develop and maintain this throughout the three years. Likewise, my need to embrace self-care and to find a healthier way of relating to myself has undoubtedly also

shaped this thesis research. During the most challenging times I have felt compelled to 'do things differently' and have encouraged myself to go for a walk or to spend time with my horse, instead of immediately delving deeper into the challenge and becoming lost in work. However, in being kinder to myself and less self-critical, I have also been able to find the courage to tackle these challenges without feeling overwhelmed with emotion. This, I believe, has been an absolutely vital step forwards and has meant that this entire process has remained bearable, manageable and most of all enjoyable.

The future

Although it is fast-approaching, I visualise the hand-in date as a milestone rather than a finish line. I am keen to take forward the things that I have learnt about myself, but am also keen to continue to disseminate this research. I am also greatly excited about the prospect of further research in this field and projects yet to come. Here are a few of the pointers that I would like myself to look back on when tackling these new projects:

- *Excitement! Feeling excited about the research is absolutely key to my motivation and drive to complete the research to the best of my abilities. If excitement does not come to you – go find it!*
- *Support – Having the support of others has been vital for maintaining my motivation and excitement, but also for having somewhere to moan and to panic, without judgement.*
- *Self-care – it's okay! Being compassionate to yourself makes the world of difference.*

Appendix B: Author guidelines for submission to Mindfulness

EDITORIAL PROCEDURE

Double-blind peer review

This journal follows a double-blind reviewing procedure. Authors are therefore requested to submit:

- A blinded manuscript without any author names and affiliations in the text or on the title page. Self-identifying citations and references in the article text should be avoided.
- A separate title page, containing title, all author names, affiliations, and the contact information of the corresponding author. Any acknowledgements, disclosures, or funding information should also be included on this page.

MANUSCRIPT SUBMISSION

Manuscript Submission

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

Permissions

Authors wishing to include figures, tables, or text passages that have already been published elsewhere are required to obtain permission from the copyright owner(s) for both the print and online format and to include evidence that such permission has been granted when submitting their papers. Any material received without such evidence will be assumed to originate from the authors.

Online Submission

Please follow the hyperlink “Submit online” on the right and upload all of your manuscript files following the instructions given on the screen.

TITLE PAGE

Title Page

The title page should include:

- The name(s) of the author(s)

- A concise and informative title
- The affiliation(s) and address(es) of the author(s)
- The e-mail address, telephone and fax numbers of the corresponding author

Abstract

Please provide an abstract of 150 to 250 words. The abstract should not contain any undefined abbreviations or unspecified references.

Keywords

Please provide 4 to 6 keywords which can be used for indexing purposes.

TEXT

Text Formatting

Manuscripts should be submitted in Word.

- Use a normal, plain font (e.g., 10-point Times Roman) for text.
- Use italics for emphasis.
- Use the automatic page numbering function to number the pages.
- Do not use field functions.
- Use tab stops or other commands for indents, not the space bar.
- Use the table function, not spreadsheets, to make tables.
- Use the equation editor or MathType for equations.
- Save your file in docx format (Word 2007 or higher) or doc format (older Word versions).

Manuscripts with mathematical content can also be submitted in LaTeX.

- LaTeX macro package (zip, 182 kB)

Headings

Please use no more than three levels of displayed headings.

Abbreviations

Abbreviations should be defined at first mention and used consistently thereafter.

Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and

they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data).

Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes.

Acknowledgments

Acknowledgments of people, grants, funds, etc. should be placed in a separate section on the title page. The names of funding organizations should be written in full.

TERMINOLOGY

- Please always use internationally accepted signs and symbols for units (SI units).

SCIENTIFIC STYLE

- Generic names of drugs and pesticides are preferred; if trade names are used, the generic name should be given at first mention.

- Please use the standard mathematical notation for formulae, symbols etc.:

Italic for single letters that denote mathematical constants, variables, and unknown quantities

Roman/upright for numerals, operators, and punctuation, and commonly defined functions or abbreviations, e.g., cos, det, e or exp, lim, log, max, min, sin, tan, d (for derivative)

Bold for vectors, tensors, and matrices.

REFERENCES

Citation

Cite references in the text by name and year in parentheses. Some examples:

- Negotiation research spans many disciplines (Thompson 1990).
- This result was later contradicted by Becker and Seligman (1996).
- This effect has been widely studied (Abbott 1991; Barakat et al. 1995; Kelso and Smith 1998; Medvec et al. 1999).

Reference list

The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications and unpublished works should only be mentioned in the text. Do not use footnotes or endnotes as a substitute for a reference list.

Reference list entries should be alphabetized by the last names of the first author of each work.

- Journal article
Harris, M., Karper, E., Stacks, G., Hoffman, D., DeNiro, R., Cruz, P., et al. (2001).
Writing labs and the Hollywood connection. *Journal of Film Writing*, 44(3), 213–245.
- Article by DOI
Slifka, M. K., & Whitton, J. L. (2000) Clinical implications of dysregulated cytokine
production. *Journal of Molecular Medicine*, doi:10.1007/s001090000086
- Book
Calfee, R. C., & Valencia, R. R. (1991). *APA guide to preparing manuscripts for journal
publication*. Washington, DC: American Psychological Association.
- Book chapter
O’Neil, J. M., & Egan, J. (1992). Men’s and women’s gender role journeys: Metaphor
for healing, transition, and transformation. In B. R. Wainrib (Ed.), *Gender issues across
the life cycle* (pp. 107–123). New York: Springer.
- Online document
Abou-Allaban, Y., Dell, M. L., Greenberg, W., Lomax, J., Peteet, J., Torres, M., &
Cowell, V. (2006). Religious/spiritual commitments and psychiatric practice. Resource
document. American Psychiatric Association.
http://www.psych.org/edu/other_res/lib_archives/archives/200604.pdf. Accessed 25
June 2007.

Journal names and book titles should be italicized.

For authors using EndNote, Springer provides an output style that supports the formatting of in-text citations and reference list.

- EndNote style (zip, 3 kB)

ARTICLE LENGTH

"The average article length is approximately 30 manuscript pages. For manuscripts exceeding the standard 30 pages, authors should contact the Editor in Chief, Nirbhay N. Singh directly at nirbsingh52@aol.com."

TABLES

- All tables are to be numbered using Arabic numerals.
- Tables should always be cited in text in consecutive numerical order.

- For each table, please supply a table caption (title) explaining the components of the table.
- Identify any previously published material by giving the original source in the form of a reference at the end of the table caption.
- Footnotes to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data) and included beneath the table body.

ARTWORK AND ILLUSTRATIONS GUIDELINES

Electronic Figure Submission

- Supply all figures electronically.
- Indicate what graphics program was used to create the artwork.
- For vector graphics, the preferred format is EPS; for halftones, please use TIFF format. MSOffice files are also acceptable.
- Vector graphics containing fonts must have the fonts embedded in the files.
- Name your figure files with "Fig" and the figure number, e.g., Fig1.eps.

Line Art

- Definition: Black and white graphic with no shading.
- Do not use faint lines and/or lettering and check that all lines and lettering within the figures are legible at final size.
- All lines should be at least 0.1 mm (0.3 pt) wide.
- Scanned line drawings and line drawings in bitmap format should have a minimum resolution of 1200 dpi.
- Vector graphics containing fonts must have the fonts embedded in the files.

Combination Art

- Definition: a combination of halftone and line art, e.g., halftones containing line drawing, extensive lettering, color diagrams, etc.
- Combination artwork should have a minimum resolution of 600 dpi.

Color Art

- Color art is free of charge for online publication.
- If black and white will be shown in the print version, make sure that the main information will still be visible. Many colors are not distinguishable from one another when converted

to black and white. A simple way to check this is to make a xerographic copy to see if the necessary distinctions between the different colors are still apparent.

- If the figures will be printed in black and white, do not refer to color in the captions.
- Color illustrations should be submitted as RGB (8 bits per channel).

Figure Lettering

- To add lettering, it is best to use Helvetica or Arial (sans serif fonts).
- Keep lettering consistently sized throughout your final-sized artwork, usually about 2–3 mm (8–12 pt).
- Variance of type size within an illustration should be minimal, e.g., do not use 8-pt type on an axis and 20-pt type for the axis label.
- Avoid effects such as shading, outline letters, etc.
- Do not include titles or captions within your illustrations.

Figure Numbering

- All figures are to be numbered using Arabic numerals.
- Figures should always be cited in text in consecutive numerical order.
- Figure parts should be denoted by lowercase letters (a, b, c, etc.).
- If an appendix appears in your article and it contains one or more figures, continue the consecutive numbering of the main text. Do not number the appendix figures, "A1, A2, A3, etc." Figures in online appendices (Electronic Supplementary Material) should, however, be numbered separately.

Figure Captions

- Each figure should have a concise caption describing accurately what the figure depicts. Include the captions in the text file of the manuscript, not in the figure file.
- Figure captions begin with the term **Fig.** in bold type, followed by the figure number, also in bold type.
- No punctuation is to be included after the number, nor is any punctuation to be placed at the end of the caption.
- Identify all elements found in the figure in the figure caption; and use boxes, circles, etc., as coordinate points in graphs.
- Identify previously published material by giving the original source in the form of a reference citation at the end of the figure caption.

Figure Placement and Size

- Figures should be submitted separately from the text, if possible.
- When preparing your figures, size figures to fit in the column width.
- For most journals the figures should be 39 mm, 84 mm, 129 mm, or 174 mm wide and not higher than 234 mm.
- For books and book-sized journals, the figures should be 80 mm or 122 mm wide and not higher than 198 mm.

Permissions

If you include figures that have already been published elsewhere, you must obtain permission from the copyright owner(s) for both the print and online format. Please be aware that some publishers do not grant electronic rights for free and that Springer will not be able to refund any costs that may have occurred to receive these permissions. In such cases, material from other sources should be used.

Accessibility

In order to give people of all abilities and disabilities access to the content of your figures, please make sure that

- All figures have descriptive captions (blind users could then use a text-to-speech software or a text-to-Braille hardware)
- Patterns are used instead of or in addition to colors for conveying information (colorblind users would then be able to distinguish the visual elements)
- Any figure lettering has a contrast ratio of at least 4.5:1

INTEGRITY OF RESEARCH AND REPORTING

Ethical standards

Manuscripts submitted for publication must contain a statement to the effect that all human and animal studies have been approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. It should also be stated clearly in the text that all persons gave their informed consent prior to their inclusion in the study. Details that might disclose the identity of the subjects under study should be omitted. These statements should be added in a separate section before the reference list. If these statements are not applicable, authors should state: The manuscript does not contain clinical studies or patient data. The editors reserve the right to reject manuscripts that do not comply with the above-mentioned requirements. The author will be held responsible for false statements or failure to fulfill the above-mentioned requirements

Conflict of interest

Authors must indicate whether or not they have a financial relationship with the organization that sponsored the research. This note should be added in a separate section before the reference list. If no conflict exists, authors should state: The authors declare that they have no conflict of interest.

COMPLIANCE WITH ETHICAL STANDARDS

To ensure objectivity and transparency in research and to ensure that accepted principles of ethical and professional conduct have been followed, authors should include information regarding sources of funding, potential conflicts of interest (financial or non-financial), informed consent if the research involved human participants, and a statement on welfare of animals if the research involved animals.

Authors should include the following statements (if applicable) in a separate section entitled “Compliance with Ethical Standards” on the title page when submitting a paper:

- Disclosure of potential conflicts of interest
- Research involving Human Participants and/or Animals
- Informed consent

Please note that standards could vary slightly per journal dependent on their peer review policies (i.e. double blind peer review) as well as per journal subject discipline. Before submitting your article check the Instructions for Authors carefully.

The corresponding author should be prepared to collect documentation of compliance with ethical standards and send if requested during peer review or after publication.

The Editors reserve the right to reject manuscripts that do not comply with the above-mentioned guidelines. The author will be held responsible for false statements or failure to fulfill the above-mentioned guidelines.

DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

Authors must disclose all relationships or interests that could influence or bias the work. Although an author may not feel there are conflicts, disclosure of relationships and interests affords a more transparent process, leading to an accurate and objective assessment of the work. Awareness of real or perceived conflicts of interests is a perspective to which the readers are entitled and is not meant to imply that a financial relationship with an organization that sponsored the research or compensation for consultancy work is inappropriate. Examples of potential conflicts of interests **that are directly or indirectly related to the research** may include but are not limited to the following:

- Research grants from funding agencies (please give the research funder and the grant number)
- Honoraria for speaking at symposia
- Financial support for attending symposia
- Financial support for educational programs
- Employment or consultation
- Support from a project sponsor
- Position on advisory board or board of directors or other type of management relationships
- Multiple affiliations
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In addition, interests that go beyond financial interests and compensation (non-financial interests) that may be important to readers should be disclosed. These may include but are not limited to personal relationships or competing interests directly or indirectly tied to this research, or professional interests or personal beliefs that may influence your research.

The corresponding author collects the conflict of interest disclosure forms from all authors. In author collaborations where formal agreements for representation allow it, it is sufficient for the corresponding author to sign the disclosure form on behalf of all authors. Examples of forms can be found

- here:

The corresponding author will include a summary statement **on the title page that is separate from their manuscript**, that reflects what is recorded in the potential conflict of interest disclosure form(s).

See below examples of disclosures:

Funding: This study was funded by X (grant number X).

Conflict of Interest: Author A has received research grants from Company A. Author B has received a speaker honorarium from Company X and owns stock in Company Y. Author C is a member of committee Z.

If no conflict exists, the authors should state:

Conflict of Interest: The authors declare that they have no conflict of interest.

RESEARCH INVOLVING HUMAN PARTICIPANTS AND/OR ANIMALS

1) Statement of human rights

When reporting studies that involve human participants, authors should include a statement that the studies have been approved by the appropriate institutional and/or national research ethics committee and have been performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

If doubt exists whether the research was conducted in accordance with the 1964 Helsinki Declaration or comparable standards, the authors must explain the reasons for their approach, and demonstrate that the independent ethics committee or institutional review board explicitly approved the doubtful aspects of the study.

The following statements should be included in the text before the References section:

Ethical approval: “All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.”

For retrospective studies, please add the following sentence:

“For this type of study formal consent is not required.”

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The welfare of animals used for research must be respected. When reporting experiments on animals, authors should indicate whether the international, national, and/or institutional guidelines for the care and use of animals have been followed, and that the studies have been approved by a research ethics committee at the institution or practice at which the studies were conducted (where such a committee exists).

For studies with animals, the following statement should be included in the text before the References section:

Ethical approval: “All applicable international, national, and/or institutional guidelines for the care and use of animals were followed.”

If applicable (where such a committee exists): “All procedures performed in studies involving animals were in accordance with the ethical standards of the institution or practice at which the studies were conducted.”

If articles do not contain studies with human participants or animals by any of the authors, please select one of the following statements:

“This article does not contain any studies with human participants performed by any of the authors.”

“This article does not contain any studies with animals performed by any of the authors.”

“This article does not contain any studies with human participants or animals performed by any of the authors.”

INFORMED CONSENT

All individuals have individual rights that are not to be infringed. Individual participants in studies have, for example, the right to decide what happens to the (identifiable) personal data gathered, to what they have said during a study or an interview, as well as to any photograph that was taken. Hence it is important that all participants gave their informed consent in writing prior to inclusion in the study. Identifying details (names, dates of birth, identity numbers and other information) of the participants that were studied should not be published in written descriptions, photographs, and genetic profiles unless the information is essential for scientific purposes and the participant (or parent or guardian if the participant is incapable) gave written informed consent for publication. Complete anonymity is difficult to achieve in some cases, and informed consent should be obtained if there is any doubt. For example, masking the eye region in photographs of participants is inadequate protection of anonymity. If identifying characteristics are altered to protect anonymity, such as in genetic profiles, authors should provide assurance that alterations do not distort scientific meaning.

The following statement should be included:

Informed consent: “Informed consent was obtained from all individual participants included in the study.”

If identifying information about participants is available in the article, the following statement should be included:

“Additional informed consent was obtained from all individual participants for whom identifying information is included in this article.”

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Appendix C: Data extraction form

General	
Author(s)	
Year of Publication	
Title of Study	
Peer Reviewed?	
Research Aims	
Research Design	
Participants	
Gender	
Age	
Profession(s)	
Country	
Sample Size	
Intervention	
Name/title	
Duration	
Mode of Delivery (who? How?)	
Description of content	
Control/Comparison?	
Randomised?	
Outcomes	
Measurement of SC	
Other outcomes/measures	
When measured	
Statistical Analysis	
Main Findings	
Conclusions	
Of Author(s)	
Notes of review	
Quality Score	

Appendix D: Quality checklist

Reporting			
1. Is the hypothesis/aim/objective of the study clearly described?	Yes 1	No 0	
2. Is the main outcome to measure 'self-compassion' clearly described in the Introduction or Methods section?	Yes 1	No 0	
3. Are the characteristics of the participants included in the study clearly described?	Yes 1	No 0	
4. Are the interventions of interest clearly described?	Yes 1	No 0	
5. Are the distributions of principal confounders in each group of subjects to be compared clearly described?	Yes 2	Partially 1	No 0
6. Are the main findings of the study relating to 'self-compassion' clearly described?	Yes 1	No 0	
7. Does the study provide estimates of the random variability in the data for the outcomes relating to 'self-compassion'?	Yes 1	No 0	
8. Have actual probability values been reported (e.g. 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001?	Yes 1	No 0	
External Validity			
9. Were the subjects asked to participate in the study representative of the entire population from which they were recruited?	Yes 1	No 0	Unable to determine 0
10. Were those subjects who were prepared to participate representative of the entire population from which they were recruited?	Yes 1	No 0	Unable to determine 0
Internal Validity – Bias			
11. If any of the results of the study were based on "data dredging", was this made clear?	Yes 1	No 0	Unable to determine 0
12. In trials and cohort studies, do the analyses adjust for different lengths of follow-up of participants, or in case-control studies, is the time period between the intervention and outcome the same for cases and controls?	Yes 1	No 0	Unable to determine 0
13. Were the statistical tests used to assess the outcomes related to 'self-compassion' appropriate?	Yes 1	No 0	Unable to determine 0
14. Was compliance with the intervention/s reliable?	Yes 1	No 0	Unable to determine 0
15. Were the main outcome measures used to measure 'self-compassion' accurate (valid and reliable)?	Yes 1	No 0	Unable to determine 0
Internal Validity – Confounding (selection bias)			
16. Were the participants in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited from the same population?	Yes 1	No 0	Unable to determine 0

17. Were study subjects in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited over the same period of time?		Yes 1	No 0	Unable to determine 0	
18. Were study subjects randomised to intervention groups?		Yes 1	No 0	Unable to determine 0	
19. Was there adequate adjustment for confounding in the analyses from which the main 'self-compassion' findings were drawn?		Yes 1	No 0	Unable to determine 0	
20. Were losses of participants to follow-up taken into account?		Yes 1	No 0	Unable to determine 0	
Power					
21. Did the study have sufficient power to detect a clinically important effect where the probability value for a difference being due to chance is less than 5%?					
<n1 0	n1–n2 1	n3-n4 2	n5-n6 3	n7-n8 4	n8 + 5

Appendix E: Quality assessment results

Study	Checklist item																					Total / 26
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Bazarko et al. (2013)	1	1	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	0	1	5	18
Bond et al. (2013)	1	1	0	1	0	1	1	1	0	0	1	1	1	1	1	0	0	0	0	0	5	16
Brooker et al. (2013)	1	1	1	1	2	1	1	0	1	0	1	0	1	0	1	0	0	0	1	0	5	18
Erogul et al. (2014)	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	5	24
Gauthier et al. (2014)	1	1	1	1	2	0	1	1	1	0	1	1	1	0	1	0	0	0	0	0	5	18
Gockel et al. (2013)	1	1	1	1	0	0	0	1	1	0	1	1	1	1	1	1	1	0	0	0	5	18
Marx et al. (2014)	1	1	1	0	1	0	1	1	1	0	1	1	1	0	1	0	0	0	0	1	5	17
Moore (2008)	1	1	1	1	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	1	5	17
Newsome et al. (2012)	1	1	1	1	1	1	1	0	0	0	1	1	1	0	1	0	0	0	0	1	5	17
Pakenham (2014)	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	0	0	0	1	5	19
Rimes et al. (2011)	0	1	1	0	0	1	1	1	0	0	1	1	1	1	1	0	0	0	0	1	5	16
Shapiro et al. (2005)	1	1	1	1	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	5	21
Shapiro et al. (2007)	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	5	23
Stafford-Brown et al. (2012)	1	1	1	1	2	1	1	0	1	0	1	1	1	1	1	1	1	0	1	1	5	23
Wasner et al. (2005)	1	1	1	0	1	1	1	0	1	0	1	1	1	1	0	0	0	0	0	0	5	16

Appendix F: Author guidelines for submission to the British Journal of Psychology

The Editorial Board of the British Journal of Psychology is prepared to consider for publication:

- (a) reports of empirical studies likely to further our understanding of psychology
- (b) critical reviews of the literature
- (c) theoretical contributions Papers will be evaluated by the Editorial Board and referees in terms of scientific merit, readability, and interest to a general readership.

1. Circulation

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

2. Length

Papers should normally be no more than 8000 words (excluding the abstract, reference list, tables and figures), although 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.

3. Submission and reviewing

All manuscripts must be submitted via <http://www.editorialmanager.com/bjp/>. The Journal operates a policy of anonymous peer review. Before submitting, please read the terms and conditions of submission and the declaration of competing interests.

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. A template can be downloaded from [here](#).
- 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 with their approximate locations indicated in the text.
- Figures can be included at the end of the document or attached as separate files, carefully labelled in initial capital/lower case lettering 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 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.
- 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.
- 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.

5. Supporting Information

BJOP is happy to accept articles with supporting information supplied for online only publication. This may include appendices, supplementary figures, sound files, videoclips etc. These will be posted on Wiley Online Library with the article. The print version will have a note indicating that extra material is available online. Please indicate clearly on submission which material is for online only publication. Please note that extra online only material is published as supplied by the author in the same file format and is not copyedited or typeset. Further information about this service can be found at <http://authorservices.wiley.com/bauthor/suppmat.asp>

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8. 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 at http://authorservices.wiley.com/bauthor/english_language.asp. 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.

9. OnlineOpen

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11. The Later Stages

The corresponding author will receive an email alert containing a link to a web site. A working e-mail address must therefore be provided for the corresponding author. 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 web site: <http://www.adobe.com/products/acrobat/readstep2.html>. This will enable the file to be opened, read on screen and annotated direct in the PDF. Corrections can also be supplied by hard copy if preferred. Further instructions will be sent with the proof. Hard copy proofs will be posted if no e-mail address is available. Excessive changes made by the author in the proofs, excluding typesetting errors, will be charged separately.

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Appendix G: Advertisement

Is there a link between stress at work and how compassionate we are? Humber NHS Foundation Trust trainee clinical psychologist Lauren Henshall is conducting a research project and would like clinical professionals and other NHS employees who work directly with service users and patients to take part in an anonymous online survey.

The research is investigating possible links between the presence of occupational stressors and a person's ability to be compassionate to both themselves and other people. The survey also looks at how much support and compassion people receive at work.

The survey will ask you a series of questions concerning possible stressors within the workplace, the degree of support and compassion you receive at work and how able you are to think kindly and compassionately about yourself and others. It should take approximately 30 minutes to complete. For more information and to take part in the online survey please follow this link: <https://www.surveymonkey.com/s/SM2TFWQ>

Appendix H: Participant information sheet

We would like to invite you to take part in a research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. Please read this information carefully. If you have any questions that are not answered below please contact us before continuing.

What is the purpose of the study?

We are investigating the possible links between the presence of occupational stressors and one's ability to give compassion to themselves and others, as well as the degree of support and compassion one receives at work. We are specifically investigating these links within the NHS. The completed project will be submitted as part of the researcher's clinical psychology training course at the University of Hull. In addition, the results will be fed back to Humber NHS Foundation Trust and Derbyshire Healthcare NHS Foundation Trust, who may choose to publish the results in their own publications. It is also hoped that the results will be published in international journals and presented at conferences.

Why have I been invited?

You have been invited to take part because you are an employee of the NHS and you have clinical contact with service-users.

What will I be asked to do?

The anonymous online survey will ask you a series of questions concerning possible stressors within the workplace, the degree of support and compassion you receive at work and how able you are to think kindly and compassionately about yourself and others. It should take approximately 30 minutes to complete. Due to the nature of the study, it is also necessary that you have a sufficient understanding of the English language to complete the questionnaires.

Do I have to take part and what if I change my mind?

No, it's up to you to decide to join the study; no one will know if you decide to take part in the study or not. If you agree to take part you may discontinue at any time by clicking on the 'discontinue' button shown on every page. If you discontinue your responses will not be saved and will not be used in the study. As the data is anonymous, once the survey has been submitted it cannot be withdrawn.

Will my taking part in this study be confidential?

No personally identifiable information will be collected during this study and Survey Monkey will not save your computer's IP address. Therefore, we cannot trace your responses back to you and all data collected will be anonymous. In certain circumstances it may be possible to identify individuals from the demographic details provided (for example, job role, NHS trust and gender). This data will be available to the research team only, and individuals will not be identifiable in publications. If you feel you may be identifiable you can choose not to give details about your occupation by selecting the 'prefer not to say' option in the demographic questionnaire. In the event that a safeguarding issue is raised, or unsafe practice is identified, the researcher will follow this up in accordance with that trust's relevant policies using the information available- Individuals will not be identified in this process.

Potential Risks

Some people may become distressed when completing this survey. If you do, you can discontinue at anytime and your data will not be stored or used in the study. At the end of the survey (or if you decide to discontinue) a screen will be presented containing helpful resources, websites and contact numbers if you feel you need some support or further information.

What are the possible benefits of taking part?

We cannot promise this study will help you but some people may find it helpful to write about current pressures at work, and the survey may also help by directing you to sources of support. The information we obtain from this study may help to understand and improve the support that NHS employees require at present, and how this will affect service-user care.

Can I find out my results or what they mean?

Since data will be collected anonymously we are not able to let you know your scores.

Expenses and payments

You will not be paid for taking part in the study and you cannot claim any expenses.

Who has reviewed this study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. The Faculty of Health and Social Care Ethics Committee at the University of Hull has given a favourable review of the study. This study has also been peer

reviewed by the research team at the Department of Psychological Health and Wellbeing at the University of Hull and is being sponsored by Humber NHS Foundation Trust Research and Development.

Further information and contact details

The research is organised by Lauren Henshall, a Trainee Clinical Psychologist employed by Humber NHS Foundation Trust and training at the University of Hull. If you have a concern about any aspect of this study you should contact her by email: L.Henshall@2012.hull.ac.uk

Appendix I: Participant consent form

To continue with the survey, please tick the buttons to indicate that you agree with the following:

- I have read and understood the information for the study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
- I understand that my participation is voluntary and that I am free to stop at any time without giving any reason and without my employment or legal rights being affected.
- I understand that once I have submitted the survey it is not possible for my answers to be withdrawn since all the data is anonymous.
- I understand that data collected during the study may be looked at by individuals from the University of Hull, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.
- I agree to take part in the study

Appendix J: Participant debriefing page

Thank you for taking part

Please make sure you click 'done' at the bottom of the page to submit your answers.

If you feel you need some support or further information you should speak to your line manager or supervisor in the first instance. Your GP will also be able to help if you would prefer to speak to someone outside of work.

You may also find the following online resources useful:

'Beat stress at work':

<http://www.nhs.uk/Conditions/stress-anxiety-depression/Pages/workplace-stress.aspx>

'Stress, depression and mental health support at work':

<http://www.time-to-change.org.uk/your-organisation/support-workplace>

For further information, or if you have a concern about any aspect of this study, you can contact the researcher using the details below:

Email: L.Henshall@2012.hull.ac.uk

Post: Lauren Henshall, Trainee Clinical Psychologist,
The Dept of Psychological Health and Wellbeing,
Hertford Building,
University of Hull,
Cottingham Road,
Hull, HU6 7RX

Appendix K: Confirmation of ethical approval

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binding**

Appendix L: Demographic Questionnaire

These questions involve information about you, please try to answer all questions honestly.

Please do not give any information which would make you directly identifiable (eg. If you are the only employee with that job title you may need to give a more general title or select the 'prefer not to say' option).

Please indicate your age: _____ years

Please indicate your gender: _____

Please indicate which NHS trust you are employed by: _____

Please indicate your job role/job title (eg. Mental Health Nurse/ GP): _____

For how many years have you worked in the NHS? _____

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Appendix N: Self-Compassion Scale - Short Form

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Appendix O: Compassion Scale

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Appendix P: Compassionate Organizations Quiz

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Appendix Q: Epistemological Statement

This statement seeks to explore and make clear the ontological and epistemological assumptions underlying this thesis and the research methods chosen.

Ontology concerns beliefs about *what* there is to know about the world, whilst epistemology refers to beliefs about *how* we can know and learn about the social world (Snape & Spencer, 2003).

Purists might argue that quantitative and qualitative research methods involve different ontologic and epistemologic assumptions, and therefore that the two approaches should not be mixed (Onwuegbuzi & Leech, 2005).

Quantitative research is most often associated with an ontological stance of 'realism' and with a 'positivist' epistemology (Snape & Spencer, 2003). In line with this, quantitative research methods are often believed to be underpinned by the following beliefs and assumptions. Firstly, that there exists an external reality, independent of one's beliefs or understanding such that beliefs about the world can be distinguished from 'the way the world is' (Snape & Spencer, 2003). Secondly, that the world is independent of and unaffected by the researcher (Snape & Spencer, 2003). Thirdly, that facts are distinct from values and so it is possible to conduct objective enquiry (Snape & Spencer, 2003). Finally, that the empirical research methods used in the natural sciences are equally appropriate for the study of human behaviour, because that too is governed by law-like regularities (Snape & Spencer, 2003).

In contrast, qualitative research is more often associated with an ontological stance of 'relativism', positing that reality can only be known through socially constructed meanings as there is no single shared social reality (Snape & Spencer, 2003). The epistemological stance most attributable to qualitative research is 'interpretivism' which is suggestive of the following assumptions. Firstly, that the social world and the researcher will inevitably impact on each other, making value-free and objective research impossible (Snape & Spencer, 2003). Secondly, that

the world is mediated through meaning and human agency, rather than law-like regularities, and so it is necessary to use both the researcher's and the participant's understandings of the social world (Snape & Spencer, 2003).

Based on the stark differences between the ontological and epistemological assumptions of both quantitative and qualitative methods, it does indeed seem that the two methods would be incompatible. However, Onwuegbuzi and Leech (2005) highlight how this 'purist' view can lead one to overlook the similarities between qualitative and quantitative methodologies. They argue that data reduction, for example, is typically an important process for both quantitative and qualitative researchers and that factors emergent in statistical factor analysis can be considered analogous to themes emerging from thematic analysis (Onwuegbuzi & Leech, 2005). In line with this, 'pragmatists' (as opposed to 'purists') have argued that there is a false dichotomy between the two approaches, and contend that qualitative and quantitative methods can co-exist within a single research study. Onwuegbuzi and Leech (2005) describe how the pragmatist philosophy states that the research questions should drive the methods used, and that being able to combine methods when appropriate has a myriad of advantages.

With regards to this thesis research and my own epistemological stance, I believe I hold this 'pragmatic' view to research, and do not fully ascribe to the positivist nor the interpretivist position. I would say that this is also echoed in my beliefs as a Clinical Psychologist, but also in my own beliefs about the world more generally. In accordance, when choosing a research method for the current study I was keen to remain flexible to the techniques available to me, whilst also being aware of the time limitations and of my own strengths and weaknesses as a researcher. Within the empirical study, the main aim of the research was to investigate relationships between threat and compassion for others. This was based in theory, but also felt exploratory in nature, having not been researched before. As a result, the strengths and weaknesses of both quantitative and qualitative methods were considered, with both being of equal benefit depending on the exact nature of the research aims. However, valuing and seeing the benefit in both quantitative and

qualitative research methods does not necessarily preclude that one will be equally equipped to use each. As I alluded to in the reflective statement (Appendix A) my strengths lay more in statistical analysis, and my interests as a researcher initially lay more in the positivist tradition-gaining an understanding of a larger number of individuals, perhaps at the expense of depth of understanding. As such, a quantitative method was chosen in the knowledge that I would need to use a research method that could sustain my motivation and interest for the three years.

Not being fully affiliated to the 'positivist' perspective, however, has ensured that throughout the research I have been open to the idea that I am not measuring 'the truth'. For example, whilst I believe that questionnaires may be partially objective, I would conceive that the interpretation of any questionnaire is subject to the individual participant's perspective, whilst the researcher who initially developed that questionnaire cannot have done so without their own beliefs and perspectives impacting on it also. In line with this, it felt necessary to include a qualitative technique alongside the quantitative techniques with regards to the measurement of perceived organisational threat. Within the current study, the qualitative data was considered particularly beneficial in that it served to validate and contextualise the quantitative data, establishing a greater depth of understanding than could have been achieved through quantitative data alone. As the empirical paper involved the mixing of methods, the specific type of qualitative analysis chosen was thematic analysis, which Braun and Clarke (2006) state can be applied across a range of theoretical and epistemological approaches. Thematic analysis can involve either a semantic or a latent level of analysis (Braun & Clarke, 2006). A latent level of analysis involves going beyond what has been reported, for example by analysing further the language used (Braun & Clarke, 2006). In the current study, the aim was only to understand what troubles and threats existed for the participants through their written accounts as part of the online survey, and so a semantic level of analysis was chosen, looking only at what participants reported in order to establish themes. Braun and Clarke (2006) also distinguish between an inductive approach and a deductive approach in the identification of themes. Whilst an inductive approach is led by the data

itself, a deductive approach involves the use of a pre-defined theory or framework to guide the coding stage (Braun & Clarke, 2006). In the current study, the approach was largely deductive as the pre-defined categories from the questionnaire which was used to measure perceived organisational threat were used to initially code the data. This approach was taken as one of the intentions in using qualitative analysis was to validate and contextualise the information gathered via the questionnaire. However, caution was also taken to ensure that the themes were reviewed and revised by two authors a second time, without reference to the pre-existing codes, so that emerging themes which did not fit the original framework were not missed.

In summary, whilst leaning more towards a positivist epistemological position, this thesis is underpinned by a pragmatic viewpoint which emphasises the value of both quantitative and qualitative research methods. The flexible use of both methods has been highlighted as the most useful approach to research (Onwuegbuzie & Leech, 2005) and indeed, the use of mixed methods within this thesis has felt advantageous in gaining a balance of breadth and depth of data.

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