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The effectiveness of self-compassion-focused and  
mindfulness-based interventions in improving the  
emotional wellbeing of mental health professionals: a  
systematic review

and;

The relationships between self-compassion, emotional  
intelligence, depression, anxiety and carer burden in  
family caregivers of individuals with a diagnosis of  
dementia.



THE UNIVERSITY  
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Caroline Jones  
Doctorate in Clinical Psychology  
University of Edinburgh  
March 2020

## DCLinPsychol Declaration of Own Work

**Name:** Caroline Jones

**Title of Work:** Self-compassion and mindfulness-based interventions in improving the emotional wellbeing of mental health professionals; and the relationships between self-compassion, emotional intelligence, depression, anxiety and carer burden in family caregivers of individuals with a diagnosis of dementia.

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## Research Portfolio Abstract

**Objective:** The thesis had two objectives. The first was to examine the effectiveness of self-compassion-focused and mindfulness-based interventions in improving the emotional wellbeing of mental health professionals. A systematic review aimed to provide a comprehensive and updated critical examination of the available literature. The second objective was to examine the relationships between carer burden, self-compassion, emotional intelligence, depression and anxiety in family caregivers of individuals with a diagnosis of diagnosis. The empirical study also aimed to identify any potential protective mechanisms of self-compassion and emotional intelligence on the impact of carer burden.

**Method:** To address the first research objective, electronic databases were systematically searched to identify appropriate studies and a quality assessment was undertaken. An independent reviewer assessed the quality of seven papers. To address the second research objective, a cross-sectional study was conducted and participants ( $N = 164$ ) completed five online questionnaires examining carer burden, depression, anxiety, emotional intelligence and self-compassion.

**Results:** In the systematic review, 22 studies comprising 1015 participants met the eligibility criteria to be included in the review. Quality appraisal highlighted several limitations in the studies. There was relatively strong evidence for the effectiveness of both self-compassion and mindfulness-based therapies on multiple measures of emotional wellbeing. There was mixed evidence for the sustained benefits when using longer-term follow-up periods. In the empirical project, higher carer burden was associated with and predicted lower levels of depression and anxiety in family carers of individuals with dementia. Higher self-compassion and emotional intelligence were also associated and predicted lower levels of depression and anxiety. Self-compassion and emotional intelligence did not moderate the relationships between carer burden and depression and anxiety.

**Conclusions:** The findings of the review suggest evidence that self-compassion-focused and mindfulness-based interventions are effective in improving emotional wellbeing in mental health professionals, although methodological weaknesses need to be taken into consideration. Further research is required to establish the evidence base on this topic, in particular longitudinal studies. The empirical study provided evidence that self-compassion and emotional intelligence can predict mental health symptoms in a sample of participants experiencing high levels of carer burden. This suggest that individual differences are important to consider when evaluating resilience in this population. Additional research is required to better understand the interactions between these variables in family caregivers.

**Note:**

The overall aim of this thesis was to examine emotional wellbeing in both professionals who work in mental health settings and in informal family caregivers. Due to the increasing amount of research into the constructs of self-compassion and emotional intelligence, the empirical study examined these factors, and their relationships with depression, anxiety and carer burden in a sample of family caregivers of individuals with a diagnosis of dementia. Due to the limited number of research studies examining these factors in family carergivers, a systematic review was not warranted. As such, the systematic review aimed to highlight the needs of 'professional carers' by examining the effectiveness of self-compassion and mindfulness-based in mental health professionals. Overall, the thesis aims to further the research into self-compassion, mindfulness and emotional intelligence, emotional wellbeing in both family and professional caregivers.

## Lay Summary

This thesis looked at emotional wellbeing in both professionals that work in mental health settings (e.g., Psychologists) and family carers of individuals with a diagnosis of dementia.

Mental health professionals can experience poor emotional wellbeing, such as symptoms of depression and burnout. The first chapter of this thesis reviewed published research to help to understand if self-compassion-focused and mindfulness-based therapies improve emotional wellbeing in mental health staff.

Self-compassion is defined as recognising and responding non-judgementally to one's own internal pain, by offering self-kindness and acknowledgement that these experiences are part of universal human experience. Mindfulness is defined as attending to the present moment non-judgementally and with curiosity and acceptance. Psychological therapies have been developed using self-compassion and mindfulness-based skills as a basis for intervention. There has been an increasing amount of research looking into self-compassion and mindfulness-based psychological therapies in improving emotional wellbeing. This review suggests promising results for these therapies, however some of the studies included in the review are not of high quality, meaning it is difficult to have confidence in the strength of their conclusions.

Family caregivers can also experience poor emotional wellbeing, related to the carer burden they experience when caring for a relative. Carer burden is a phrase to describe the stress and strain experienced by family caregivers because of the associated responsibilities of their caring role. To explore emotional wellbeing in family caregivers of individuals with dementia, 164 people completed five questionnaires examining self-compassion, emotional intelligence, depression, anxiety and carer burden. Emotional intelligence is defined as the expression, understanding and judgment of emotions in oneself and in others. Depression can mean experiencing symptoms of unhappiness, hopelessness and having negative

thoughts. Anxiety can mean experiencing restlessness, feeling 'on edge', having many worries and physical sensations like trembling.

The results of the study showed that family caregivers with higher levels of self-compassion and emotional intelligence experienced less anxiety and depression. Higher levels of carer burden are associated with higher levels of anxiety and depression. Despite this, the results show that neither self-compassion nor emotional intelligence affect the strength of the relationships between carer burden and depression and anxiety.

Overall, the results of the thesis highlight the importance of considering and understanding emotional wellbeing in both professional and family caregivers. The research suggests that self-compassion and mindfulness-based approaches can be helpful in improving the emotional wellbeing in mental health professionals. Further research is needed to examine the relationships between and impact of self-compassion and emotional intelligence in family caregivers of individuals with dementia.

## Chapter 1: Systematic Review

The effectiveness of self-compassion-focused and mindfulness-based interventions in improving the emotional wellbeing of mental health professionals: a systematic review

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## Abstract

**Objective:** There has been myriad of previous research focusing on the emotional wellbeing of health professionals, including mental health staff. In recent years, there has been mounting evidence for the effectiveness of self-compassion and mindfulness-based interventions, and a recent systematic review specifically examined the effectiveness of these therapies in improving the emotional wellbeing of mental health professionals. Due to limitations in that review, as well as more recent relevant research, the present systematic review was conducted with the aim to provide a more comprehensive and updated critical examination of the available literature on evaluating the effectiveness of self-compassion and mindfulness-based therapies for mental health professionals.

**Method:** Electronic databases (EMBASE, Medline, PsycINFO, Web of Science) were systematically searched to identify appropriate studies. A quality assessment was undertaken. An independent reviewer assessed the quality of 7 papers.

**Results:** 22 studies comprising 1015 participants in total met the eligibility criteria. Of these 22, 8 studies used a control group, 3 studies examined compassion-based interventions, 13 studies examined mindfulness-based interventions and 6 studies included aspects of both compassion and mindfulness. Quality appraisal highlighted several limitations in the studies. There was relatively strong evidence for the effectiveness of both self-compassion and mindfulness-based therapies on multiple measures of emotional wellbeing. There was mixed evidence for the sustained benefits when using longer-term follow-up periods.

**Conclusion:** The findings of this review suggest that self-compassion-focused and mindfulness-based interventions are moderately effective in improving emotional wellbeing in mental health professionals. Further research is required to establish the evidence base, in particular with longitudinal studies.

**Key words:** Self-Compassion, Mindfulness, systematic review, mental health professionals, emotional wellbeing

### Abbreviations

ACT	Acceptance and Commitment Therapy
CFT	Compassion-focused Therapy
CMT	Compassionate Mind Training
DBR	Dialectical Behavioural Therapy
MBCT	Mindfulness-based Cognitive Therapy
MBSR	Mindfulness- based Stress Reduction
MSC	Mindful Self-Compassion

## 1. Introduction

Poor emotional wellbeing is well documented in mental health professionals (Smith & Moss, 2009; Pakenham & Stafford-Brown, 2012). Emotional wellbeing can be understood as the subjective experience of emotions (Charles, 2010) and positive or negative affect i.e. mood (Schutte *et al.*, 2002). A facet of emotional wellbeing relevant in this population is 'burnout' resulting from workplace stress that has not been successfully managed (World Health Organisation, 2019). Symptoms of burnout include emotional exhaustion, feelings of cynicism and depersonalisation (Koutsimani *et al.*, 2019). A review of the presence of burnout in mental health professionals found that 21-67% experience high levels of burnout (Morse *et al.*, 2012). The sequelae of burnout have been associated with depression, anxiety, sleep problems, somatic symptoms and alcohol use (Morse *et al.*, 2012). Such symptoms have been related to lower levels of job performance (Taris, 2006) and reduced safety and quality of client care (Johnson *et al.*, 2018).

A survey of National Health Service (NHS) psychotherapists revealed that 48% reported feeling depressed most or all the time in the last week and participants were in the lowest 61-80% of the population for wellbeing scores (New Savoy Partnership, 2016). Likewise, in a sample of counselling psychologists, 62% self-identified as being depressed, with 42% of those with depressive symptoms reporting suicidal ideation (Gilroy *et al.*, 2002).

Poor emotional wellbeing is more common in mental health professionals than other healthcare professionals (Johnson *et al.*, 2018). It has been suggested that feeling an inflated sense of responsibility towards the well-being of clients predicts higher levels of emotional exhaustion (Baldwin-White, 2016). Additional emotional strain can be a consequence of working with clients in distress in a way that is distinct from other health care roles, e.g. exposure to high levels of distress over lengthy periods of times (Moore & Cooper, 1996).

Precursors to burnout and poor mental health in healthcare professionals include compassion fatigue, poor work/life balance, loss of confidence and high workload (Wood & Killion, 2007). Ideally, environmental factors, namely organisational and systemic factors, could be modified to reduce risk of burnout. In a study of organisational factors that predicted burnout in mental health professionals, it was reported that poor team cohesion, longer working life in mental health settings and higher rates of interactions with clients predicted higher levels of burnout (Lasalvia *et al.*, 2009). Helpful colleague relationships, having a high level of control and low job demands are related to mental health professional's wellbeing (Wood *et al.*, 2011). Additional organisational and systemic factors, such as a focus on development of skills and efficiency, are important in the prevention of exhaustion and promotion of job fulfilment in mental health professionals (Thomsen *et al.*, 1999). Likewise, lack of personal development opportunities and lack of human resources supports are detriment to well-being in mental health professionals (Aggarwal & Sriram, 2018).

With the increasing prevalence of burnout and poor emotional wellbeing in mental health professionals and its known impact on client care, it is important to develop personal resilience and coping strategies to buffer the effects of negative environmental and organisational factors that are not so easily changed (Hoffman, 2018).

### ***1.1 Self-compassion and Mindfulness***

Self-compassion and mindfulness are two factors that have been shown to be protective mechanisms in managing stress and building resilience (Raab, 2014). Self-compassion is defined as recognising and responding non-judgementally to one's own internal pain or failures, by offering self-kindness and acknowledgement that these experiences are part of common human suffering (Neff, 2003a). Mindfulness is defined as 'attending to the present moment in time non-judgementally and with curiosity and acceptance' (Segal *et al.*, 2002; Bishop *et al.*, 2004).

It is recognised that mindfulness plays a fundamental part in building and experiencing self-compassion (Neff & Germer, 2012) and both mindfulness and self-compassion require similar skills, such as the ability to have a non-judgemental intrapersonal response to personal experiences and approaching these with curiosity (Raab, 2014). Mindfulness and self-compassion are not synonymous, as mindfulness is used in self-compassion practice to focus on awareness of negative thoughts and emotions whereas general mindfulness refers to awareness of all experiences; positive, negative and neutral (Neff & Germer, 2012). Likewise, there are differences between the intentions of mindfulness and self-compassion (Germer, 2009). Self-compassion focus on soothing the 'self' as the 'experiencer' of thoughts and emotions, whereas mindfulness focuses on observing internal experiences (Germer, 2009). There has been growing interest in the effectiveness of mindfulness-based and self-compassion interventions to improve practitioner wellbeing. A review of the literature highlights that these interventions can increase self-compassion and reduce perceived stress in healthcare professionals (Raab, 2014). It is reported that inclusive leadership styles in the workplace is related to an increased sense of psychological safety (Carmeli *et al.*, 2010)

It is suggested that an increase in self-compassion is the underlying mechanism in the link between the mindfulness interventions and improved psychological health (Sinclair *et al.*, 2017). For example, it has been reported that a mindfulness-based intervention significantly improved self-compassion in a sample of nurses which was correlated with lower levels of perceived stress (Gauthier *et al.*, 2015).

Furthermore, it has been reported that self-compassion mediates the reductions in perceived stress in healthcare professionals following a mindfulness-based stress reduction (MBSR) programme (Shapiro *et al.*, 2005).

It has also been reported that mindfulness mediates the relationship between self-care and well-being in mental health professionals (Richards *et al.*, 2010). This suggests that mindfulness should be an important focus when developing approaches to improve mental health professionals' psychological wellbeing. Given

the links and relevance between these two concepts, interventions that encompass both mechanisms can be evaluated.

### ***1.2 Self-compassion and Mindfulness-based Interventions***

In this area of research, the effectiveness of mindfulness, self-compassion and acceptance-based interventions have been examined to incorporate both constructs (self-compassion and mindfulness) into review (Sinclair *et al.*, 2017). There is a lack of consistency in the research regarding how authors categorise and label the groups of interventions being reviewed (e.g., mindfulness-based approaches vs. compassion-based approaches). The interventions categorised under these terms include the following: compassion-focused therapy (CFT), mindfulness, MBSR, mindfulness-based cognitive therapy (MBCT), mindful self-compassion (MSC), acceptance and commitment therapy (ACT), dialectical behavioural therapy (DBT) and compassionate mind training (CMT) (Sinclair *et al.*, 2017; Rudaz *et al.*, 2017; Wilson *et al.*, 2018).

CFT is an integrated therapy which aims to improve self-compassion by enhancing the ability to self-soothe, reduce self-criticism, and tolerate and regulate emotions (Gilbert, 2009). CFT aims to promote the soothing system to reduce sense of threat and improve the ability to manage negative thoughts and feelings (Gilbert, 2006). Skills training includes imagery, letter writing, self-compassionate meditation and compassionate attention training (Gilbert, 2009). MBSR is an 8-week group-based therapeutic approach to develop mindfulness meditation skills (Kabat-Zinn, 1982). MBCT is also based on MBSR and takes the form of eight weekly therapeutic classes focussed on mindfulness skills, self-kindness and increasing acceptance (Segal, *et al.*, 2002). Similarly, MSC aims to improve self-compassion through mindfulness skills to enable the ability to be compassionate towards oneself (Neff & Germer, 2012).

There are also links between self-compassion and mindfulness-based interventions in ACT and DBT, with both sharing an emphasis on mindfulness skills and promoting a compassionate approach. ACT's six main processes of values and committed

action, acceptance, cognitive diffusion, awareness and self as context (Hayes, 2008) are related to self-compassion (Neff & Tirsch, 2013). Dahl *et al.* (2009) described how ACT processes alter self-compassion by mindfully observing judgmental, shaming, and distressing thoughts without letting them dictate actions. The DBT manualised approach includes exercises to increase self-compassion (Linehan, 1993). It is a skills-based approach with a focus on distress tolerance, mindfulness, interpersonal effectiveness and regulation of emotions. The ability to self-soothe and develop a compassionate attitude is a key component in the exercises (Linehan, 1993), showing that ACT and DBT share similar underlying concepts with the other mindfulness and self-compassion-based approaches.

### ***1.3 Effectiveness of Self-compassion and Mindfulness-based Interventions***

Results from a meta-narrative review of 22 studies have reported that self-compassion interventions can improve general healthcare professionals' wellbeing (Sinclair *et al.*, 2017). Self-compassion-based interventions were defined as CFT, MBSR, MBCT and mindfulness. A range of wellbeing outcome measures were examined such as self-compassion, stress, burnout, depression, anxiety, compassion fatigue, mindfulness, and quality of life. It was reported that higher levels of self-compassion were associated with lower levels of burnout and stress in a heterogeneous group of healthcare professionals, highlighting the theoretical concept that increasing self-compassion should be key target variable in interventions. Most studies reported significant increases in self-compassion and decreases in burnout, stress and depression following intervention. The authors note however that it is not clear from the review whether the interventions are targeting self-compassion or more general emotional wellbeing, particularly since it was difficult to assess subscales of the Self-Compassion Scale. Likewise, the authors highlight that the link between heightened self-compassion and improved compassionate care is not clear, with most research focussing on outcomes on employee's emotional wellbeing.

A systematic review by Rudaz *et al.*, (2017) has examined 25 quantitative research articles regarding the effectiveness of mindfulness-based and acceptance-based

interventions (including MBSR, MBCT, MSC and ACT) for improving psychological health in mental health professionals. Although there was preliminary evidence for the effectiveness of MBSR on stress and mindfulness abilities, there was with less evidence for decreases in burnout and self-compassion. Likewise, mindfulness abilities consistently improved following MBCT; however, stress did not reliably improve. The studies using ACT showed more positive effects on stress and mindfulness and this is supported by the high quality of research (ie. randomised controlled trials) in the ACT studies. The authors note that the differences in results could be understood when considering different in treatment adherence and adaptations to protocol.

In Rudaz *et al.*, (2017) review, 22 studies were selected for inclusion, but nine of these studies are deemed not appropriate for the aims of their review. The nine studies had issues with the following: lack of clarity regarding whether the population samples worked with clients experiencing mental health problems, the use of mixed health professions, the use of college students not engaged in delivering mental health services or who had yet to start placement, and a focus on therapy outcomes rather than psychological health or wellbeing outcomes. As the review aimed to examine the effectiveness of mindfulness-based and acceptance-based interventions specifically on the emotional wellbeing of mental health professionals, these study characteristics introduced an element of doubt on the validity of the conclusions, and warrants another systematic review.

Additionally, there is evidence the review missed some studies (Hallman *et al.*, 2014; Marx *et al.*, 2014) and more studies in this area have been published since the review (Beaumont *et al.*, 2017; Dereix-Calonge *et al.*, 2019; Eriksson *et al.*, 2018; Robins *et al.*, 2019; Suyi *et al.*, 2017; Yang *et al.*, 2018) calling for a more comprehensive and updated review of the literature.

#### **1.4 Review Aims**

The aim of the present review is to provide an updated and more comprehensive critical examination of the available literature in evaluating the effectiveness of self-

compassion and mindfulness-based therapies for mental health professionals. It will extend the previous reviews performed in healthcare professionals (Sinclair *et al.*, 2017) and mental health professionals (Rudaz *et al.*, 2017) by addressing the limitations of the prior reviews and therefore provide a wider picture of the research in this area.

The choice of interventions to include in the present systematic review was guided by the links between the constructs of mindfulness and self-compassion, the evidence that mindfulness and self-compassion skills are not limited to one modality of therapy and by examination of previous reviews. Self-compassion and mindfulness-based interventions were defined based on the two previous reviews described (Sinclair *et al.* 2017 and Rudaz *et al.* 2017), as well as a more recent review on the effectiveness of self-compassion related therapies (Wilson *et al.*, 2019). The three reviews include MBCT, MBSR, ACT, DBT, CFT, MSC, mindfulness and CMT. Likewise, the inclusion of professionals regarded as 'mental health professionals' was guided by Rudaz *et al.*, 2017 review in which psychologists, psychiatrists, therapists and counsellors. 54% of the studies in the review included students or trainees of these professions. Therefore, in the current review, trainees and student's participant samples were included as long as it was clear that they completed face-to-face client work.

Review questions:

- 1.** How effective are compassion-based and mindfulness-based interventions in improving the emotional wellbeing of mental health professionals (mental health workers, psychological practitioners, mental health social workers, mental health nurses, psychologists; therapists, psychiatrists, counsellors, psychotherapists, and trainees/students of these)?
- 2.** What are the methodological sources of bias in the literature?

## 2. Method

The protocol for this systematic review was registered on PROSPERO on 27<sup>th</sup> November 2019.

### ***2.1 Inclusion and exclusion criteria***

Studies were included if the research was (a) a primary research paper; (b) the intervention was a mindfulness-based or compassion-related intervention (MBCT, MBSR, ACT, DBT, CFT, MSC, mindfulness and compassionate mind training) (c) the population sample were mental health professionals (mental health workers, psychological practitioners, mental health social workers, mental health nurses, psychologists; therapists, psychiatrists, counsellors, psychotherapists, and trainees/students of these) working with clients in a mental health setting (public, private or third sector) as their primary job role; (d) the use of relevant (examining emotional wellbeing), validated outcome measures (e) used participants who were adults aged 18 or over who worked as mental health professionals in mental health settings; (f) the study was reported in English.

Studies were excluded if (a) the analysis was of a qualitative nature (b) the papers were review articles, book chapters or unpublished theses.

Prior to the search, the Cochrane Database of Systematic Reviews, Prospero, Google Scholar, PsycINFO, EMBASE, Web of Science databases were searched to identify that this review had not yet been completed or was in the process of being completed (if registered on Prospero).

### ***2.2 Search Strategy***

The search strategy was developed in consultation with an expert librarian. Four databases were searched on the 22<sup>nd</sup> December 2019: EMBASE, OVID Medline<sup>®</sup>, PsycINFO via OVID and Web of Science. Reference lists of relevant research papers were searched. The following search terms were used “Self-compassion; self-kindness; compassion focused therap\*; mindful\*; compassionate mind training;

dialectical behavi\*r therap\*; acceptance and commitment therap\*; mental health professionals; mental health personnel; mental health workers; mental health practitioners; psychological practitioners; psychologist; therapist; psychiatrist; counsellor; psychotherapist.” Following this, additional electronic databases and (PubMed, Google Scholar) were checked to ensure all appropriate research articles were identified.

### **2.3 Data Extraction**

Data was extracted from the selected studies using a form developed by the first author (see Appendix B). This included study population, methods, outcome measures and results. Errors were minimised during data extraction by ensuring familiarity with the study before extraction, as well as repeating extraction over multiple time points to check information was correct. Table 1 summaries the included studies characteristics & main findings. The data extracted from the studies were combined by grouping in key areas of the quality assessment tool as well as effectiveness data.

### **2.4 Quality Assessment**

The methodological quality of the selected studies was assessed using an adapted study quality tool by Downs and Black (1998) (See Appendix C). Due to the non-randomised nature of the selected studies, standard quality measure tools for assessing randomised controlled trials (RCTs) were not appropriate. Deeks *et al.* (2003), in a review on quality assessment tools for non-RCTs, commented that such a quality tool should be refined to limit the inherent bias present in non-randomised studies. A high correlation between the total score from the Downs and Blacks (1998) tool and the total score from the Standards of Reporting Trial Group (Andrew *et al.*, 1994) tool used for RCTs has been reported which suggests strong criterion validity (Olivo *et al.*, 2008). Due to the heterogeneity of the study designs in this review, an adapted version of Downs and Black tool was used. An additional question regarding control groups was added to the tool to reflect the need to understand the validity of the results in line with the aims of the current review. This consisted of 24 questions to review ‘Reporting’ (10 items), ‘External Validity’ (3

items), 'Internal Reliability, (4 items); 'Internal Validity: Confounding, Selection Bias' (6 items), and Power (1 item). Each item was rated '0' (no) or '1' (yes) and '0' if unable to determine or not applicable and total percentage score calculated.

An independent researcher re-rated seven (31.8%) of the studies to ensure inter-rater reliability and accuracy. Initial agreement was 89%. All differences were thoroughly considered and amended where appropriate.

### **3. Results**

#### ***3.1 Search Results***

Figure 1 demonstrates the search results. After applying limits including English Language and human participants, 1567 studies were identified. Duplicates were removed and titles were screened for relevancy. Screening of reference lists of relevant papers sourced 3 additional studies. After this step, 92 studies remained. Of these, 69 articles were excluded (for the reasons given in Figure 1). Of the 23 remaining studies, 1 study was follow-up data for another study and not an interventional research paper. As such, this follow-up data research article was analysed together with the original research article, leaving 22 studies to be included in this review.

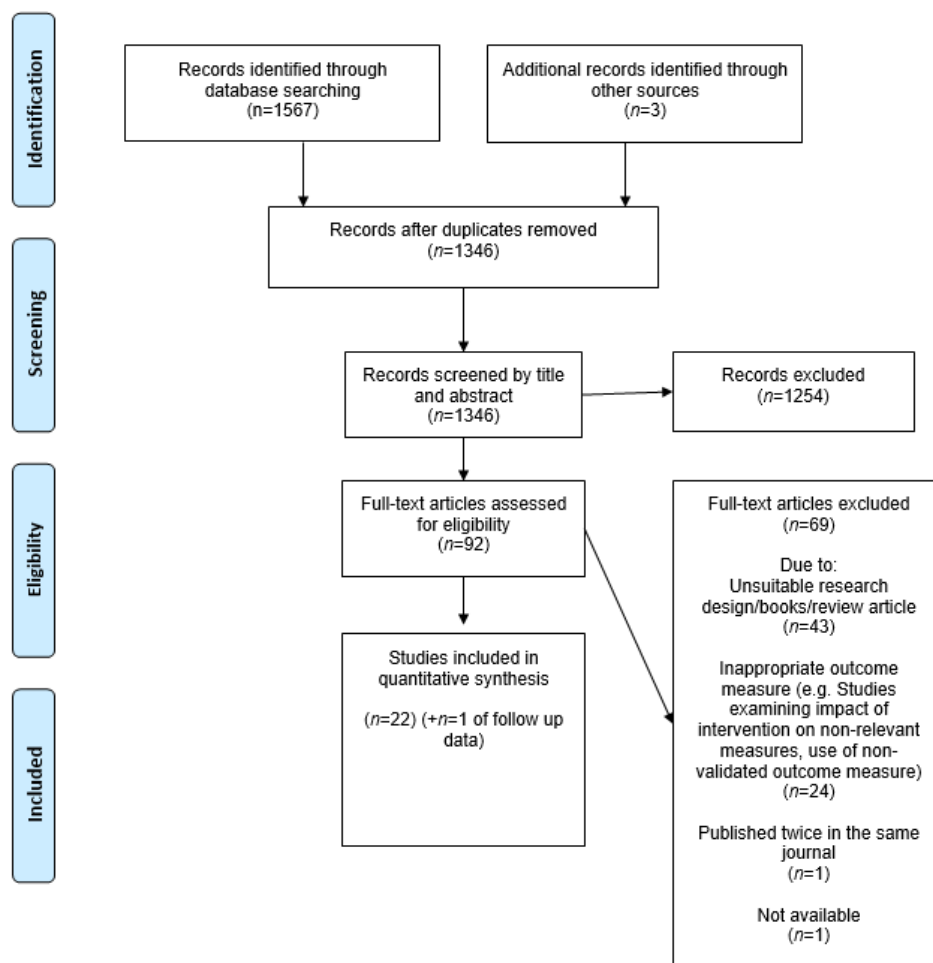


Figure 1. PRISMA study flowchart.

### 3.2 Study Characteristics

The study design used in the included studies is shown in Table 1. Of the 22 studies, eight studies had a control group. There were 14 studies that used a repeated measures design (pre-post data). There were 5 randomised controlled trials and 3 non-randomised controlled studies.

The total sample size of all studies was 1015 participants, of whom 83% were female (not including nine participants of the Dobie *et al.* (2015) study which did not report gender data). 21 studies reported a range of 65-100% of female participants, except for Clarke *et al.* (2015) in which 45-52% of the participants were female. Where data was available, mean age ranged from 23.38 – 53 years. There were 11 studies that recruited samples from mental health clinics. Of these, two

studies recruited from inpatient settings. University doctoral/master level Psychology trainees were recruited for the samples of 10 studies. One study used online recruitment.

All studies reported pre- and post-data and eight studies reported follow-up data (follow-up period ranging from 1 week – 18 months). A variety of outcome measures were used (see Table 1). The most common outcome measures were the Self-Compassion Scale (Neff, 2003) and the Perceived Stress Scale (Cohen *et al.*, 1983; Swedish version: Eskin & Parr, 1996) which were both used in 10 studies. The other most common outcome measures were: The Five Facet Mindfulness Questionnaire (Baer *et al.*, 2006; Swedish version: Lilja *et al.*, 2011) used by six studies, as well as the Mental Health Professionals Stress Scale (Cushway *et al.*, 1996) and The Maslach Burnout Inventory (Maslach & Jackson, 1996) which were both used by four studies.

There were eight interventions used in the 22 studies. CMT was evaluated in one study. MBSR was evaluated in seven studies, Mindfulness was evaluated in two studies and MBCT was evaluated in four studies. ACT was the intervention in five of the studies. Lastly, Mindfulness and Compassion with self and others (Study 6), Self-Compassion Online Program (Study 7), and DBT were used in one study each. Most interventions were delivered as a group/workshop format (20 studies) and two studies were delivered online via video and auditory exercises. See Table 2 for a detailed description of each studies intervention format and adaptations made.

Table 1

*Study characteristics of included studies*

<u>First author, Year (Country)</u>	<u>Study Design and Targets of Interventions</u>	<u>Participants</u>	<u>Sample size</u>	<u>Intervention (&amp; Control Group if present)</u>	<u>Main Outcome Measures*</u>	<u>Analysis (Quantitative)</u>	<u>Results</u>
<b>1. Beaumont, 2017 (UK)</b>	Multiple Method design. Pre – and Post-repeated measures designs.  No quantitative follow-up.  Target: self-compassion, compassion for others, self-critical judgement, dispositional empathy.	Convenience sample of trainee psychotherapists. No information regarding client group.	21 participants (90.48% female).  Final participant numbers in the control group were too small to be used for analysis.	Compassionate Mind Training – 6 sessions (Group).	SCS  Compassion for others scale (Pommier, 2011)  The Interpersonal Reactivity Index (Davis, 1980)	Repeated measure paired sample <i>t</i> -tests, using pre and post scores following completion of the CMT programme.	Higher levels of self-compassion and reduction in self – critical judgement post training.  No statistically significant differences on the Interpersonal Reactivity Index.
<b>2. Brady, 2012 (U.S.A)</b>	One group repeated measures design.  No follow-up.  Target: work stress and patient outcomes.	Convenience sample. Staff members from an inpatient behavioural health unit for adults.	16 participants (81% female).	4 – week Mindfulness-based stress reduction (MBSR) programme - 1 hour per class (Group).  No control group.	MHPSS TMS SOSS MBI	Descriptive statistics.  Paired <i>t</i> - tests.	No statistically significant difference on the MBI post-MBSR. MHPSS scores decreased and TMS scores increased post MBSR. Statistically significant increases in the total score on the SOSS subscale.

<b>3. Clarke, 2015 (UK)</b>	Randomised controlled trial.  6-month follow-up.  Target: staff-wellbeing, attitudes to patients.	Mental health professionals who worked with adults clients with a diagnosis of personality disorder.	ACT group: 77 participants (52% female; mean age of 41.47 years) Psychoeducation training: 63 participants. (45% female; mean age of 38.30 years).	2- day ACT training.  Control:2-day psychoeducation training.	MBI GHQ-22 VLQ	Linear mixed models of analyses.  Pairwise comparisons.  Independent t-tests.  Pearson's correlations.	Significant increase in engagement in valued living (VLQ) post-intervention but not maintained at follow-up.  No significant group differences or main effects of time were found for MBI or GHQ.
<b>4. Dereix-Calonge, 2019 (Colombia)</b>	Parallel, two arm randomised controlled trial.  No follow-up.  Target: repetitive negative thinking.	Clinical Psychology Trainees.  (Trainees who see patients as part of training placement – no information regarding client groups).	85 participants (79% female; mean age of 23.38).  (n = 43 in intervention group; n= 42 in control group).	ACT training: Group-based adapted ACT intervention by authors, called Repetitive-Negative Thinking (RNT) focused ACT (Sierra & Ruiz, submitted): Three 2-hour modules, using videos, auditory exercises.  Wait list condition control group	DASS (Spanish Version) VQ PTQ PTQ-CPT	Independent t-tests.  Repeated measures analysis of variance.  Independent simple mediation analyses.	Decrease in PTQ ( $t(42) = 2.93, p = 0.005$ ) and PTQ-CPT scores ( $t(42) = 3.76, p < 0.001$ ) in the ACT group and increase in these scores in the wait list group. PTQ-CPT is a statistically significant mediator in reducing emotional symptoms as obstructions to valued living.  The effect of the intervention was

							greater for those participants who scored highly on emotional symptoms (DASS)
<b>5. Dobie, 2015 (Australia)</b>	Pre- and Post-repeated measures design.  No follow-up.  Target: Psychological distress.	Mental health professionals from an adult inpatient mental health unit.	9 participants (no information on gender).	Mindfulness-based stress reduction (Group).  15 minutes of daily guided exercises at the beginning of each morning shift, and three 30-minute education sessions.  No control group.	DASS KIMS	Wilcoxon signed-rank tests (small sample size).	Post intervention: Statistically significant decrease in DASS scores. No significant decrease in KIMS scores.
<b>6. Eriksson, 2018 (Sweden)</b>	Randomised Controlled Trial.  No follow-up.  Target: Stress and burnout.	Practising Psychologists in Sweden. Mixed working environments and client groups.	81 participants (98.8% female; mean age of 36.2).  ( <i>n</i> = 40 in the intervention group; <i>n</i> = 41 in the control group).	Intervention: 6-week online programme: 'Mindfulness and compassion with self and others' (10 hours).  Wait list control group.	SCS FFMQ, Swedish version PSS, Swedish version SMBQ	Mixed Linear Modelling.	Post training: Total SCS score increased, significant reductions in PSS and SMBQ, improved mindfulness skills.

7. <b>Finlay-Jones, 2016 (Australia)</b>	Single group, open trial design. Pre – and post-test repeated measures.  Pilot study.  12-week follow-up.  Target: Psychological distress, self-compassion, happiness.	Psychology trainees enrolled in a postgraduate Psychology course (counselling or clinical) and undertaking clinical work.  Mixed settings and client groups.	37 participants (89% female; mean age of 32.61 years).	Six weekly Self-Compassion modules accessed online.  No control group.	SCS PSS AHI DERS DASS	Multilevel mixed effects linear regression.	Significant improvements in emotional regulation (moderate to large effect size), perceived stress (large effect size; $d=.85$ ), self-compassion (large effect size; $d=.86$ ), happiness (moderate effect size; $d=.52$ ), depression (moderate effect size; $d=.54$ ) post-intervention.  Improvements maintained at follow-up. No significant changes in anxiety levels.
8. <b>Hallman, 2014 (U.S.A) **</b>	One group repeated measures.  2- month follow-up. Target: stress, mindfulness, staff and patient safety.	Mental health professionals from a child/adolescent psychiatric acute care centre.	12 participants (83.3% female; mean age of 39 years).	Group mindfulness-based stress reduction sessions (four, 30-minute sessions over 8 days).  No control group.	PSS TMS	Repeated measures analysis of variance.	There was a significant decrease in stress (Wilks' lambda = .35, $F(2,10) = 9.246$ , $p < .05$ ). TMS scores increased significantly (Wilks' lambda =

							.456, $F(2, 10) = 5.958, p < .05$ ).
<b>9. Hayes, 2004 (USA)</b>	Randomised controlled trial.  3-month follow-up.  Target: Stigma and burnout.	Adult alcohol and drug abuse counsellors.	90 participants (63% female; mean age of 53 years).  30 participants in ACT group.  34 participants in multicultural training.  29 participants in methamphetamine training (educational control group)  Follow-up completed by 87% of ACT group, 94% of multicultural training, 93% methamphetamine training.	1-day ACT workshop.	MBI	Pairwise comparisons. Repeated measures analysis of variance. Paired sample $t$ tests.	Overall MBI (burnout) scores: a significant time x treatment interaction ( $F(4, 180) = 4.05, p = .004$ ).  Significant improvement in MBI scores within the ACT group post-group ( $t(29) = 3.01, p = .005$ ) and at follow-up ( $t(29) = 2.70, p = 0.12$ ).  Post-ACT group showed significantly more improvements than two other groups and at follow-up ACT was significantly better than multicultural training group.

<b>10. Hopkins, 2013 (Australia)</b>	Repeated measures.  2-month follow-up.  Target: Stress.	Postgraduate Clinical Psychology training programmes. No information regarding client groups.	11 participants (90% female with a mean age of 33.6 years).	8-week manualised MBCT.	PSS FFMQ (five subscales) Interpersonal reactivity index	Non-parametric Friedman's analysis of variance by ranks test.	Significant differences between the three assessment points for the Interpersonal reactivity index subscale and 3 subscales (Observe, Non-judge and non-react). No significant differences for PSS or 2 other subscales of FFMQ.
<b>11. Marx, 2014 (U.K)</b>	Uncontrolled, feasibility study.  3-month follow-up.  Target: Stress and self-compassion.	NHS mental health service staff. Mixed working environments and client groups – all adult services	42 participants (81% female; mean age of 42 years).  43% completed follow-up.	Five 8-week adapted MBCT groups, as well as an orientation session.  No control group.	PSS SCS	Intention-to-treat repeated-measures ANOVA.	Significant improvement in PSS scores ( $F(1,40) = 2.40, p < 0.001, d = 0.76$ ). And at follow-up ( $F(1,40) = 15.73, p < 0.001, d = 0.98$ ). Significant improvements in SCS scores ( $F(1,39) = 15.24, p < 0.001, d = 0.67$ ) and improvements sustained at follow-up ( $F(1,39) = 19.01, p < 0.001, d = 0.81$ ).

<b>12. Moore, 2008 (UK)</b>	Repeated measures design.  No follow-up.  Target: Stress, mindfulness, and self-compassion.	Trainee Clinical Psychologists. No information regarding client groups.	10 participants (90% female).  No information on age.	4-week brief mindfulness exercises. 14 exercises over 1-month.	PSS KIMS NCS PSS	Wilcoxon signed rank tests.	Significant increase in KIMS scores ( $z = 1.74, p = .04$ ).  No significant differences found on NCS total, although a significant difference reported on self-kindness subscale ( $z = 1.99, p = .02$ ).  No significant differences in PSS scores.
<b>13. Pakenham, 2015 (Australia)</b>	Repeated measures design.  No follow-up.  Target: Stress, therapist skills.	Clinical Psychology Trainees (Australia) who are completing clinical internships. No information regarding client groups.	32 participants (88% female; mean age of 27.66 years).	12 weekly 2-hour ACT group workshops.  No control group.	MHPSS GHQ-28 SCS AAQ FFMQ WBSI VLQ Counselor Activity Self-Efficacy Scales – helping skills (Lent <i>et al.</i> , 2003).  Working Alliance Inventory – Short Form (Tracey & Kokotovic, 1989).	Pairwise <i>t</i> -tests. Correlations.	No significant increase in total SCS, MHPSS, GHQ-28 scores.  Significant improvement in AAQ, FFMQ, WBSI, VLQ, Counselor Activity Self-Efficacy, and Working Alliance Inventory.  Correlations between ACT processes (mindfulness, acceptance, valued living) and stress.

<p><b>14. Raab, 2015 (Canada)</b></p>	<p>Repeated measures design. Pilot study. No follow-up. Target: self-compassion, stress, burnout and quality of life.</p>	<p>Mental health professionals in a mental health centre in Canada. No information regarding client group.</p>	<p>22 participants (100% female; age range of 24 and 69 years).</p>	<p>MBSR (Kabat-Zinn, 1982): 8 weekly 2.5 hours class format (group), as well as one 'Day of Silence.'</p> <p>No control group.</p>	<p>SCS MASLACHBI QOLI</p>	<p>Paired sample <i>t</i>-tests.</p>	<p>Significant improvements in SCS total score (<math>p = .003</math>).</p> <p>No significant changes on MASLACHBI or QOLI.</p>
<p><b>15. Razaque, 2016 (U.K)</b></p>	<p>Pre- and post-measure; repeated measures</p> <p>Mixed method design (only including quantitative information)</p> <p>1-week follow-up.</p> <p>Target: mindfulness, therapeutic alliance, and burnout.</p>	<p>Psychiatrists (or working towards a qualification in Psychiatry). Likely working in mixed environments and client groups.</p>	<p>26 participants (65% female). No information on age.</p>	<p>The 2 days Mindfulness-Based Professional Development (MBPD) retreat – developed by first author.</p> <p>No control group.</p>	<p>FMI WAI MBI Santa – Clara Self-Compassion Scale (Hwang, Plante, and Lackey 2008).</p>	<p>T tests. ANOVA. Bonferroni post hoc comparisons. Wilcoxon signed rank test</p>	<p>Between pre – and 1-week follow-up:</p> <p>Significant increase in WAI scores (<math>t(24) = 2.039, p &lt; .05</math>) and FMI</p> <p>Significant decrease in MBI scores (<math>t(24) = 3.187, p &lt; .01</math>).</p> <p>Mindfulness practice significantly increased (<math>Z = 4.500, p &lt; 0.001</math>).</p> <p>No significant change in Santa-Clara Self-Compassion Scale.</p>

<b>16. Rimes, 2011 (U.K)</b>	<p>Repeated measures</p> <p>No follow-up.</p> <p>Target: stress, anxiety, depression, empathic concern, mindfulness, self-compassion, and rumination.</p>	<p>Institute of Psychiatry Clinical Psychology</p> <p>doctoral trainees.</p> <p>No information regarding client group.</p>	<p>20 participants (100% female).</p> <p>There were nine trainees in 1<sup>st</sup> year, six trainees in 2<sup>nd</sup> year and five in 3<sup>rd</sup> (final) year.</p> <p>No information on age.</p>	<p>8-week MBCT course (group) (Segal, Williams, and Teasdale, 2002); sections regarding depression was adapted to focus on stress.</p> <p>No control group.</p>	<p>PSS</p> <p>HADS</p> <p>FFMQ</p> <p>SCS</p> <p>RRQ</p> <p>A Mechanisms of Mindfulness Questionnaire was developed by the authors.</p>	<p>Paired <i>t</i>-tests</p> <p>Pearson's correlations</p>	<p>A significant increase in self-compassion (<math>t = 3.1, p = .016</math>), and mindfulness (<math>t = 3.0, p = .0008</math>) and a significant decrease in rumination (<math>t = 4.9, p &lt; .0005</math>).</p> <p>Trainees in 1<sup>st</sup> year showed a significantly larger increase in SCS scores than 2<sup>nd</sup> and 3<sup>rd</sup> years (<math>t(19) = 2.4, p = .025</math>).</p> <p>Significant correlations between reductions in stress and reductions in rumination and anxiety levels.</p>
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<p><b>17. Robins, 2019 (Australia)</b></p>	<p>A non-randomised control trial.</p> <p>Pilot study.</p> <p>6-month follow-up.</p> <p>Target: burnout and psychological distress.</p>	<p>Master level Psychology students (completing placements). No information regarding client groups.</p>	<p>74 Participants.</p> <p>(<i>n</i> = 17 in the intervention group; 94.12% females; mean age 31.53 years.</p> <p><i>n</i> = 57 in the control group; 92.98% female; mean age of 30.84 years)</p>	<p>8-week adapted DBT skills training course (Group).</p> <p>Control group – students enrolled in similar degrees and not taking part in the group.</p>	<p>MBI-SS (5-item 'exhaustion' subscale and 4-item 'cynicism' subscale).</p> <p>Utrecht Work Engagement Scale for Students (5-item vigour subscale and 4-item dedication subscale; Schaufeli <i>et al.</i>, 2002).</p> <p>GHQ-12</p> <p>20-item emotional stability measure (from the International Personality Item Pool website).</p> <p>AAQ-II</p> <p>MAAS</p> <p>MHPSS (Workload and Professional self-doubt subscales)</p>	<p>Chi-square tests, <i>t</i>-tests</p>	<p>Participants in the intervention group showed significantly greater change on all measures in comparison to the control group.</p>
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<b>18. Ruths, 2013 (U.K.)</b>	Prospective uncontrolled intervention study (repeated measures design).  Pilot study.  3-month follow-up.  Target: mindful awareness, psychological well-being, anxiety, life satisfaction.	Mental health professionals working in a mental health trust and a research institute. No information regarding client group.	27 participants (75% female; mean age: 35).	8-week MBCT Programme (Group) - 2-hour sessions (Segal <i>et al.</i> 2002)  No control group.	MAAS GHQ-12 SWLS BSI PSWQ STAI	Wilcoxon signed-rank test  Correlations	Post-programme:  Significant improvement in psychological well-being ( $Z = -2.949, p = 0.003$ , mindful awareness and attention ( $Z = -2.654, p = 0.008$ ). Improvements sustained at follow-up.  At 3-month follow-up, time spent mediating was correlated with anxiety and psychological well-being.
<b>18 continued.... De Zoysa, 2014 (U.K)</b>	18-month follow-up data from Ruth <i>et al</i> (2013) study.	Mental health professionals (as above).	18 participants (78% female; mean age of 35 years)	Follow-up data	MAAS GHQ-12 SWLS PSWQ STAI	Repeated measures ANOVAS  Correlations	Significant improvements in trait anxiety, worry and mindfulness ( $p > 0.05$ ) compared to baseline. Life satisfaction, state anxiety and psychological wellbeing did not show significant improvements from baseline.

<b>19. Shapiro, 2007 (U.S.A)</b>	<p>Prospective, nonrandomised, cohort-controlled design.</p> <p>No follow-up.</p> <p>Target: stress, negative affect rumination, anxiety, self-compassion, mindfulness</p>	<p>Master's level Counselling Psychology Programme students. No information regarding client groups.</p>	<p>54 participants (88.9% female; mean age of 29.2 years)</p> <p><math>n = 22</math> in the intervention group. <math>n = 32</math> in the control group.</p>	<p>8-week MBSR course (Group) of 2-hour weekly sessions.</p> <p>Control group: Students enrolled in other Psychology courses with similar duration.</p>	<p>MAAS PANAS STAI PSS RRQ SCS</p>	<p>ANOVA. Simple regression.</p>	<p>Post-intervention: In comparison to control group, participants in MBSR group demonstrated significant improvements in all outcome measures, as well as an increase in mindfulness.</p>
<b>20. Stafford – Brown, 2012 (Australia)</b>	<p>Non-randomized controlled trial, with repeated measures design.</p> <p>10-week follow-up.</p> <p>Target: Stress, life satisfaction, self-compassion, and therapeutic relationships.</p>	<p>Clinical Psychology trainees from Australian Psychological Society accredited programmes. Likely mixed client groups.</p>	<p>56 participants (87.5% female; mean age of 28.45 years)</p> <p><math>(n = 28)</math> in the intervention group; <math>n = 28</math> in the control group).</p>	<p>ACT stress management group (and 10-week follow-up). Weekly 3-hour sessions for 6 weeks.</p> <p>Wait-list control group.</p>	<p>MHPSS GHQ-28 SCS AAQ FFMQ WBSI VLQ SWLS Counselor Activity Self-Efficacy Scales – helping skills</p> <p>Working Alliance Inventory – Short Form</p>	<p>Mixed ANOVA. MANOVA.</p>	<p>No significant effect of intervention on self-compassion (<math>F(6,49) = .80, ns</math>). Self-doubt decreased for ACT participants and increased for wait-list control participants (<math>F(1,54) = 4.38, p &lt; .05</math>). Psychological distress decreased for the ACT group and increased for control group (<math>F(1, 54) = 4.18, p &lt; .05</math>). Self-efficacy scores increased significantly more for the ACT group than control group (<math>F(1,54) = 6.10, p &lt; .05</math>).</p>

<p>21. <b>Suyi, 2017 (Singapore)</b></p> <p>Pre-post study design, repeated measures.</p> <p>3-month follow-up.</p> <p>Target: mindfulness, compassion, burnout, and stress.</p>	<p>Mental Health Professionals employed at the Institute of Mental Health in Singapore. No information regarding client groups.</p>	<p>37 participants (81.1% female; 27% between the ages of 25-30 years).</p>	<p>MBSR group programme, adapted by the author. Training provided weekly 2-hour sessions for 6 weeks. Follow-up.</p> <p>No control group.</p>	<p>FFMQ SCS – SF CS PSS OLBI (exhaustion and disengagement subscales)</p>	<p>ANOVA. Repeated measures within groups ANOVA. Friedman’s ANOVA.</p>	<p>Significant change SCS-SF scores (F(2,72) = 15.69, P &lt;.001), PSS scores (F(2, 72) = 4.52, P = .01), no significant changes in disengagement and exhaustion scales.</p>
<p>22. <b>Yang, 2018 (China)</b></p> <p>Randomised controlled study.</p> <p>No follow-up.</p> <p>Target: work stress, depression, anxiety</p>	<p>Psychiatric nurses from general hospitals. No information regarding client group.</p>	<p>95 participants (67% female; mean age of 29.5 years).</p> <p>n = 50 in the intervention group and n = 50 in the control group.</p>	<p>MBSR group Once a week for 8 weeks.</p> <p>Control group: Routine psychological support.</p>	<p>SCL – 90 SDS SAS NSS</p>	<p>Independent t-tests, paired t-tests Chi-square tests, Wilcoxon rank sum test.</p>	<p>Statistically significant improvements in SCL-90, SDS, NSS, SAS scores in the intervention group.</p>

\*Note. Abbreviated measures: SCS: Self-Compassion Scale (Neff, 2003a); MHPSS: Mental Health Professionals Stress Scale (Cushway *et al.*, 1996); TMS: The Toronto Mindfulness Scale (Lau *et al.*, 2006); SOSS: The Sense of Self Scale (O’ Connor, 1995); MBI: The Maslach Burnout Inventory for Human Services (Maslach & Jackson, 1996); GHQ-22: General Health Questionnaire (Goldberg & Hillier, 1979); VLQ: Valued Living Questionnaire (Wilson *et al.*, 2010); DASS Spanish Version: Depression Anxiety and Stress – 21 (Daza *et al.*, 2002); VQ: Valuing Questionnaire (Smout *et al.*, 2014); PTQ: Perseverative Thinking Questionnaire (Ehring *et al.*, 2011); PTQ-CPT: Perseverative Thinking Questionnaire for Clinical Psychology Trainees (Dereix-Calonge *et al.*, 2019, in Press); DASS: The Depression Anxiety Scale (Lovibond & Lovibond, 1995); KIMS: The Kentucky Inventory of Mindfulness Skills (Baer *et al.*, 2004); FFMQ: Five Facets Mindfulness Questionnaire, Swedish version (Lilja *et al.*, 2011); PSS: Perceived Stress Scale, Swedish version (Eskin and Parr, 1996); SMBQ: Shirom-Melamed Burnout Questionnaire (Melamed *et al.*, 1999); PSS: Perceived Stress Scale (Cohen *et al.*, 1983); AHI: Authentic Happiness Inventory (Peterson & Park, 2008); DERS: Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004); FFMQ: Five Facet Mindfulness Questionnaire (Baer *et al.*, 2006); NCS: Neff Compassion Scale (Baer *et al.*, 2006); GHQ-28: General Health Questionnaire (Goldberg, 1978); AAQ: Acceptance and Action Questionnaire (Bond & Bunce, 2003); WBSI: The White Bear Suppression Inventory (Wegner & Zanakos, 1994); MASLACHBI: The Maslach Burnout Inventory (Maslach & Jackson, 1981); QOLI: The Quality of Life Inventory (Frisch *et al.*, 1992); FMI: Freiberg Mindfulness Inventory (Walach *et al.* 2006); WAI: The Working Alliance Inventory (Hatcher & Gillaspay, 2007); HADS: The Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983); RRQ: Rumination-Reflection Questionnaire (Trapnell & Campbell, 1999); MBI-SS: Maslach Burnout Inventory – Student Survey (Schaufeli *et al.*, 2002); GHQ-12: The General Health Questionnaire 12-item version

(Goldberg, 1972); AAQ-II: Acceptance and Action Questionnaire II (Bond *et al.*, 2011); MAAS: Mindfulness Attention Awareness Scale (Brown & Ryan, 2003); SWLS: Satisfaction with Life Scale (Diener *et al.*, 1985); BSI: Brief Symptom Inventory (Derogatis & Melisaratos, 1983); PSWQ: Penn State Worry Questionnaire (Meyer *et al.*, 1990); STAI: State-Trait Anxiety Inventory (Spielberger *et al.*, 1983); PANAS: Positive and Negative Affectivity Schedule (Watson *et al.*, 1988); SCS-SF: Self-compassion scale-short form (Raes *et al.*, 2011); CS: Compassion Scale (Pommier, 2010); OLB: Oldenburg Burnout Inventory (Demerouti & Halbesleben, 2005); SCL-90: Symptom Checklist 90 (Derogatis *et al.*, 1973); SDS: Self-Rating Depression Scale (Zung, 1965); SAS: Self-Rating Anxiety Scale (Zung, 1971); NSS: Nursing Stress Scale (Li & Liu, 2000).

**\*\* Note.** This paper was published again in 2017 (Hallman *et al.*, 2017). The authors were contacted to provide clarification regarding duplication, and they stated that the 2017 publication was for a specialist inpatient edition and both references are the same study.

Table 2

*Interventions delivered in selected studies.*

<u>First Author, Year</u>	<u>Intervention</u>	<u>Intervention Categorisation</u>	<u>Specific</u>	<u>Format and number of sessions</u>
<b>1. Beaumont, 2017</b>	CMT (based on Gilbert's model, 2009, 2014).	Self-Compassion based intervention	Psychoeducation, compassionate self, letter writing, self-compassionate language.	6 sessions. Group. No mention of homework explicitly, however, mentions use of diaries.
<b>2. Brady, 2012</b>	MBSR (based on Kabat-Zinn, 1990)	Mindfulness-based intervention	Meditation, relaxation exercises, mindful living, psychoeducation.	Reduction from standard MBSR programmes to 1 hour per week for 4 weeks. Class/group format. Weekly homework assignments, weekly meditation diary, audio exercises.
<b>3. Clarke, 2015</b>	ACT-based self-management	Compassion and mindfulness-based intervention	ACT interpretation of stigma, mindfulness skills, values (and experiential exercises to reconnect to values), using self-compassion.	Workshops based in university and NHS sites 2-day group. No reports of homework.
<b>4. Dereix-Calonge, 2019</b>	Repetitive Negative Thinking (RNT) -focused ACT, developed by Sierra and Ruiz (submitted).	Compassion and mindfulness-based intervention	Psychoeducation, values and valued actions (and barriers), mindfulness, perspective of self.	6 weekly sessions (1 hour per session) Group. All sessions involved audio files, videos, individual responses (as programme had initially been designed for online use). No reports of homework setting.
<b>5. Dobie, 2015</b>	Brief MBSR (developed by authors based on Kabat-Zinn, 1990)	Mindfulness-based intervention	Mindful movements, breathing exercises, reflection exercises, psychoeducation.	Daily 15-minutes guided experiential exercises. Group. Three 30-minute psychoeducation sessions. No reports of homework setting.
<b>6. Eriksson, 2018</b>	Mindful Self-Compassion Training (Mindfulness and compassion with self and others; Schenstrom, 2017)	Self-Compassion-based Intervention	Kind attention, kind awareness, loving kindness with oneself and others, body scan, breathing anchor.	6-week programme: 15 minutes of training per day, 6 days a week. Online. Homework: Online diary, daily exercise.

<b>7. Finlay-Jones, 2016</b>	Self-Compassion Online – programme developed by author	Self-Compassion-based Intervention	Psychoeducation, mindfulness, meditation practice (focus on self-compassion and loving kindness), compassionate letter writing.	6 modules/1 module per week. Online. Homework: extra mediation practice, ‘self-compassion challenge’ for real-life applications.
<b>8. Hallman, 2017</b>	Brief MBSR, developed by the author, based on mindfulness text by Williams and Penman, 2011.	Mindfulness-based intervention	Body scanning, autopilot, self-judgement, breathing exercises, self-befriending.	Four training classes every 2 <sup>nd</sup> day over 8 days for 45 minutes each. Group. Allocated 15 minutes for each shift for individual mediation but few staff used this time.
<b>9. Hayes, 2004</b>	ACT	Compassion and mindfulness-based intervention	Acceptance, mindfulness, cognitive defusion, values.	1-day ACT workshop. Group.
<b>10. Hopkins, 2013</b>	MBCT (Segal <i>et al.</i> , 2002) – used protocol.	Mindfulness-based intervention	Protocol (mindfulness, self-kindness, self-acceptance).	8 -session weekly sessions. Group.
<b>11. Marx, 2014</b>	MBCT (Segal <i>et al.</i> , 2002). Modified from protocol to include more psychoeducation, mindful and difficult communications, and less on depression.	Mindfulness-based intervention	Protocol (mindfulness, self-kindness, self-acceptance).	8 weekly group sessions, plus orientation session. Participants joined one of five groups. Daily practice encouraged (no record completed).
<b>12. Moore, 2008</b>	Brief Mindfulness course – developed by author	Mindfulness-based intervention	Mindfulness of breathing, body, emotions and thoughts.	14 group sessions of 10-minute duration over the course of 1-month.
<b>13. Pakenham, 2015</b>	ACT training course.	Compassion and mindfulness-based intervention	Acceptance, defusion, mindfulness, values (committed action), self-care. Using ‘self-as-laboratory’ approach.	12 weekly 2-hour workshops. Group. Homework: self-care practice.
<b>14. Raab, 2015</b>	MBSR (Kabat-Zinn,1982)	Mindfulness-based intervention	Body scan, hatha yoga, loving-kindness meditation.	Eight weekly 2.5-hour classes. Group. One day of silence. Home practice emphasised and encouraged.
<b>15. Razaque, 2016</b>	Mindfulness-Based Professional Development retreat (designed by author and Zen Master).	Mindfulness-based intervention	Teaching on mindfulness meditation, mindful daily activities. Teaching on ACT techniques.	48-hour retreat. Group. No explicit homework.

<b>16. Rimes, 2011</b>	MBCT (Segal <i>et al.</i> 2002)	Mindfulness-based intervention	Protocol. Sections focusing on depression were adapted to focus on stress.	8-week course. Group. Home practice encouraged.
<b>17. Robins, 2019</b>	DBT skills training (based on Linehan, 1993)	Compassion and mindfulness-based intervention	Mindfulness, distress tolerance, emotional regulation, interpersonal effectiveness.	8 session of 2-hour duration each. Homework given at each session. Group.
<b>18. Ruths, 2013</b>	MBCT(Segal <i>et al.</i> 2002), adapted to focus on distressing emotions rather than depression.	Mindfulness-based intervention	Meditation practices and mindful movement.	8 weekly sessions of 2-hour duration each. Group Homework: Meditation 6 days per week up to 45 minutes, informal practice encouraged, weekly diary.
<b>19. Shapiro, 2007</b>	MBSR (modelled from Kabat-Zinn, 1982).	Mindfulness-based intervention	Mindfulness-based meditations, yoga, loving-kindness meditation, psychoeducation, stress-management skills.	Eight weekly 2-hour sessions. Group. No record of homework given.
<b>20. Stafford-Brown, 2012</b>	ACT informed stress management group	Compassion and mindfulness-based intervention	Willingness as alternative to experiential avoidance, mindfulness, acceptance, values-based actions, self-compassion.	Four 3-hour session weekly sessions. Group. Homework given for first 3 sessions.
<b>21. Suyi, 2017</b>	Brief MBSR (based on Kabat-Zinn, 1990)	Mindfulness-based intervention	Mindfulness, mindful communication, self-kindness, mindful meditations.	2-hour weekly sessions delivered for 6 weeks. Group. Homework: daily mindfulness practice, guided meditation
<b>22. Yang, 2018</b>	MBSR (no information if this was protocol-based)	Mindfulness-based intervention	Relaxation exercises, mindfulness meditation.	One session per week for 8 weeks. Group No mention of homework.

### **3.3 Quality Appraisal**

Table 3 presents the results of the quality assessment of the 22 included studies. Total scores are expressed as a percentage of scores available. Scores range from 42-79% and highlight a wide variability of scores. See Appendix C for the QA tool (Downs & Black, 1998).

**3.3.1 Reporting.** This section of the QA tool refers to how well and clear the studies were at reporting information such as hypotheses and main outcomes. All included studies reported the objectives, outcomes, and main findings clearly and fully. All studies, apart from one study (Dobie *et al.* 2015) described participant characteristics. As shown in Table 2, there are a variety of interventions used, often with adaptations by the authors. Most studies described interventions appropriately or referenced the standard protocol. One study (Yang *et al.*, 2018) did not describe the intervention used in detail. Although the authors describe using a MBSR approach, it is not clear whether this was followed per protocol or if adaptations, if any, were made. Studies varied in the reporting of principal confounders or taking these into consideration in analysis. Only two studies (Marx *et al.*, 2014; Ruths *et al.*, 2013) described measurement or acknowledgement of adverse events because of the intervention. In relation to participant drop-out, Beaumont *et al.* (2017), Hopkins and Proeve (2013), Rimes and Wingrove (2010) did not describe characteristics of participants who dropped out or were lost to follow-up. Having information on drop-out rates has implications when evaluating the fit of the interventions for this population and how acceptable they are in these settings. 11 of the studies had a follow-up period (Clarke *et al.*, 2015; Finlay-Jones *et al.*, 2016; Hallman *et al.*, 2014; Hayes *et al.*, 2004; Hopkins & Proeve, 2013; Marx *et al.*, 2014; Razzaque & Wood, 2016; Robins *et al.*, 2019; Ruths *et al.*, 2013; Stafford-Brown & Pakenham, 2012; Suyi *et al.*, 2017). The studies that did have a follow-up assessment varied substantially in the length of time between post-intervention assessment and follow-up.

**3.3.2 External Validity.** This section of the QA tool refers to how well the results of the studies can be applied to other settings. None of the studies included participants that were representative of the entire population from which they were recruited. Although some studies stated the proportion of participants who were asked who then agreed to take part, none of the studies demonstrated sample representativeness. Despite this, one study scored on this criterion (Shapiro *et al.*, 2007) as the participant sample consisted of the whole source population. There was variability in whether the studies used a suitably qualified trainer to lead the intervention, with 15 studies reporting using trained professionals. For five studies (Beaumont *et al.*, 2017; Brady *et al.*, 2012; Moore, 2008; Pakenham, 2015 and Yang *et al.*, 2018), it was not possible to determine the status of the trainer leading the intervention due to a lack of information. Two studies (Rimes & Wingrove, 2010; Hayes *et al.*, 2004) reported that Master or Doctoral students were delivering the intervention and since no further information was available (including supervision arrangements), '0' was scored for this criterion.

**3.3.3 Internal Reliability.** This section refers to how consistent the studies design and methods are. It is important to note that many of the studies did not follow a standard protocol for the intervention delivered. See Table 2 for explanation of each intervention and specific adaptations. Adaptations generally occurred to reduce session number or time to a 'brief' version (e.g., Dobie *et al.*, 2015; Hallman *et al.*, 2014; Moore, 2008 and Suyi *et al.*, 2017), or to reduce focus on depressive symptoms and adapt the content to focus on stress (e.g., Marx *et al.*, 2014 and Ruths *et al.*, 2013). This may have impacted upon treatment integrity and adherence. Having more information on the adaptations would have allowed for stronger conclusions to be made on how appropriate these interventions are. None of the studies reported on treatment fidelity, adherence or compliance. All 22 studies used validated and reliable outcome measures. None of the studies used retrospective unplanned statistical analysis and the statistical techniques used were appropriate to assess the main outcome measures.

**3.3.4 Internal Validity: Confounding.** This section of the QA tool evaluates how well the studies dealt with potential confounding factors and ensured the strength of their conclusions. Eight studies had a control group (Clarke *et al.*, 2015; Dereix-Calonge *et al.*, 2019; Eriksson *et al.*, 2018; Hayes *et al.*, 2004; Robins *et al.*, 2019; Shapiro *et al.*, 2007; Stafford-Brown & Pakenham, 2012 and Yang *et al.*, 2018). Randomisation occurred in five studies (Clarke *et al.*, 2015; Dereix-Calonge *et al.*, 2019; Eriksson *et al.*, 2018; Hayes *et al.*, 2004 and Yang *et al.*, 2018).

**3.3.5 Power.** This section of the QA tool evaluates if the studies ensured there was an adequate sample size. Two studies mentioned having completed a power analysis to ensure an adequate sample size needed to detect a significant difference in effect size (Dereix-Calonge *et al.*, 2019 and Finlay-Jones *et al.*, 2016).

11 of the studies had a follow-up period (Clarke *et al.*, 2015; Finlay-Jones *et al.*, 2016; Hallman *et al.*, 2014; Hayes *et al.*, 2004; Hopkins & Proeve, 2013; Marx *et al.*, 2014; Razzaque & Wood, 2016; Robins *et al.*, 2019; Ruths *et al.*, 2013; Stafford-Brown & Pakenham, 2012; Suyi *et al.*, 2017). The studies that did have a follow-up assessment varied substantially in the length of time between post-intervention assessment and follow-up.

Table 3.

## Quality Assessment Results

Quality Criteria	Beaumont, 2017	Brady, 2012	Clarke, 2015	Dereix-Calonge, 2019	Dobie, 2015	Eriksson, 2018	Finlay-Jones, 2016	Hallman, 2014	Hayes, 2004	Hopkins, 2013	Marx, 2014	Moore, 2008	Pakenham, 2015	Raab, 2015	Razzaque, 2016	Rimes, 2011	Robins, 2019	Ruths, 2013	Shapiro, 2007	Stafford-Brown, 2012	Suyi, 2017	Yang, 2018	
1. Objectives	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2. Outcomes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3. Characteristics of participants	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4. Description of Intervention	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+
5. Confounders	-	-	-	-	-	+	-	+	+	+	-	-	+	-	-	+	-	-	+	+	+	+	+
6. Main findings	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
7. Variability	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
8. Adverse events	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-
9. Participants lost to follow-up	-	+	+	+	+	+	+	+	+	-	+	+	+	+	+	-	+	+	+	+	+	+	+
10. Probability values	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
11. Representation (recruitment)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
12. Representation (population)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13. Trained professionals delivering intervention	-	-	+	+	+	+	+	+	-	+	+	-	-	+	+	-	+	+	+	+	+	+	-

14. Data dredging	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
15. Statistical tests	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
16. Compliance with intervention	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17. Validity and reliability of outcome measures	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
18. Control group	-	-	+	+	-	+	-	-	+	-	-	-	-	-	-	-	+	-	+	+	-	+
19. Recruitment from the same population	N/A	N/A	+	+	N/A	+	N/A	N/A	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	+	N/A	+	+	N/A	+
20. Recruitment over the same period of time	N/A	N/A	+	+	N/A	+	N/A	N/A	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	+	+	N/A	+
21. Randomisation	N/A	N/A	+	+	N/A	+	N/A	N/A	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	-	-	N/A	+
22. Adjustment for confounding	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	+	-	-	+	-	-	+
23. Intention to treat	-	+	+	+	+	+	+	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+
24. Power analysis	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total (%)	42	50	71	75	50	79	58	54	75	50	58	50	54	54	54	50	63	58	79	71	58	75

**3.3.6 General methodological considerations.** A significant number of the included studies exhibited general methodological weaknesses. All studies relied on participants to self-select for the intervention. This may have led to bias in the sample as potentially more motivated individuals could be more likely to self-enrol. The participants that took part in interventions that were delivered during normal working hours/shifts may have different motivations to those studies that required extra time or effort to participate.

Many of the studies were predominately female which could have contributed to participant bias. It is not known if there are true the gender differences in the experience of mental health professionals. However, the predominantly female sample population, raises questions regarding the gender representativeness of included studies.

A further consideration is the variation in duration of interventions. Although the results suggest further research into developing briefer, and therefore potentially more acceptable versions of the interventions, it could be the case that the studies which failed to find a significant effect were influenced by short treatment duration. For example, no significant improvements were found for burnout or follow-up engagement in valued living following a 2-day ACT training course (Clarke *et al.*, 2015). Additionally, as shown in Table 2, there was variability to the degree to which homework was set, completed and monitored. The emphasis and encouragement of homework and the degree to which participants completed homework is an extraneous variable not controlled for in the studies.

### **3.4 Study Outcomes**

As described, due to the variety of outcome measures used by the studies, the term 'emotional wellbeing' is used. Each study measured more than one outcome measure to assess self-compassion, depression, anxiety, stress, burnout or mindfulness. The most used outcome measures in the 22 studies were the SCS and PSS (both used by 10 studies) and FFMQ (six studies).

Table 5 describes within-group and between-group (where applicable) effect sizes for the studies. Cohen's *d* (Cohen, 1988) was calculated for within-group effect sizes and a formula suggested by Morris (2008) was used to calculate effect sizes for between-group differences where the sample sizes differ. This allowed for the outcomes of each study to be compared more easily. Four studies (Hopkins and Proeve, 2013; Marx *et al.*, 2014; Moore, 2008 and Ruths *et al.*, 2013) did not provide enough data for the effect sizes to be calculated.

In terms of the effect sizes of the three most-used outcome measures, the effect of the interventions on self-compassion scores for within-groups mostly showed a small effect size (six studies), with two studies reporting medium effect size and two studies reporting a large effect size. Between-group effect sizes ranged from small-large for the 3 studies which used SCS and had a control group.

Furthermore, medium-large effects on perceived stress were calculated for six studies and a small effect size in one study was reported. Likewise, medium-large effect sizes were calculated for mindfulness in four studies. Effect sizes were unable to be calculated for the remainder of the studies that used PSS or FFMQ as an outcome measure due to the lack of data reported.

**3.4.1 Do compassion-based interventions improve emotional wellbeing in mental health professionals?** Three studies examined the impact on emotional wellbeing of mental health professionals of compassion-based interventions (Beaumont *et al.*, 2017; Finlay-Jones *et al.*, 2016; Eriksson *et al.*, 2018). Two studies delivered intervention online (Eriksson *et al.*, 2018; Finlay-Jones *et al.*, 2016) and one in a group setting (Beaumont *et al.*, 2017).

One study did not provide information regarding the who was delivering the intervention (Beaumont *et al.*, 2017), a significant limitation that could have implications on treatment fidelity. Two studies did not report a power calculation (Beaumont *et al.*, 2017; Eriksson *et al.*, 2018).

Only one study used a control group (Eriksson *et al.*, 2018), with a reasonable sample size and used randomisation. Following Mindful Self-Compassion Training, a large effect size for self-compassion, mindfulness and perceived stress scores and a medium effect size for burnout were calculated (see Table 5 for effect sizes). Overall, this study was of high quality and was one of the highest-rated studies when using the quality assessment tool.

The two studies that did not use a control group had mixed methodological quality. Beaumont *et al.* (2017) concluded that following the compassionate mind training, there was a significant increase in total self-compassion and reduction in self-critical judgement scores. Personal distress scores did not significantly decrease (as measured by the Interpersonal Reactivity Index). Finlay-Jones *et al.*, 2016 (Self-Compassion Online) reported significant increases in self-compassion and happiness, as well as significant decreases in depression symptoms and stress, with medium-large effect sizes. No significant reduction was observed for anxiety scores. Both studies described well the intervention delivered and how adaptations were made (See Table 2 for further information on interventions). Both studies did not take into consideration possible confounding factors into their analysis, however both used appropriate statistical analysis.

Finlay-Jones *et al.*, (2016) had a 12-week follow-up in which small-moderate effect sizes were reported for all outcome measures. A follow-up assessment in Beaumont *et al.*, 2017 and Eriksson *et al.*, 2018 would have been desirable to examine if the positive effects reported were maintained.

The drop-out rate was reasonably high for these studies. Only 54% of participants completed post-intervention outcome measures in Finlay Jones *et al.*, (2016) study and the rate of drop-out in Beaumont *et al.*, (2017) meant that the numbers of a potential control group were too low to be included in analysis, undermining the methodological quality of the study.

To conclude, the three studies that assessed whether self-compassion-based interventions are effective in the improvement of emotional wellbeing in mental

health professionals reported significant improvements stress, self-compassion, burnout and depression. In one study (Beaumont *et al.*, 2017), significant improvements were reported for self-compassion and compassion for others, but no significant post-intervention differences on interpersonal reactivity (personal distress) were reported. The inclusion of more outcome measures to assess emotional wellbeing would allow for the effects of Compassionate Mind Training to be further examined.

**3.4.2 Do mindfulness-based Interventions improve emotional wellbeing in mental health professionals?** 13 studies examined the effectiveness of mindfulness-based interventions on the emotional wellbeing of mental health professionals (Brady *et al.*, 2012; Dobie *et al.*, 2015; Hopkins *et al.*, 2013; Hallman *et al.*, 2017; Marx *et al.*, 2014; Moore, 2008; Raab *et al.*, 2015; Razzaque & Wood, 2016; Rimes & Wingrove, 2011; Ruths *et al.*, 2013; Shapiro *et al.*, 2007; Suyi *et al.*, 2017 and Yang *et al.*, 2018). The interventions examined include MBSR, MBCT and a mindfulness-based retreat. The studies varied in the extent of adaptation of the standard protocol (See Table 2 for more information on interventions). Most commonly, MBSR was reduced from the standard 8-week session format to briefer versions, although adaptations differed between studies.

**3.4.2.1 MBSR.** Seven studies evaluated MBSR (Brady *et al.*, Dobie *et al.*, 2015; Hallman *et al.*, 2014; Raab *et al.*, 2015; Shapiro *et al.*, 2007; Suyi *et al.*, 2017; Yang *et al.*, 2018). All studies described the intervention fully and used appropriate statistical analyses. None of the studies reported conducting a power calculation. Two studies used control groups. Of these, one study used randomisation of the sample (Yang *et al.*, 2018) and the other was non-randomised (Shapiro *et al.*, 2007). In Shapiro *et al.* (2007), non-randomisation means both groups may not have been representative of the population, as well as introducing motivational bias in the participants' self-selection into groups. Both studies used different outcome measures, but reported significant improvements in stress and anxiety, with large effect sizes, as well as depression and rumination, with medium-large effect sizes.

Significant improvements were reported in self-compassion scores (Shapiro *et al.*, 2007). Yang *et al.* (2018) did not measure self-compassion.

Of the remaining five studies that did not use a control group, methodological quality was between 50-58% of the quality assessment. Statistically significant improvements were found for stress (Brady *et al.*, 2012; Hallman *et al.*, 2014; Suyi *et al.*, 2017), with small-medium effect sizes. Likewise, there were significant reductions in depression and anxiety (Dobie *et al.*, 2015) and a large effect size reported. Four of the studies that did not use a control group measured mindfulness. Three of these studies reported significant improvement in mindfulness skills (Brady *et al.*, 2012; Hallman *et al.*, 2014; Suyi *et al.*, 2017) and one study did not find significant improvements in mindfulness abilities (Dobie *et al.*, 2015). All three studies that included a burnout outcome measure reported no significant improvements post-MBSR (Brady *et al.*, 2012; Raab *et al.*, 2015; Suyi *et al.*, 2017).

Of the five studies that did not use a control group, only two measured self-compassion. Significant improvements in self-compassion were reported in both studies (Raab *et al.*, 2015; Suyi *et al.*, 2017).

**3.4.2.2 Mindfulness.** Two studies evaluated an adapted mindfulness programme developed by the authors (Moore, 2008; Razzaque & Wood, 2016). Both reported statistically significant improvements in mindfulness. One study (Razzaque & Wood, 2016) reported significant differences in burnout scores post-intervention and although Moore (2008) did not examine burnout. No significant improvements were found for stress. Neither study found significant improvements in self-compassion. Neither study used a control group, nor accounted for potential confounders nor completed power calculations.

**3.4.2.3 MBCT.** Four studies examined the effectiveness of MBCT on emotional wellbeing (Hopkins & Proeve, 2013; Marx *et al.*, 2014; Rimes & Wingrove, 2011; Ruths *et al.*, 2013). None of the studies used a control group or completed a power calculation.

Following MBCT, one study reported significant improvements that were maintained at 3-month follow-up (Marx *et al.*, 2014) whereas another reported no significant impact on stress (Hopkins & Proeve, 2013). In comparing the methodological quality between these two studies, Marx *et al.* (2014) completed an intention-to-treat analysis which has the benefit of giving a more reliable assessment of real intervention effectiveness. Hopkins and Proeve (2013) used a small sample size and did not report a power calculation so it is difficult to know if the sample was a large enough to detect an effect.

Post-MBCT mindfulness skills improved varied across the studies. One study (Hopkins & Proeve, 2013) reported improvement on only three of five subscales on a mindfulness measures (FFMQ), whereas Rimes and Wingrove (2011) reported significant improvement on all five subscales. In another study (Ruth *et al.*, 2013), improvements in mindfulness skills were shown to be sustained at 20-week follow-up and 18-month follow up (de Zoysa *et al.*, 2014). Further studies with longer follow-up periods would have been helpful to assess the sustained impact of this intervention.

Significant decreases in rumination (Rimes & Wingrove, 2011) and improvements in psychological well-being, (Ruths *et al.*, 2013) were reported, however this was not maintained at 18-month follow-up. No significant improvements were found in state or trait anxiety post-intervention or at 3-month follow up (Ruths *et al.*, 2013). Two studies reported significant improvements in self-compassion post-MBCT (Marx *et al.*, 2014; Rimes & Wingrove, 2011), with improvements sustained at 3-month follow-up (Marx *et al.*, 2014).

Rimes and Wingrove (2011) took into consideration potential within-group differences in their analysis. As the participants were trainee Clinical Psychologists,

the authors suggested that trainees at different stages in their programme may face different demands and this warrants consideration in the analysis. Although differences in the outcome measures between the year groups were reported, the numbers in each year group varied (with as little as five participants in the 3<sup>rd</sup> year group). As a result, these year group differences should be viewed as preliminary evidence for the effectiveness of interventions at different stages of training and with caution due to the absence of a control group, however it raises questions about the potential utility of examining differences in emotional wellbeing in mental health professionals at different stages in their career.

To conclude, from the 13 studies examining mindfulness-based interventions, the majority reported significant improvements in stress, anxiety, depression, self-compassion and mindfulness. Results on burnout measures were more mixed with three studies finding no significant improvement on burnout, whereas one study did. The lack of comparison groups, small sample sizes and inconsistency in follow-ups are substantial methodological weakness and thus, caution should be taken when interpreting these results.

### **3.4.3 Do interventions that include elements of both self-compassion and mindfulness improve emotional wellbeing in mental health professionals?**

Five studies reported on the effectiveness of ACT training on the emotional wellbeing of Clinical Psychology trainees (Clarke *et al.*, 2015; Dereix-Calonge *et al.*, 2019; Hayes *et al.*, 2004; Pakenham, 2015; Stafford-Brown & Pakenham, 2012). Only one study did not use a control group (Pakenham, 2015). This contrasts with the other studies described in the previous sections where the majority did not use a control group. Randomisation of the sample were conducted in three of the studies (Clarke *et al.*, 2015; Dereix-Calonge *et al.*, 2019; Hayes *et al.*, 2004). All studies provided full descriptions of the interventions. Two studies (Hayes *et al.*, 2004; Pakenham, 2015) did not provide enough information to conclude that there were trained professionals delivering the intervention, which may have affected the quality of the intervention.

Two studies used burnout as an outcome measure with different results. One study reported no significant changes (Clarke *et al.*, 2015) whilst another reported significant improvement post-intervention and at follow-up compared to control group (Hayes *et al.*, 2004). Neither study reported power calculations. The sample sizes differed, with Clarke *et al.* (2015) having 50 more participants. Both studies used a workshop-based approach (1-day in Hayes *et al.*, 2004 and 2-day in Clarke *et al.*, 2015).

Psychological distress did not significantly improve following a 2-day ACT training workshop (Clarke *et al.*, 2015) or 12 weekly 2-hour ACT workshops (Pakenham, 2015), but did improve following an ACT (weekly 3-hour sessions for 4 weeks) stress management group and were significantly different to a wait-list control group, with results maintained at 10-week follow-up (Stafford-Brown and Pakenham, 2012). This highlights that further research to examine the effects of the various intervention delivery methods is required.

Statistically significant differences between an ACT group (2-hour weekly group for 6 weeks) and wait-list control were reported for depression and anxiety (Dereix-

Calonge *et al.*, 2019). Levels of stress did not significantly differ from pre-intervention following 2-hour weekly workshops for 12 weeks (Pakenham, 2015).

In three of the studies that examined valued living, a reduction in the frequency of behaviours obstructing daily living (Dereix-Calonge *et al.*, 2019), an increase in valued living (Stafford Brown & Pakenham, 2012) and no significant difference in valued living (Clarke *et al.*, 2015) were reported post-intervention. The methodological quality of these three studies was similar and of generally high quality. Of note, following a group-based adapted ACT intervention, Dereix-Calonge *et al.* (2019) reported that perseverative thinking significantly reduced and progress towards values increased. In the analysis, the authors took into consideration the participants that scored the highest in depression and anxiety measure scores pre-treatment. They reported that the intervention was most effective for those participants with high scores on emotional symptoms (DASS scores). There was no follow-up assessment however, meaning conclusions regarding the sustained benefit on emotional wellbeing cannot be made.

Lastly, only one study was included in this review that examined a DBT skills training group (Robins *et al.*, 2019). Results were favourable and significantly higher increases in all outcome measures were reported for burnout, emotional stability, acceptance, stress and mindfulness in comparison to the control group. Although the presence of a control group increases the validity of this study, the sample was not randomised. The authors described the intervention as a pilot study and for the purposes of the present review, it is unfortunate there were no additional research on DBT to consider.

To conclude, there are promising preliminary results for ACT and DBT interventions in the emotional wellbeing of mental health professionals. The studies were of high methodological quality and most used a control group, increasing the validity of the results. As these studies in this population were preliminary, the encouraging results highlight the need the need for more research to explore these variables.

Table 5.

*Within-Group and Between-Group Effect Sizes: Baseline to Post-Intervention)*

(Effect sizes calculated by this review's author)

<u>Study</u>	<u>Within-group Effect Sizes</u>	<u>Between-group Effect Sizes</u> Using Morris (2008) formula recommendations.
<b>1. Beaumont, 2017 (UK)</b>	<ul style="list-style-type: none"> <li>○ SCS: <math>d = -0.47</math></li> <li>○ Compassion for Others: <math>d = -0.35</math></li> <li>○ Interpersonal Reactivity:               <ul style="list-style-type: none"> <li>- Empathic concern: <math>d = -0.10</math></li> <li>- Fantasy: <math>d = -0.05</math></li> <li>- Perspective taking <math>d = 0.32</math></li> <li>- Personal distress: <math>d = 0.52</math></li> </ul> </li> </ul>	N/A
<b>2. Brady, 2012 (U.S.A)</b>	<ul style="list-style-type: none"> <li>○ MHPSS: <math>d = 0.72</math></li> <li>○ TMS: <math>d = -0.66</math></li> <li>○ MBI:               <ul style="list-style-type: none"> <li>- Emotional exhaustion: <math>d = 0.50</math></li> <li>- Depersonalization: <math>d = 0.24</math></li> <li>- Personal accomplishment: <math>d = -0.30</math></li> </ul> </li> </ul>	N/A

	<ul style="list-style-type: none"> <li>○ SOSS: <math>d = -0.56</math></li> </ul>	
<p><b>3. Clarke, 2015 (UK)</b></p>	<ul style="list-style-type: none"> <li>○ MBI: Intervention (ACT): <math>d = -0.14</math> Control (Psychoeducation): <math>d = -0.17</math></li> <li>○ GHQ: Intervention: <math>d = -0.09</math> Control: <math>d = 0.08</math></li> <li>○ VLQ: Intervention: <math>d = 0.48</math> Control: <math>d = 0.05</math></li> </ul>	<ul style="list-style-type: none"> <li>○ MBI: <math>-0.002</math></li> <li>○ GHQ: <math>0.183</math></li> <li>○ VLQ: <math>-0.37</math></li> </ul>
<p><b>4. Dereix-Calonge, 2019 (Colombia)</b></p>	<ul style="list-style-type: none"> <li>○ DASS: Intervention, <math>d = 0.20</math> Control, <math>d = -0.46</math></li> <li>○ VQ Progress: Intervention, <math>d = -0.07</math> Control: <math>d = 0.30</math></li> <li>○ VQ Obstruction: Intervention, <math>d = 0.05</math> Control, <math>d = -0.47</math></li> <li>○ PTQ: Intervention: <math>d = 0.42</math></li> </ul>	<ul style="list-style-type: none"> <li>○ DASS: <math>d = -0.74</math></li> <li>○ VQ Progress: <math>d = 0.33</math></li> <li>○ VQ Obstruction: <math>d = -0.50</math></li> <li>○ PTQ: <math>d = -0.61</math></li> <li>○ PTQ-CPT: <math>d = -0.88</math></li> </ul>

	<p>Control: <math>d = -0.16</math></p> <ul style="list-style-type: none"> <li>○ PTQ-CPT: Intervention: <math>d = 0.54</math> Control: <math>d = -0.16</math></li> </ul>	
<b>5. Dobie, 2015 (Australia)</b>	<ul style="list-style-type: none"> <li>○ DASS: <math>d = 0.98</math></li> <li>○ KIMS: <math>d = 0.43</math></li> </ul>	N/A
<b>6. Eriksson, 2018 (Sweden)</b>	<p>SCS: Intervention: <math>d = -0.85</math> Control: <math>d = 0.02</math></p> <p>FFMQ: Intervention: <math>d = -0.85</math> Control: <math>d = -0.15</math></p> <p>PSS: Intervention: <math>d = 0.87</math> Control: <math>d = 0.20</math></p> <p>SMBQ: Intervention: <math>d = 0.60</math> Control: <math>d = 0.08</math></p>	<p>SCS: <math>d = 0.87</math></p> <p>FFMQ: <math>d = 0.58</math></p> <p>PSS: <math>d = -0.53</math></p> <p>SMBQ: <math>d = -0.44</math></p>

<p><b>7. Finlay-Jones, 2016 (Australia)</b> Effect sizes calculated by the Finlay-Jones <i>et al.</i> 2016</p>	<p>SCS: <math>d = 0.86</math> PSS: <math>d = 0.52</math> AHI: <math>d = 0.59</math> DERS: <math>d = 0.62</math> DASS: Depression: <math>d = 0.54</math> Anxiety: <math>d = 0.23</math> Stress: <math>d = 0.85</math></p>	<p>N/A</p>
<p><b>8. Hallman, 2014 (U.S.A)</b></p>	<p>PSS: <math>d = -0.20</math> TMS: <math>d = 0.70</math></p>	<p>N/A</p>
<p><b>9. Hayes, 2004 (U.S.A)</b></p>	<p>MBI, (Depersonalization and Exhaustion subscales): ACT: <math>d = 0.23</math> Multicultural Training <math>d = 0.12</math> Educational control: <math>d = -0.22</math>  MBI, Accomplishment subscale: ACT: <math>d = -0.15</math> Multicultural Training <math>d = -0.01</math> Educational control: <math>d = -0.16</math></p>	<p>(ACT and educational control) MBI, Depersonalization and Exhaustion subscales: <math>d = -0.50</math> MBI, Accomplishment subscale: <math>d = 0.01</math></p>
<p><b>10. Hopkins, 2013 (Australia)</b></p>	<p>Study does not provide enough data for effect sizes to be calculated.</p>	<p>N/A</p>

11. Marx, 2014 (U.K)	Study does not provide enough data for effect sizes to be calculated.	N/A
12. Moore, 2008 (U.K)	Study does not provide enough data for effect sizes to be calculated,	N/A
13. Pakenham, 2015 (Australia)	MHPSS: $d = -0.25$ GHQ-28: $d = 0.16$ SCS: $d = -0.14$ AAQ: $d = 1.98$ FFMQ: $d = -0.59$ WBSI: $d = 0.65$ VLQ: $d = -0.85$	N/A
14. Raab, 2015 (Canada)	SCS: $d = -0.49$ MASLACHBI: Personal accomplishment: $d = -0.49$ Emotional exhaustion: $d = 0.20$ Depersonalisation: $d = 0.11$ QOLI: $d = -0.01$	N/A
15. Razzaque, 2016 (U.K)	FMI: $d = -1.23$  Not enough data to calculate effect size for other outcome measures.	N/A

<p><b>16. Rimes, 2011 (U.K)</b></p>	<p>PSS: unable to calculate due to limited reported data  HADS: unable to calculate due to limited reported data.  FFMQ: <math>d = -0.62</math>  SCS: <math>d = -0.49</math>  RRQ: <math>d = 0.58</math></p>	<p>N/A</p>
<p><b>17. Robins, 2019 (Australia)</b></p>	<p>MBI-SS: Exhaustion:  Intervention: <math>d = 0.77</math>  Control: <math>d = -0.17</math>  MBI-SS: Cynicism:  Intervention: <math>d = 0.44</math>  Control: <math>d = -0.29</math>    Work engagement: Vigour:  Intervention: <math>d = -0.53</math>  Control: <math>d = 0.17</math>    Work engagement: Dedication:  Intervention: <math>d = -0.24</math>  Control: <math>d = 0.19</math></p>	<p>MBI-SS: Exhaustion: <math>d = -0.85</math>;  Cynicism: <math>d = -0.732</math>  Work engagement: Vigour: <math>d = 0.70</math>;  Dedication: <math>d = 0.46</math>  GHQ-12: <math>d = -1.82</math>  Emotional stability: <math>d = -0.78</math>  AAQ-II: <math>d = -0.56</math>  MAAS: <math>d = 0.76</math>  MPHSS: Job demands <math>d = -0.90</math></p>

	<p><b>GHQ-12:</b> Intervention: <math>d = 1.32</math> Control: <math>d = -0.29</math></p> <p><b>Emotional stability:</b> Intervention: <math>d = 0.69</math> Control: <math>d = -0.01</math></p> <p><b>AAQ-II:</b> Intervention: <math>d = 0.44</math> Control: <math>d = -0.09</math></p> <p><b>MAAS:</b> Intervention: <math>d = -0.73</math> Control: <math>d = 0.13</math></p> <p><b>MPHSS: Job demands:</b> Intervention: <math>d = 0.48</math> Control: <math>d = -0.31</math></p>	
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<p><b>18. Ruths, 2013 (U.K.)</b></p>	<p>Effect sizes cannot be calculated due to lack of reported data.</p>	<p>N/A</p>
<p><b>19. Shapiro, 2007 (U.S.A)</b></p>	<p>MAAS: Intervention: <math>d = -0.37</math> Control: <math>d = 0.40</math></p> <p>PANAS: Positive affect: Intervention: <math>d = -0.68</math> Control: <math>d = 0.28</math></p> <p>PANAS: Negative affect: Intervention: <math>d = 0.56</math> Control: <math>d = 0.05</math></p> <p>STAI, present Intervention: <math>d = 0.87</math> Control: <math>d = -0.08</math></p>	<p>MAAS: <math>d = 0.70</math> PANAS: Positive affect: <math>d = 1.09</math>; Negative affect: <math>d = -0.49</math> STAI, present: <math>d = -0.93</math> PSS: <math>d = -0.99</math> RRQ: <math>d = -0.67</math> SCS: <math>d = 0.78</math></p>

	<p>PSS: Intervention: <math>d = 0.95</math> Control: <math>d = -0.16</math></p> <p>RRQ: Intervention: <math>d = 0.87</math> Control: <math>d = 0.04</math></p> <p>SCS: Intervention: <math>d = -0.73</math> Control: <math>d = 0.05</math></p>	
<p><b>20. Stafford – Brown, 2012 (Australia)</b></p>	<p>MHPSS (professional self-doubt): Intervention: <math>d = 0.35</math> Control: <math>d = -0.04</math></p> <p>GHQ-28: Intervention: <math>d = 0.40</math> Control: <math>d = -0.14</math></p> <p>SCS: Intervention: <math>d = -0.36</math> Control: <math>d = -0.18</math></p> <p>AAQ: Intervention: <math>d = -0.42</math> Control: <math>d = -0.11</math></p> <p>FFMQ:</p>	<p>MHPSS (professional self-doubt): <math>d = -0.42</math> GHQ-28: <math>d = -0.53</math> SCS: <math>d = 0.17</math> AAQ: <math>d = 0.34</math> FFMQ: <math>d = 0.51</math> WBSI: <math>d = -0.44</math> VLQ: <math>d = 0.83</math> SWLS: <math>d = 0.28</math></p>

	<p>Intervention: <math>d = -0.64</math> Control: <math>d = -0.12</math></p> <p>WBSI: Intervention: <math>d = 0.60</math> Control: <math>d = 0.20</math></p> <p>VLQ: Intervention: <math>d = -0.41</math> Control: <math>d = 0.42</math></p> <p>SWLS: Intervention: <math>d = -0.34</math> Control: <math>d = -0.03</math></p>	
<b>21. Suyi, 2017 (Singapore)</b>	<p>SCS – SF: <math>d = -0.49</math></p> <p>PSS: <math>d = 0.53</math></p> <p><i>Effect sizes of additional outcome measures are unable to be calculated.</i></p>	N/A
<b>22. Yang, 2018 (China)</b>	<p>SCL – 90: Intervention: <math>d = 0.69</math> Control: <math>d = 0.08</math></p> <p>SDS: Intervention: <math>d = 1.19</math> Control: <math>d = 0.25</math></p>	<p>SCL – 90: <math>d = -0.57</math> SDS: <math>d = -0.97</math> SAS: <math>d = -1.10</math> NSS: <math>d = -1.69</math></p>

	SAS: Intervention: $d = 1.27$ Control: $d = 0.16$  NSS: Intervention: $d = 1.80$ Control: $d = 0.21$	
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*Note.* Positive  $d$ 's indicate increase in score and negative  $d$ 's indicate decrease in score.

*Note.*  $d = 0.2$  small effect size;  $d = 0.5$  medium effect size;  $d = 0.8$  large effect size (Cohen, 1988).

## 4. Discussion

### 4.1 Summary of results

The current review aimed to summarise and critically evaluate research studies that examined the impact of self-compassion-focused and mindfulness-based interventions on the emotional wellbeing of mental health professionals. 22 studies were included in the current review and were assessed using an adapted version of Downs and Black's checklist (1998) to critically evaluate methodological quality.

The importance of healthcare professionals' emotional wellbeing is widely documented (Ruotsalainen *et al.*, 2015), particularly in mental health professionals (Morse *et al.*, 2012), both for their own wellbeing, as well as increasing quality of care to patients (Salyers *et al.*, 2018). To further review literature in this area, it is appropriate to group healthcare professionals by employment category due to the variety of tasks and demands of different healthcare roles (Johnson *et al.*, 2018).

There is an increasing amount of research examining self-compassion and mindfulness-based approaches. Two relevant reviews have been conducted. Firstly, Sinclair *et al.*, (2017) examined the effectiveness of these interventions in reducing stress levels in healthcare professionals. Another review (Rudaz *et al.*, 2017) evaluated these interventions specifically in mental health professionals, although this review included several unsuitable studies. The current review sought to overcome limitations of previous reviews and to update and extend understanding.

Overall, the studies reported preliminary evidence suggesting that self-compassion and mindfulness-based therapies are effective in improving emotional wellbeing in mental health professionals. Results showed significant improvements in stress, depression and anxiety, as well as increases in process outcomes such as mindfulness and self-compassion. The impact on overall psychological distress and burnout was more mixed. Substantial differences in the delivery format and duration of intervention may explain these results. The total amount of intervention received varies from 1-day workshops to 12 weekly 2-hour sessions.

These results are somewhat consistent with a previous review (Rudaz *et al.*, 2017) in which evidence for improving burnout was more mixed. In contrast with the Rudaz *et al.* (2017) review however, the present review found more consistent evidence for mindfulness and self-compassion-based approaches on stress and self-compassion. Rudaz *et al.* (2017) highlighted that some studies reported improvement in the mechanisms of change factors, such as psychological flexibility, self-compassion and mindfulness, but not on the outcomes of wellbeing, such as stress or burnout. This suggests the relative importance of systemic factors, such as workload and lack of support, in the emotional wellbeing in mental health professionals (Burrows & McGrath, 2000). This contrasts with the present review in which 21 of 22 of the studies reported improvements in both emotional wellbeing outcome measures and mechanisms of change factors. This could suggest that self-compassion and mindfulness-based interventions serve as a protective factor to buffer against adverse systemic factors. Given that environmental factors such as poor team cohesion and higher workload are linked to burnout (Lasalvia *et al.*, 2009), it is important to recognise and harness protective factors to build personal resilience to cope.

In the previous review (Sinclair *et al.*, 2017), most of the studies reported only the total self-compassion score, meaning the effect on individual subscales of the self-compassion measure (SCS) cannot be examined. It has been suggested that MBSR and related therapies just influence the mindfulness subscale of the SCS (Barnard & Curry, 2011) which could have implications of the theoretical links between self-compassion and mindfulness. In the present review, some of the studies did report upon the individual subscales of the SCS and highlighted improvements in the other subscales, such as self-kindness and self-judgement (Beaumont *et al.*, 2017; Raab *et al.*, 2015). This reinforces the idea that although mindfulness and self-compassion share similar skillsets (Raab, 2014), they are two separate constructs that can be utilised in these interventions, with preliminary research suggesting self-compassion is the mediating factor between mindfulness and improved emotional wellbeing (Shapiro *et al.*, 2005).

The methodological quality of the studies was also mixed, with the main limitations being lack of control groups, lack of follow-up assessment, small sample size and no power calculations. The heterogeneity in protocols due to study-specific adaptations increases the difficulty in directly comparing the results. The lack of control group in 14 of the studies is a substantial limitation in the study designs. Without a control group, conclusions are less certain as there may be doubt if the results were due to non-controlled variables or simply the passage of time. Uncertainty regarding the qualifications of the trainers, recruitment methods and vague information regarding adaptations to protocol makes it difficult to compare results of these studies with confidence and without concern. Despite this, this is a relatively new area of research and preliminary results are promising for the promotion of emotional wellbeing in mental health professionals.

#### ***4.2 Implications for Clinical Practice***

As 10 of the studies' sample were trainee mental health professionals, the results have implications for embedding compassion-related and mindfulness-based training into courses. Hopkins and Proeve (2013) suggest that by having MBCT as part of training, this led to improvement in emotional wellbeing, whilst also exposing the trainee to the therapy to aid with their learning and knowledge. Likewise, the use of 'self-as-laboratory' (Pakenham, 2015) in ACT training highlights the acceptability of this approach of improving one's own personal psychological health whilst training in an intervention.

This review also brings together initial evidence on adaptation of 'brief' versions of interventions. Brief versions that can be delivered with more flexibility, such as in ward settings, on training courses and within the working day would be advantageous for reaching a larger number of mental health professionals. This is in line with the Scottish Government's Mental Health Strategy (2017) which focuses on prevention and early intervention. It could be argued that more accessible interventions will work towards increased prevention of psychological distress. Similarly, the Mental Health Strategy has a focus on access to treatment and so briefer and flexible interventions will likely improve access.

Additionally, the use of online interventions in two of the studies in the current review suggests preliminary evidence for acceptability of online adaptations of interventions. This has the potential to be easier to access for time-constrained mental health professionals. Likewise, as most interventions were delivered as a group/workshop format, this could also be more appropriate when working with staff groups, rather than individual therapy.

### ***4.3 Future Research***

Future research of a high methodological quality is needed to further evidence the efficacy and acceptability of self-compassion and mindfulness-based interventions for mental health professionals. This would require larger sample sizes using power calculations and control groups. Although the adaptations to some of the studies (e.g., the use of online materials) have been described as beneficial to add to the understanding of acceptable methods of intervention delivery in this population, it is important that the research is first established using standardised and protocol-based interventions.

It would also be important to consider mental health professionals as not one homogenous group but a group of varying roles, demands and daily working lives. Future research using further sub-groups (e.g., by job role, job setting or trainee status) will add to the understanding of improving emotional wellbeing in mental health professionals.

### ***4.4 Limitations and Potential Bias***

The heterogeneity in outcome measures meant that synthesis of the results was complex and limits the ability to make comparisons across the studies. Also, although the inclusion criteria stated that participants must be working in mental health settings, the heterogeneity of roles included in the studies could introduce bias into the sample. For example, the setting of an inpatient mental health ward will be different to a trainee on placement in an outpatient department. Despite this, the nature of working with clients in these settings elicits similar challenges

and the skill sets required of the professional is often transferable to different mental health settings.

Similarly, this review, due to the nature of the studies, did not examine within-group job role and pressure differences to a great extent. Only one study (Rimes & Wingrove, 2011) took into consideration the different year groups within the trainee sample used and highlighted different pressures that may impact upon emotional wellbeing in different year groups, as well as differing placement experiences.

In comparison to research examining intervention effectiveness for clinical populations where there are already elevated levels of psychological distress, the studies in the current review selected participants by profession, rather than levels of distress. It is important to bear in mind that mental health professionals may also have clinical levels of psychological distress and as such, the participant samples would contain a wider range of distress levels. Only one study (Dereix-Calonge *et al.*, 2019) completed sub-group analysis for those participants that scored highest in psychological distress. Therefore, it is not apparent if the studies in this review were targeting distress or promoting prevention.

#### **4.5 Conclusion**

The current review aims to summarise and critically evaluate research examining self-compassion and mindfulness-based interventions in improving the emotional wellbeing of mental health professionals. This review highlights the preliminary positive results of the interventions; however, replication studies with longer follow-up research is needed. Further research is needed to examine the effectiveness of the different components of the interventions on sub-groups of mental health professionals, as well as giving more consideration to the fact that interventions are being used both as a response to already elevated levels of distress, as well as serving a protective mechanism by building resilience to buffer environmental factors.

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\* denotes that the reference was an included study in the current systematic review.

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## Chapter 2: Empirical Study

The relationships between self-compassion, emotional intelligence, depression, anxiety and carer burden in informal family caregivers of individuals with a diagnosis of dementia.

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## Abstract

**Objective:** Research highlights the impact of carer burden on the emotional wellbeing of family caregivers of individuals with a diagnosis of dementia. Less research has been conducted to examine protective factors against the impact of carer burden. It has been suggested that self-compassion (Hickey *et al.*, 2017) and emotional intelligence (Mikojczak *et al.*, 2006) can serve as moderating factors in other caregiving populations, however research to date has not examined this in family caregivers of people with dementia. The current study therefore aimed to explore the role of self-compassion and emotional intelligence, and their relationships with carer burden, anxiety and depression in family caregivers of individuals living with dementia.

**Methods:** A cross-sectional, quantitative design was used. Participants ( $N = 164$ ) completed five online questionnaires examining carer burden, depression, anxiety, emotional intelligence and self-compassion. Hypotheses were tested using correlational, regression and moderation analyses.

**Results:** Higher carer burden was associated with and predicted lower levels of depression and anxiety. Higher self-compassion and emotional intelligence were associated and predicted lower levels of depression and anxiety. Self-compassion and emotional intelligence did not moderate the relationships between carer burden and depression and anxiety.

**Conclusions:** The study provided evidence that self-compassion and emotional intelligence can predict mental health symptoms in family caregivers experiencing high levels of carer burden. This suggests that individual differences are important to consider when evaluating resilience in this population. Additional research is required to better understand the interactions between these variables in family caregivers.

**Keywords:** Emotional intelligence, self-compassion, carer burden, anxiety, depression, family caregivers

## Abbreviations

GAD-7	The Generalised Anxiety Disorder Questionnaire
PHQ-9	The Patient Health Questionnaire
SCS	The Self-Compassion Scale
SSEIT	The Schutte Self-report Emotional Intelligence Test
ZBI-S	The Zarit Burden Interview: Short Form

## 1. Introduction

'Dementia' describes a group of symptoms that include difficulties with memory, cognitive abilities, behaviour and problem-solving skills (Robinson *et al.*, 2015).

There are an estimated 883,100 people with a diagnosis of dementia in the UK, with 510,600 having severe dementia (Wittenberg *et al.*, 2019). The overall number of individuals receiving a dementia diagnosis is forecast to rise to 1.6 million by 2040 (Wittenberg *et al.*, 2019).

Family caregivers frequently called the 'invisible second patients' (Brodaty & Donkin, 2009) tend to be family members who provide most of the care their relative requires (Banerjee *et al.*, 2003). There are an estimated 706,000 informal carers for individuals living with dementia in the UK, with an estimated 1.7 million informal carers needed by 2050 due to an ageing population (Lewis *et al.*, 2014).

Informal family carers of relatives with dementia face many challenges, such as stigma and isolation (Greenwood *et al.*, 2018). Marginalisation from society and "living on the fringes" is identified as a common experience for informal carers, contributing to their sense of "living a different life" from society (Daly *et al.*, 2013). Adding to a sense of social exclusion and isolation, informal family caregivers find it difficult to engage in leisure activities due to accessibility, cost, and their own negative perceptions of the situation (Innes *et al.*, 2015).

Family caregivers are often in their own employment whilst navigating through caring responsibilities (Carers UK, 2014). In a survey of 85 employers, 89% felt that dementia caregiving can lead to reduced workplace productivity and a loss of employees (Carers UK, 2014). In a survey of 1000 individual dementia family caregivers, 53% said that their employment had been adversely impacted by the consequences of their caregivers, such as increased levels of tiredness (Carers UK, 2014). Despite this, only 20% said they received any information or advice from health and/or mental health professionals (Carers UK, 2014). Evidence has highlighted that family caregivers for relatives with dementia experience

significantly greater impact than other types of family caregivers on their employment situations, as well as on physical and mental health (Ory *et al.*, 1999), experiencing increased stress, and depression (Cassie & Sanders, 2008). As a result, there has been an increasing amount of research to examine the impact that family caregiver has on emotional wellbeing to better understand and identify protective mechanisms as areas for intervention (Dickinson *et al.*, 2017; Farina *et al.*, 2017; Williams *et al.*, 2019).

### **1.1 The Impact of Carer Burden**

The phrase 'carer burden' is often used to define the stress and strain experienced by family caregivers because of the associated responsibilities of their caring role (Stucki & Mulvey, 2000; Zarit *et al.*, 1980). Research suggests that carer burden is associated with feelings of guilt, frustration and embarrassment (Springate & Tremont, 2014). Higher levels of carer burden are associated with higher levels of anxiety and depression (Garcia-Alberca *et al.*, 2012; Schulz *et al.*, 2008), lower levels of life satisfaction (Andren & Elmstahl, 2008) and quality of life in dementia caregivers (Sittironnarit *et al.*, 2020).

To meet the needs of family caregivers, there is evidence of psychological interventions for family caregivers of people with dementia, such as Cognitive Behavioural Therapy (Kishita *et al.*, 2018) and psychoeducational approaches in improving depression (Chu *et al.*, 2011) and distress (Hepburn *et al.*, 2005). For example, there is evidence of the effectiveness of a psychoeducational intervention (encouraging self-care and tolerating emotional distress) in reducing carer burden, depression and improving self-confidence following attendance at a two-hour weekly group session for 6 weeks (Terracciano *et al.*, in press).

There is also evidence for online psychoeducational courses/workshops developed for family caregivers of individuals with dementia in significantly improving depression, anxiety (Beauchamp *et al.*, 2005), carer burden (Nichols *et al.*, 2011) and decision making (Brennan *et al.*, 1995). This highlights that technology-based interventions can be effective, as well as acceptable, in this population.

Providing input for family caregivers at the early stages of dementia is important to help family caregivers accept the diagnosis and make future plans (Robinson *et al.*, 2005), such as preparing for the decline in cognitive abilities and the accompanying increase in caregiving tasks (Hepburn *et al.*, 2001). Indeed, research highlights the acceptability of an early-diagnosis intervention of dyadic counselling in a home setting (Whitlatch *et al.*, 2006). Despite this, barriers to acceptability of interventions include time constraints (Leung *et al.*, 2017) and family caregivers' poor health status (Liddle *et al.*, 2012). There is also evidence for mediation and guided imagery group programme in improving anxiety and depression in family caregivers of people with dementia (Jain *et al.*, 2014), as well as a yoga and meditation intervention (Waelde *et al.*, 2004).

Within a Stress-Diathesis Model, there are suggestions that individual personality characteristics influence responses to caregiving burden in family caregivers of relatives with dementia (Vitaliano *et al.*, 1991). Therefore, it is important to understand what specific factors or mechanisms of change protect or buffer the impact of carer burden to focus intervention development or to enhance/reduce certain personality vulnerabilities in the face of unchangeable circumstances, such as caregiving responsibilities.

### ***1.2 Self-compassion, Depression and Anxiety***

One potential protective factor is self-compassion. Self-compassion is conceptualised as having three main components: self-kindness (expressing kindness to oneself instead of self-criticism in the face of difficulty), common humanity (the understanding that failings and suffering are common to everyone and part of the experience), and mindful acceptance of difficult thoughts and feelings (Neff, 2003a).

Higher self-compassion is associated, with a large effect size, with lower depression, anxiety and stress across age groups (Krieger *et al.*, 2018; MacBeth & Gumley, 2012; Marsh *et al.*, 2018). Higher self-compassion can serve as a buffer against anxiety when faced with self-evaluative situations (e.g. public speaking or job interviews

(Neff *et al.*, 2007). There is evidence that self-compassion related therapies (compassion- focused therapy, mindfulness-based cognitive therapy, dialectical behavioural therapy, and acceptance and commitment therapy) are effective in increasing self-compassion, and reducing levels of depression and anxiety in both clinical and subclinical populations (Wilson *et al.*, 2019). This highlights that self-compassion can be a mechanism of change in psychological intervention.

It has been reported that higher levels of self-compassion are related to lower levels of caregiver burden and dysfunctional coping strategies in informal family caregivers of individuals with dementia (Lloyd *et al.*, 2019), supporting the theoretical concept that self-compassion can serve as a protective mechanism against carer burden. Lloyd *et al.*, (2019) examined how coping strategies impacted upon the relationship between carer burden and self-compassion; however, did not include any mental health measures. Given the links between both self-compassion and carer burden with anxiety and depression, research is needed to further examine the impact that self-compassion has on these mental health symptoms.

It has been reported that self-compassion can moderate (buffer) the strength of the relationship between stress and depression (Hickey *et al.*, 2017). For example, in a study of caregivers of patients with lung cancer, it was reported that self-compassion moderated the effect of caregiving stress and strain on symptoms of depression (Hsieh *et al.*, 2019). This suggests that self-compassion can act as a protective factor against the impact of caregiving stress on the mental health of informal family caregivers. To date, there has been no studies examining this in family caregivers of people with dementia.

Despite the evidence for self-compassion-based interventions in clinical and subclinical populations, there have been a limited number of studies in the dementia caregivers. A randomised controlled trial of yoga (included breathing exercises) and compassion meditation group programme has shown to be effective in improving quality of life, vitality and self-compassion in informal family caregivers of individuals with a dementia diagnosis (Danucalov *et al.*, 2015). Additionally, a

study examined the effectiveness of group compassion-focused therapy for couples where one of the partners had a diagnosis of dementia (Collins *et al.*, 2018). Following the six weekly group sessions, 50% of dementia family caregivers showed improvements in anxiety and 80% showed improvements in depression. The methodological quality of these studies was high and provides promising evidence for the self-compassion-based approaches in family caregivers.

### ***1.3 Emotional Intelligence, Depression and Anxiety***

In addition to self-compassion, emotional intelligence is another potential protective factor against the detrimental consequences of carer burden. Emotional intelligence is conceptualised as the expression, understanding and appraisal of emotions in oneself and in others, whilst using emotions to plan and solve problems (Salovey & Mayer, 1990). Emotional intelligence consists of two constructs of 'trait' and 'ability'. 'Trait' emotional intelligence is considered an emotion-related disposition most often measured through self-report, whereas ability emotional intelligence is considered a cognitive ability that is assessed through performance tests (Petrides, 2011). As such, 'ability' emotional intelligence refers to the ability to apply knowledge to a situation, whereas 'trait' emotional intelligence refers to the tendency and regularity of responding and using abilities in situations (Mikolajczak *et al.*, 2009). Most of the research into emotional intelligence and psychological health uses measures of 'trait' emotional intelligence to measure individual differences in styles of emotion-focused coping mechanisms. It is also acknowledged in the literature that 'trait' emotional intelligence is the most applied concept of emotional intelligence and as such, is most suitable in cross-sectional studies using real life populations (Mikolajczak *et al.*, 2009). 'Trait' emotional intelligence is also the concept of choice in this research area due to the limitations of and lack of validity of performance tests to measure 'ability' emotional intelligence (Matthews *et al.*, 2007).

Emotional intelligence has been shown to be negatively related to levels of depression and anxiety (Extremera & Pizarro, 2006). A meta-analysis, using 105 effect sizes, reported that emotional intelligence predicts mental health outcomes

( $r = .36$ , including depression, anxiety, and burnout) and psychosomatic health ( $r = .33$ ) in general population samples (Martins *et al.*, 2010). Furthermore, in a cross-sectional study of family caregivers of people with dementia, correlational analysis indicated that lower levels of emotional intelligence (trait) was associated with higher carer burden ( $r = -0.42$ ,  $p < 0.001$ ), depression ( $r = -0.46$ ,  $p < 0.001$ ) and anxiety ( $r = -0.44$ ,  $p < 0.001$ ) (Weaving *et al.*, 2014). This highlights the relationships between emotional intelligence, carer burden, anxiety, and depression, albeit with a relatively limited amount of research in the family caregiving populations.

In relation to a potential protective effect of emotional intelligence when coping with burnout and carer stress, correlational analysis indicated that in a sample of nurses, those who had higher trait emotional intelligence experienced lower levels of burnout ( $r = -.58$ ,  $p < .001$ ) (Mikolajczak *et al.*, 2007). Indeed, in a cross-sectional study using a student sample, emotional intelligence was reported to be negatively correlated with mental health problems ( $r = 0.76$ ,  $p < .001$ ) and significantly moderated the relationship between stress and self-report mental health (as measured by the Brief Symptom Inventory (Mikolajczak *et al.*, 2006). It is suggested that the students with higher emotional intelligence judged the stressful situation (an examination) as less threatening, highlighting that emotional intelligence can buffer (moderate) responses to stressful situations. This also explains why higher emotional intelligence provides resilience to stress and encourages better mental health.

In addition, another cross-sectional study using moderation analysis indicated that emotional intelligence significantly moderated the relationship between stress and mood (Mikolajczak *et al.*, 2009). This means that the presence of higher emotional intelligence scores was associated with less decreases in mood when faced with a stressful situation, such as an examination (Mikolajczak *et al.*, 2009). Emotional intelligence has also been associated with moderating the effects of chronic environmental sources of stress, such as long-term job stress (Mikolajczak *et al.*, 2007). This highlights the real-life positive impact of emotional intelligence on both

acute and chronic stressors. This also explains the theoretical pathway relating emotional intelligence to mental health.

In family caregivers of people with dementia, it has been suggested that emotional intelligence could act a moderator in appraising the caregiving responsibilities and strain as problematic, with an impact on mental health (Weaving *et al.*, 2014).

Despite the evidence of emotional intelligence being a potential protective factor, to date, no study has examined the moderator effect of emotional intelligence on the relationship between carer burden, anxiety, and depression in informal family caregivers of people with dementia.

#### **1.4 Study Aims**

This study aims to explore the relationships between carer burden, anxiety, depression, self-compassion and emotional intelligence in the family dementia caregiving population to expand the research on the predictive effect of carer burden on carer wellbeing. There has been little research examining the factors affecting individual differences in the appraisal and subsequent experience of caring for a relative with a diagnosis of dementia. Given the preliminary evidence of the potential protective factors of self-compassion and emotional intelligence, the purpose of this study was to also examine if these factors are moderators between carer burden and depression and anxiety. This is supported by a study stating the need for more research examining personality traits that influence informal caregiver wellbeing (Vasiliki & Phuong, 2015).

Hypotheses proposed:

1. Higher carer burden will be associated with higher anxiety and depression.
2. Higher self-compassion will be associated with lower anxiety and depression.
3. Higher emotional intelligence will be associated with lower anxiety and depression.

**Hypothesis 4.1.** Self-compassion will moderate the relationship between carer burden and anxiety.

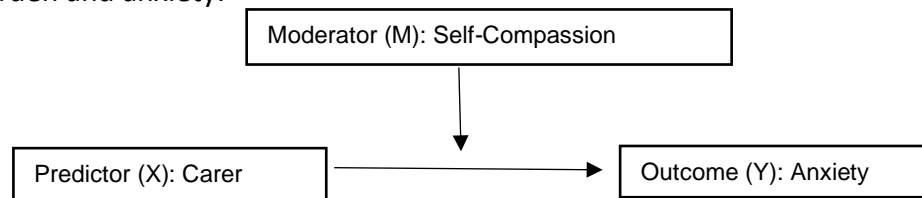


Figure 1. Model 1: Hypothesised moderating effect of self-compassion in the relationship between carer burnout and anxiety

**Hypothesis 4.2.** Self-compassion will moderate the relationship between carer burden and depression.

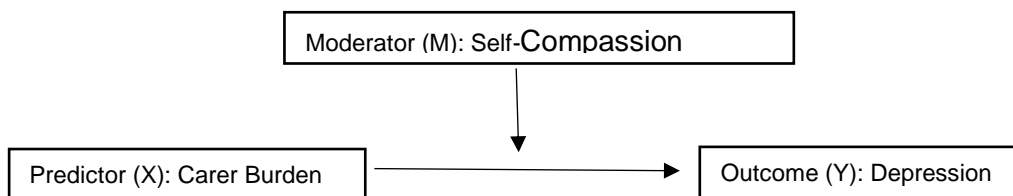


Figure 2. Model 2: Hypothesised moderating effect of self-compassion in the relationship between carer burden and depression.

**Hypothesis 4.3.** Emotional intelligence will moderate the relationship between carer burden and anxiety.

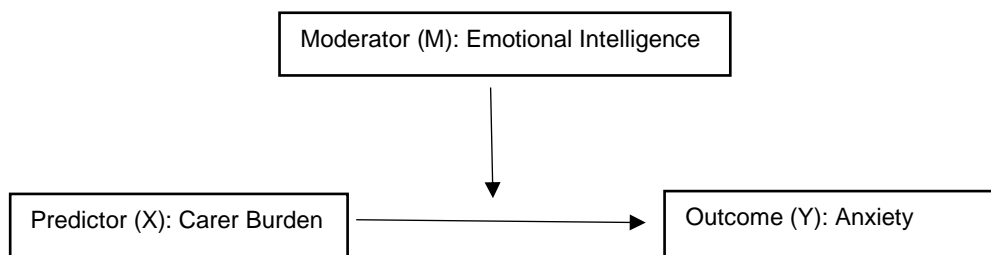


Figure 3: Model 3: Hypothesised moderating effect of emotional intelligence in the relationship between carer burden and anxiety.

**Hypothesis 4.4.** Emotional intelligence will moderate the relationship between carer burden and depression.

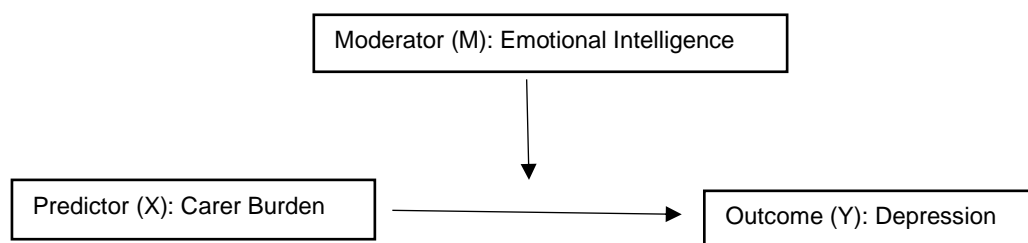


Figure 4: Model 4: Hypothesised moderating effect of emotional intelligence in the relationship between carer burden and depression.

## 2. Method

### 2.1 Design

The study used a non-experimental, cross-sectional design. Five questionnaires were used to measure self-compassion, emotional intelligence, anxiety, depression and carer burden. Participants also completed a demographic information form (See Appendix F).

### 2.2 Participants

Inclusion criteria were: identifying as carer to a family member with a diagnosis of dementia, being over the age of 18, fluent in English and able to provide informed consent. Although formal professional carers (e.g., nurses) were unable to participate, receiving carer-related benefits did not stop participation. Participants were 164 individuals (age range 26-85 years) who self-identify as a carer for a family member with a diagnosis of dementia. The mean age was 56.8 years (SD=12.22 and 89% of the sample were female. Most were caring for their mother (47.5%) or husband (26.8%) and just over half were living with the relative they were caring for (52.4%). Demographic characteristics of the sample are presented in Table 1.

## 2.3 Materials

**2.3.1 The Self-Compassion Scale (SCS; Neff, 2003a).** This 26 -item self-report scale measures self-compassion using six subscales: Self-Kindness, Self-Judgement, Common Humanity, Isolation, Mindfulness, and Over-Identification. The scale uses a five- point Likert scale. This ranges from 1 (almost never) through to 5 (most always). The total score is calculated by reverse scoring the self-judgement, over-identification and isolation scales and then using all the subscales to calculate a total mean. A total score of 1-2.5 would indicate low levels of self-compassion, 2.5-3.5 would suggest moderate, and 3.5-5.0 would indicate high levels (Neff, 2003a). It has been used in family dementia caregiving samples, highlighting that it is appropriate to use in this population (Lloyd *et al.*, 2019; Danucalov *et al.*, 2017). Good test-re-test reliability of 0.80 – 0.93 has been reported for the subscales (Neff, 2003a) Cronbach’s alpha has been reported at 0.96 (Werner *et al.*, 2012) suggesting good internal consistency. In the current study, internal consistency was excellent ( $\alpha = 0.95$ ).

**2.3.2. The Schutte Self Report Emotional Intelligence Test (SSEIT; Schutte et al., 1998).** The SSEIT is a 33-item self-report scale that measures trait emotional intelligence (Salovey and Mayer, 1990). There is a five-point Likert Scale from 1: strongly agree to 5: strongly disagree. Three items are reverse coded (questions , 38 and 33) and a total score is calculated. Although there are no set qualitative descriptors for the SSEIT, generally scores below 111 are considered low emotional intelligence and scores above 137 are considered high (Malouff, 2014). Good internal consistency has been reported with Cronbach’s alpha reported as 0.90 (Schutte *et al.*, 1998). In the current study, internal consistency was excellent ( $\alpha = 0.93$ ).

**2.3.3 The Patient Health Questionnaire (PHQ-9; Spitzer, Kroenke, & William, 1999).** The PHQ-9 is a 9-item questionnaire measuring symptoms of depression. A total score is calculated by the summation of the response. A total score of 5-9 suggests mild symptoms, 10-14 moderate, 15-19 moderately severe, and 20-27 severe symptoms. 88% sensitivity and specificity are reported (Spitzer *et al.*, 1999). Good discriminant validity has also been reported (Cameron *et al.*, 2008). It has been shown to be an acceptable measure to use within family dementia caregiver sample (Alfakhri *et al.*, 2018; Jennings *et al.*, 2015). Internal consistency was excellent in the current study ( $\alpha = 0.90$ ).

**2.3.4 The Generalised Anxiety Disorder Questionnaire (GAD-7; Spitzer et al., 2006).** The GAD-7 is a seven-item questionnaire measuring symptoms of anxiety. A total score of 5-9 indicates mild anxiety, 10-14 moderate anxiety and total scores above 15 indicating severe anxiety. Test specificity of 82% and test sensitivity of 89% has been reported (Spitzer *et al.*, 2006). It is frequently used in the family dementia caregiving population (Paredes *et al.*, 2015; Zimmerman *et al.*, 2018). Internal consistency was excellent in the current study ( $\alpha = 0.93$ ).

**2.3.5 The Zarit Burden Interview: Short Form (ZBI-S; Bedard et al., 2001).** The ZBI-S is a 12-item questionnaire that measures carer burden. There is a strong correlation between the short form and long form (Bedard *et al.*, 2001). The short form was used to reduce assessment burden. It is a 12-item measure that uses a 5-point Likert scale from 0: never to 4: nearly always. Higher scores indicate higher burden. Although there are not specific cut off points, a cut off-score of 13 has been suggested as indicative of carer burden (Gratao *et al.*, 2019) Internal consistency has been reported as very good ( $\alpha = 0.81$ ). In the current study, internal consistency was excellent ( $\alpha = 0.91$ ).

**2.3.6 Demographic Information.** Participants completed a demographic questionnaire (See Appendix F). Participants were asked to specify their age, gender, country of residence and relationship to the relative they care for. They were also asked to provide information regarding how many hours of care they provide and how long they have been a carer for this relative. In addition,

participants were asked how many years their relative has been diagnosed with dementia and the severity of the dementia.

#### **2.4 Procedure**

Participants were recruited online through social media and the 'Join Dementia Research' online platform used by the NHS to recruit participants into dementia research. To ensure that those who do not have access to the internet were able to participate, recruitment was also attempted in local NHS clinics through leaflets and posters. Online Surveys (previously 'Bristol Online Surveys') was used to host the study. Participants were provided with a link to follow to complete the study. Participants read the information sheet and were asked to give consent. The participants were then provided with the questionnaires. At the end of the questionnaires, participants were provided with a debrief form which they could request to be emailed a copy of.

#### **2.5 Ethical approval**

Ethical approval was granted by the North West- Greater Manchester South Research Ethics Committee (See Appendix D) the NHS Grampian Research and Development Office on 18<sup>th</sup> March 2019.

#### **2.6 Power Analysis**

Power analysis was conducted *a priori* to estimate the required sample size. Looking at previous research examining the relationships between the variables, medium-large effect sizes have been reported individually between the moderating variables of self-compassion (MacBeth & Gumley, 2012) and emotional intelligence with psychological distress (James *et al.*, 2012). In addition, research suggested a medium effect size between emotional intelligence and depression, anxiety and carer burden in studies that included family caregivers for persons with dementia (Weaving *et al.*, 2014). A medium effect size was therefore assumed for the current study. To achieve power of 0.8, a formula ( $N \geq 50 + 8m$ , with  $m$  being the number of independent variables) was used (Green, 1991) and based on this, a minimum sample size of 66 participants is required.

Power was also calculated using G\*Power V3.1 (Faul *et al.*, 2009) based on three predictor variables (independent variable, moderator and their interaction),  $\alpha = 0.05$  and power of 0.8 (Cohen, 1992). This indicated a sample size of 77 would be required. As such the current sample size was considered adequately powered.

## **2.7 Statistical Analysis**

All statistical analysis was conducted in IBM SPSS Statistics Version 25. Moderation analysis was conducted using the modelling tool PROCESS v.3.14 developed by Hayes (2013). Demographic data was analysed using Pearson's correlations, independent sample t-tests and one-way analysis of variance (ANOVA). To test Hypothesis one-three, Pearson's correlation and regression analyses was conducted. To test Hypothesis 4.1 – 4.4, four separate moderation analysis using Model 1 (Hayes, 2013) was conducted to test the interaction effect of carer burden ( $X$ ) and emotional intelligence ( $M$ ) and self-compassion ( $M$ ) ( $X*M$ ) as two separate moderators. When completing the moderation analyses, the data was mean centred for construction of products of all variables.

Data was screened and there was no missing data. To assess distribution of the data, the skewness and kurtosis of outcome measures were examined. As shown in Table 2, skewness and kurtosis stay within the guidance values of +1 and -1, indicating that the data is not substantially skewed nor too peaked (Hair *et al.*, 2017). Furthermore, z-scores were calculated by dividing the skew or kurtosis values by their standard errors. Using the guidance for medium-size samples, the null hypothesis that the data is normally distributed is supported as all the z-values were below 3.29 (Kim, 2013). Next, the assumption of normality was checked by examining p-plots, and normal p-plots were confirmed. Histograms and Boxplots were examined for outliers that could bias the data. Homoscedasticity was checked by examining the scatterplots of the residuals.

Examination of the variance inflation factor (VIF) and tolerance values indicated the assumption of absence of multicollinearity was met. All VIF values were well under

10 and the tolerance values were over 0.2. In addition, all Pearson's correlations were below 0.8 which suggests absence of collinearity (Dormann *et al.*, 2013).

### **2.8 Analysis of Covariate**

In order to identify any demographic variables that should be included as covariates in the moderation analysis, relationships between demographic variables and the outcome variables (depression and anxiety) were examined.

Pearson's correlations indicated that age was significantly negatively correlated with depression ( $r = -.450, p < 0.01$ ) and anxiety ( $r = -.379, p < 0.01$ ), such that older caregivers reported lower levels of symptoms. Independent sample t-tests indicated no gender differences on the GAD-7 or PHQ-9. There were no differences in GAD-7 or PHQ-9 scores between family caregivers who lived and those who did not live with the relative they were caring for. One-way ANOVAS indicated no significant differences in GAD-7 or PHQ-9 scores for hours of care provided per week or relationship to care recipient.

One-way ANOVAS indicated significant differences in PHQ-9 scores based on severity rating of their relative's dementia ( $F(5,133) = 2.83, p = 0.018$ ), however no significant differences were found for GAD-7 scores.

Therefore, covariate analysis indicated that age should be controlled for in both moderation analyses and 'dementia severity rating' controlled for in the moderation analysis involving PHQ-9 as the dependent variable.

## **3. Results**

Participant demographic statistics are shown in Table 1 and descriptive statistics are presented in Table 2. Results suggest that the current sample reported on average: high carer burden, moderate levels of self-compassion, lower to average levels of emotional intelligence, moderately-severe levels of depression and severe levels of anxiety. Self-compassion scores were significantly higher for males than females ( $t$

(162) = -2.02,  $p = 0.046$ ) with small effect size ( $d = 0.47$ ). No gender differences were found for SSEIT, PHQ-9, GAD-7 or ZBI-S.

Table 1. *Sample Characteristics (n=164)*

Variable	n (%)
<b>Gender</b>	Female 146 (89) Male 18 (11)
<b>Country of residence</b>	England 125 (76.2) Scotland 23 (14) Northern Ireland 7 (4.3) Wales 5 (3.0) Other 4 (2.4)
<b>Who they are caring for</b>	Mother 78 (47.6) Husband 44 (26.8) Wife 13 (7.9) Father 10(6.1) Aunt/Uncle 4 (2.4) Grandmother 3 (1.8) Grandfather 1 (0.6) Care for more than one relative 6 (3.7) Other 5 (3.0)
<b>Living with the person receiving care</b>	Living with the person receiving care 86 (52.4) Not living with the person receiving care 78 (47.6)
<b>Hours of care per week</b>	0-5 hours: 15 (9.1) 5-10 hours: 13 (7.9) 10-15 hours: 10 (6.1) 15-20 hours: 14 (8.5) 20-25 hours: 7 (4.3) 25-30 hours: 5 (3.0) 30-35 hours: 6 (3.7) 35-40 hours: 14 (8.5) 40-50 hours: 9 (5.5) 50 hours+ : 71 (43.3)
<b>Severity of Dementia</b>	Mild :11 (6.7) Moderate: 79 (48.2) Severe: 44 (26.8) Not known: 30 (18.3)
<b>Years passed since relative was diagnosed with Dementia</b>	0-5 years: 99 (60.4) 5-10 years: 41 (25.0) 10-15 years: 10 (6.1) 15+ years: 1 (0.6) Not known: 13 (7.9)
<b>Years passed since caring for the relative</b>	0-5 years: 75 (45.7) 5-10 years: 37 (22.6) 10-15 years: 19 (11.6) 15+ years: 5 (3.0) Not known: 28 (17.1)

Table 2

*Descriptive statistics for all variables*

<b>Measure</b>	<b>Mean (standard deviation) of total scores</b>	<b>Skewness (standard error)</b>	<b>Kurtosis (standard error)</b>
	<b><i>n</i> =164</b>		
<b>SCS</b>	2.92 (0.80).	0.48 (0.19)	0.09 (0.38)
<b>SSEIT</b>	114.61 (17.98)	-0.292 (0.19)	0.96 (0.38)
<b>PHQ-9</b>	19.64 (6.93)	0.48 (0.19)	-0.62 (0.38)
<b>GAD-7</b>	15.88 (6.17)	0.43 (0.19)	-0.87 (0.38)
<b>ZBI-S</b>	39.26 (10.52)	-0.46 (0.19)	-0.45 (0.38)

*Note.* SCS: Self-Compassion Scale; SSEIT: Schutte Self Report Emotional Intelligence Test; PHQ-9: Patient Health Questionnaire; GAD-7: Generalised Anxiety Disorder Questionnaire; ZBI-S: Zarit Burden Interview: Short Form

### 3.1 Correlations Between Predictor Variables and Dependent Variables

Pearson's correlations were conducted to examine the relationships between the factors (using Cohen,1992 for interpretation). Findings support hypothesis one-three. Results are shown in Table 3.

**3.1.1 Carer burden, anxiety and depression.** It was hypothesised that higher carer burden will be associated with higher anxiety and depression. Strong positive correlations were found between carer burden and depression ( $r(162) = .513, p < .001$ ) and anxiety ( $r(162) = .578, p < .001$ ), both with large effect sizes.

**3.1.2 Self-compassion, anxiety and depression.** It was hypothesised that higher self-compassion will be associated with lower anxiety and depression. Self-compassion was and negatively correlated with depression ( $r(162) = -.567, p < .001$ ) and anxiety ( $r(162) = -.561, p < .001$ ), with large effect sizes.

**3.1.3 Emotional intelligence, anxiety and depression.** It was predicted that higher emotional intelligence will be associated with lower anxiety and depression. Emotional intelligence is negatively correlated with depression ( $r(162) = -.414, p < .001$ ) and anxiety ( $r(162) = .343, p < .001$ ), both with medium effect sizes.

Table 3  
Bivariate correlations between variables and *p* values (*n* = 164)

Variables	Carer Burden	Self-compassion	Emotional Intelligence	Depression (PHQ-9)	Anxiety (GAD-7)
Carer Burden	-				
Self-compassion	-.453 ( <i>&lt;.001</i> )	-	.		
Emotional Intelligence	-.212 ( <i>&lt;.001</i> )	.568 ( <i>&lt;.001</i> )	-		
Depression (PHQ-9)	.513 ( <i>&lt;.001</i> )	-.567 ( <i>&lt;.001</i> )	-.414 ( <i>&lt;.001</i> )	-	
Anxiety (GAD-7)	.578 ( <i>&lt;.001</i> )	-.561 ( <i>&lt;.001</i> )	-.343 ( <i>&lt;.001</i> )	.837 ( <i>&lt;.001</i> )	-

### 3.2 Moderation Analysis

#### 3.2.1 Hypothesis 4.1: Self-compassion will moderate the relationship between carer burden and anxiety.

Results of the regression analysis are presented in Table 7. This model was significant ( $F(4,159) = 32.15, p < .001$ ; all predictors to  $y$ ), meaning that all the predictors are greater than 0 at predicting anxiety. In this model, the predictors accounted for 44.7% of variance in anxiety scores.

As shown in Table 7, carer burden significantly predicted anxiety ( $b = 0.24, t(159) = 6.12, p < .001$ ), meaning that as carer burden increased, anxiety scores increased. Self-compassion also significantly predicted anxiety ( $b = -2.91, t(159) = -5.51, p < .001$ ), meaning that as self-compassion increased, anxiety decreased. Addition of the interaction (moderation) was not a significant change to the model, meaning that hypothesis 4.1 is not supported. Results are shown in Table 7 and significant results are shown in bold.

Table 7

*Results of regression analysis predicting self-compassion and anxiety, controlling for age.*

Predictor variable	Coefficient (b)	SE	t	p	95% Confidence Intervals	
					Lower	Upper
<b>Carer Burden</b>	0.24	0.39	6.12	<b>&lt;.001</b>	<b>0.16</b>	<b>0.32</b>
<b>Self-compassion</b>	-2.91	0.53	-5.51	<b>&lt;.001</b>	<b>-3.95</b>	<b>-1.86</b>
<b>Interaction effect</b>	-0.01	0.04	-0.37	0.72	-0.09	0.06

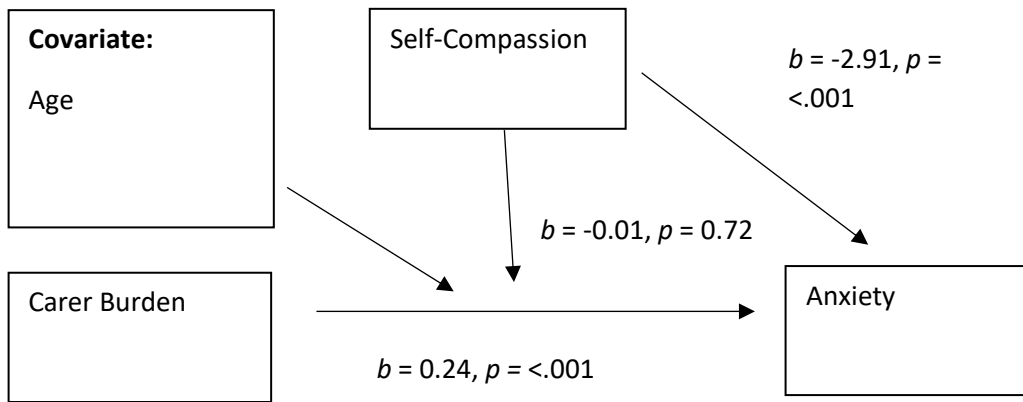


Figure 5. Moderation model of carer burden, self-compassion, and anxiety

### 3.2.2 Hypothesis 4.2: Self-compassion will moderate the relationship

**between carer burden and depression.** Results of the regression analysis with carer burden, depression and self-compassion variables are presented in Table 8. The model was significant ( $F(5,158) = 21.63, p < .001$ ). This means that when all predictors are included in the model, they are greater than zero at predicting depression. The predictor variables accounted for 40.6% variance in anxiety scores. In this model, carer burden significantly predicted depression when compared with the other predictors ( $b = 0.21, t(158) = 4.69, p < .001$ ). This means that for every one unit increase in carer burden, there is a 0.21 unit increase in depression.

In addition, self-compassion was also a significant individual predictor of depression ( $b = -3.66, t(158) = -5.94, p < .001$ ), meaning that as self-compassion increased, depression scores decreased. As shown in Table 8, there was no significant effect of adding the interaction, meaning the findings do not support hypothesis 4.2. Results are shown in Table 8 and significant results are shown in bold.

Table 8

Results of regression analysis predicting depression, controlling for age and dementia diagnosis severity rating

Predictor variable	Coefficient (b)	SE	t	p	95% Confidence Intervals	
					Lower	Upper
<b>Carer Burden</b>	0.21	0.05	4.69	<.001	<b>0.12</b>	<b>0.30</b>
<b>Self-compassion</b>	-3.66	0.62	-5.94	<.001	<b>-4.88</b>	<b>-2.44</b>
<b>Interaction effect</b>	-0.03	0.05	-0.625	0.53	-0.12	0.06

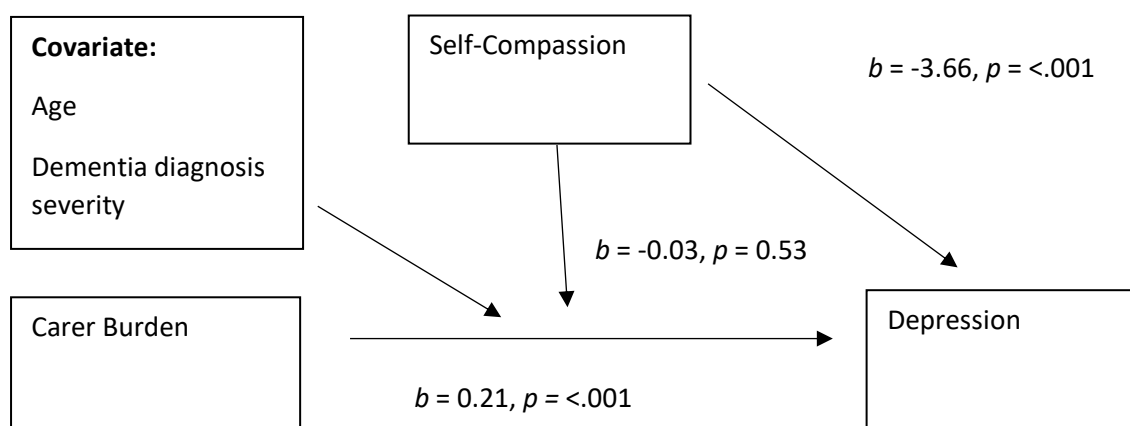


Figure 6. Moderation model of carer burden, self-compassion, and depression

**3.2.3 Hypothesis 4.3: Emotional intelligence will moderate the relationship between carer burden and anxiety.** Results of the regression analysis are shown in Table 9. The overall model including all the predictors is significant ( $F(4,159) = 25.62, p < .001$ ). When all predictors were included in the model, they accounted for 39.2% of variance in anxiety scores. Of the individual predictors, carer burden significantly predicted anxiety ( $b = 0.30, t(159) = 7.88, p < .001$ ). This means that for every one unit increase in carer burden, there is a 0.30 increase in anxiety. Emotional intelligence also significantly predicted anxiety ( $b = -0.79, t(159) = -3.63, p < .001$ ). The addition of the interaction term did not increase prediction ability ( $b = 0.00, t(159) = -0.35, p = 0.73$ ), meaning that the findings do not support hypothesis 4.3. Results are shown in Table 9 and significant results are shown in bold.

Table 9

*Results of the regression analysis predicting anxiety, controlling for age*

Predictor variable	Coefficient (b)	SE	t	p	95% Confidence Intervals	
					Lower	Upper
<b>Carer Burden</b>	<b>0.30</b>	0.038	7.88	<b>&lt;.001</b>	<b>0.22</b>	<b>0.37</b>
<b>Emotional intelligence</b>	<b>-0.79</b>	0.022	-3.63	<b>&lt;.001</b>	<b>-0.12</b>	<b>-0.04</b>
<b>Interaction effect</b>	0.00	0.00	-0.35	0.73	-0.01	0.00

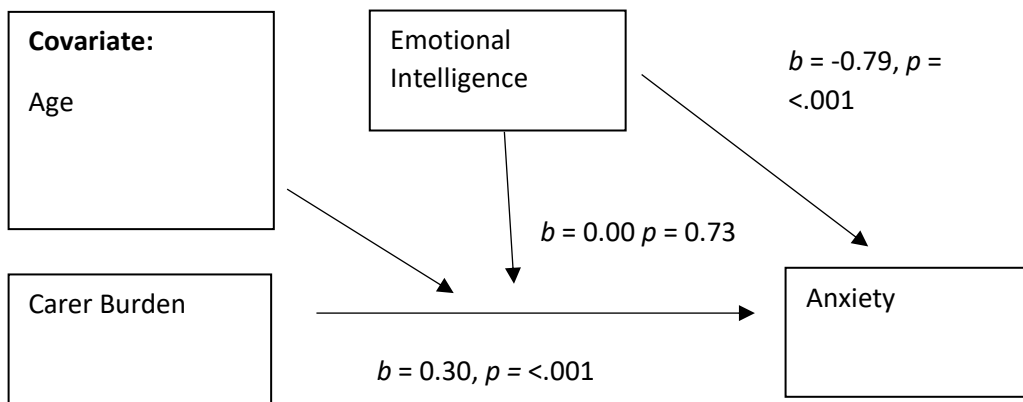


Figure 7. Moderation model of carer burden, emotional intelligence, and anxiety

### 3.2.4 Hypothesis 4.4: Emotional intelligence will moderate the

**relationship between carer burden and depression.** Results of the regression analysis are shown in Table 10. The overall model is significant ( $F(5,158) = 18.68, p < .001$ ), meaning that all predictors are greater than 0 at predicting depression. In this overall model, carer burden and emotional intelligence (predictor variables) accounted for 37.2% in depression scores. In this model, of the individual predictors, carer burden significantly predicted depression scores ( $b = 0.28, t(158) = 6.40, p < .001$ ), meaning that as carer burden increased, so did depression. Emotional intelligence also significantly predicted depression scores ( $b = -0.12, t(158) = -4.93, p < .001$ ), meaning as emotional intelligence increased, depression decreased. The addition of the interaction term did not increase prediction ability ( $b = -0.00, t(158) = -0.78, p = 0.44$ ), meaning the findings do not support hypothesis 4.4. Results are shown in Table 10 and significant results are shown in bold.

Table 10

Results of regression analysis predicting depression, controlling for age and dementia severity rating.

Predictor variable	Coefficient (b)	SE	t	p	95% Confidence Intervals	
					Lower	Upper
Carer Burden	0.28	0.04	6.40	<.001	0.19	0.37
Emotional intelligence	-0.12	0.03	-4.93	<.001	-0.17	-0.07
Total interaction effect	0.00	0.00	-0.78	0.44	-0.01	0.00

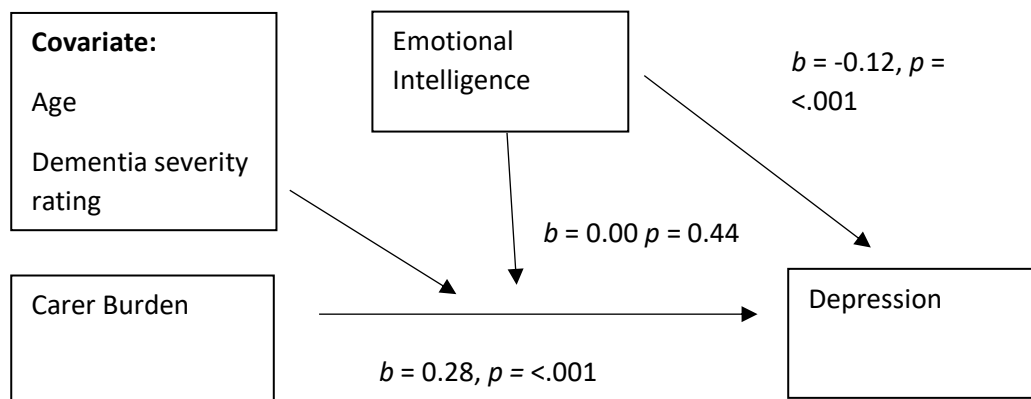


Figure 8. Moderation model of carer burden, emotional intelligence, and depression

#### 4. Discussion

This study aimed to examine the relationships between self-compassion, emotional intelligence, depression, anxiety and carer burden in family caregivers for individuals living with a diagnosis of dementia. Although preliminary research suggests self-compassion and emotional intelligence can act as protective factors to buffer stress (Hsieh *et al.*, 2019; Mikolajczak *et al.*, 2007), these studies had not been conducted in family caregivers of persons with dementia. This study aimed to address this gap by recruiting from this population. Understanding the factors that make individuals vulnerable to distress allows for an appreciation for personal buoyancy in the face of adverse circumstances that are not necessarily amenable to change, such as the requirement to act as a family caregiver to a relative. Building resilience, whilst receiving support in a systemic way, is an important factor in the Scottish Government's National Dementia Strategy (2017-2020). The study aims to highlight family caregivers' psychological needs to emphasise the need for systemic support in this population.

In relation to the sample characteristics, most participants were female (89%) and the largest group of participants (47.6%) were caring for their mother and 26.8% were caring for their husband. This is largely in line with previous research that family caregivers are usually a female child or spouse (Brodaty & Donkin, 2009). Most of the participants provided more than 50 hours of care per week to their relative. This highlights the high level of assistance family caregivers are providing. It has been reported that caring for a relative with dementia requires providing more help and support than family caregivers of older adults with physical disabilities (Schulz & Martire, 2004). This helps to explain the impact on other areas of life, such as engagement in leisure activities (Innes *et al.*, 2015), family caregivers face at a detriment to their mental health.

The main findings of this study support the hypothesis that higher levels of carer burden are associated with higher anxiety and depression. Similarly, regression analysis indicated that higher carer burden can predict higher anxiety and depression levels. This is consistent with previous research findings (Garcia-Alberca

*et al.*, 2012; Schulz *et al.*, 2008). Indeed, high levels of carer burden were demonstrated in this study, highlighting the stress and strain that family caregivers experience. These findings provide further evidence that carer burden should be recognised and acted upon to improve family caregivers' emotional wellbeing (Robinson *et al.*, 2005).

There is a need for more research examining how individual differences can impact upon psychological health in family caregivers (Vasiliki & Phoung, 2015). In this study, higher levels of self-compassion were associated with lower levels of anxiety and depression. In addition, self-compassion significantly predicted lower levels of anxiety and depression. This is in line with previous research highlighting this association across age groups (Krieger *et al.*, 2018; MacBeth & Gumley, 2012). However, there have been very few studies examining these relationships in the family dementia caregiving population. This study, therefore, provides evidence for the association and predictive ability of self-compassion on depression and anxiety levels in this population. The results add to the evidence base of the theoretical links between self-compassion and mental health symptoms, specifically that self-compassion is the ability to respond to threat (including self-critical thoughts) with soothing emotional regulation abilities, reducing psychological distress (Gilbert, 2009).

The second potential protective factor examined in this study showed similar results. Higher levels of emotional intelligence were associated with and predicted lower levels of anxiety and depression. This is consistent with a previous study of these factors in family caregivers of people with dementia (Weaving *et al.*, 2014) and provides replication evidence for this association. In the Weaving *et al.*, (2014) study, the regression analysis was run only to predict anxiety and not depression. Therefore, the present study's findings add to the evidence base of the predictive validity of emotional intelligence in both anxiety and depression.

The study's findings provide support for the Stress-Diathesis Model in this population, consistent with two previous studies (Vitaliano *et al.*, 1991; Weaving *et*

*al.*, 2014) suggesting that lower emotional intelligence increases vulnerability towards experiencing the negative effects of caregiving burden on depression and anxiety levels. Although no studies have proposed this model with the factor of self-compassion in this population, this study suggest that both self-compassion and emotional intelligence could be understood as personality constructs that can be understood and harnessed as protective factors and elements for intervention development.

Despite this, moderation analysis revealed that self-compassion and emotional intelligence were not moderating factors in the relationship between carer burden and anxiety and depression. This means that low, average and high carer burden scores did not interact with self-compassion or emotional intelligence in predicting depression and anxiety. This is not consistent with a previous study reporting the moderating role of self-compassion in the relationship between carer burden and depression in a sample of informal caregivers of individuals with lung cancer (Hsieh *et al.*, 2019). Despite similar sample characteristics in the present study, there was substantial gender differences in Hsieh *et al.*, (2019) study, with almost 48% male participants compared to the present study which had only 11% males. Despite this, covariate analysis in the present study did not indicate significant gender differences. The contrasting results could be explained by the different roles and responsibilities required when caring for a relative with lung cancer versus dementia. Likewise, the moderation effect of emotional intelligence in the relationship between stress and burnout (Mikolajczak *et al.*, 2007) and mental health (Mikolajczak *et al.*, 2006) has only been examined in a sample of nurses and a student sample. The contrasting results could indicate different vulnerability factors and responses when faced with various challenges and responsibilities when caring for individuals with different illnesses and in different settings (i.e. different types of carer burden).

Different outcome measure was used to assess carer burden (Caregiver Stress Scale, Sadak *et al.*, 2017) which measures sources of stress, such as financial stress, family difficulties and care-related feelings in Hsieh *et al.* (2019) study. This is subtly

different to the carer burden measure used in the present study which measures perceived impact of caregiving responsibilities on emotional and physical health, finances, and social relationships. Likewise, Mickolajczak *et al.*, 2006 did not examine carer burden and assessed examination stress as the predictor variable. Therefore, there are several potential explanations for the differing results in this study in comparison to previous research, in relation to moderation analysis. Examining moderation effects in this population is a relatively new area of the research. As such, despite the non-significant results in the current study's moderation analysis, it is still important to further examine what factors may buffer the negative impacts of carer burden. More detailed analysis of the different impact and forms of carer burden (i.e. financial vs. emotional) could help explore this research area in more depth.

Although attempts were made to control for potential confounding factors in the analysis, it may be the case that additional confounding variables were not identified nor considered. Family caregivers with higher emotional intelligence and/or self-compassion could be engaged in coping strategies not measured in the present study. For example, it has been shown that individuals with lower emotional intelligence are more likely to engage in rumination, increasing their risk of depression (Lanciano *et al.*, 2012). Similarly, lifestyle factors that promote good mental health, such as exercise, were not measured in the current study. Furthermore, an additional confounding variable could be the quality of the relationship between the family caregiver and relative. It is reported that family caregivers experience differences in the companionship style and reciprocity in communication and the relationship as a whole and this can prevent helpful responses to the challenges of caring in this context (Feast *et al.*, 2016). This could have implications on how well the family caregiver is able to buffer the negative effects of carer burden. As strength and quality of the relationship, as well as attitudinal factors, were not examined in the current study, this could be a potential confounding factor that also helps to explain the differences with previous research in relation to moderation analysis.

#### 4.1 Limitations and Future Directions

There are several limitations of this study that are important to take into account when considering the results. This study used a cross-sectional design meaning that only correlational conclusions can be made. Highly motivated individuals are more likely to complete the study. This could potentially skew the results for a variety of reasons. Individuals who are experiencing less psychological stress and carer burden may have more motivation and psychological reserve to complete the study. On the other hand, individuals who are experiencing more psychological distress may be more motivated to complete the study to express their distress. Additionally, self-report measures can introduce bias due to demand characteristics and socially desirable responding (van de Mortel, 2008).

It is not known if the sample in this study is representative of the population. The sample was heavily weighted towards female family caregivers, with 89% of the sample being female. This is higher than other reported statistics that 60-70% of family caregivers for people with dementia are female (Alzheimer's Research UK, 2015). This means it is important to consider the generalisability of the results. Although the sample may reflect the 'real world' caregiving gender difference as research highlights that women contribute 71% of the hours of informal care (Alzheimer's Disease International and Karolinska Institute 2018).

To reduce the impact of potential confounding factors, it would have been useful to ask participants whether they were receiving professional mental health intervention, particularly given the high rates of depression and anxiety shown in this study. Likewise, asking participants if they had access to any other forms of support could help better identify their needs. Inclusion of qualitative questions could have aided the phenomenological understanding of the lived experience of the family caregivers.

Although this study asked participants the severity of their relative's dementia, this could be a subjective rating, rather than a professional's opinion. This means it is difficult to interpret that data with confidence. In future studies, asking participants

for the diagnosis given would allow for more subgroup analysis to take place. It is noted that the varying types of dementia have different symptoms that family caregivers find stressful, such as visual hallucinations in Lewy body dementia (Cheng, 2017), highlighting the need to consider the dementia diagnosis.

Although this study was not intervention-based, it is still clinically relevant to consider protective factors in family caregivers that would allow for development of interventions. This study has highlighted the elevated levels of depression, anxiety and carer burden in this population. This shows that although proactive approaches are needed in this population, reactive interventions are also important. Identifying family caregivers' unmet needs could allow for the development and implementation of systemic approaches employed consistently across services to help meet the varying needs of family caregivers. This is in line with the Scottish Government's National Dementia Strategy (2017b) that adequate support offered to all family caregivers, from a wide range of systems, can make a positive difference their wellbeing and resilience.

## **4.2 Conclusion**

To conclude, the results of this study indicate that higher levels of carer burden is predictive of higher levels of depression and anxiety in a sample of family caregivers caring for relatives with a diagnosis of dementia. Although self-compassion and emotional intelligence did not moderate the relationship between carer burden and psychological distress, the results show that higher levels of self-compassion and emotional intelligence are predictive of lower levels of depression and anxiety. This suggests that self-compassion and emotional intelligence could be harnessed as potential protective factors against psychological distress in this population and a focus for intervention.

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<https://doi.org/10.1177/1533317517749466>

## 6. Appendices

### *Appendix A: Submission Guidelines for Behaviour Research and Therapy*

#### *Abstract*

A concise and factual abstract is required with a maximum length of 200 words. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

#### *Graphical abstract*

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view [Example Graphical Abstracts](#) on our information site.

Authors can make use of Elsevier's [Illustration Services](#) to ensure the best presentation of their images and in accordance with all technical requirements.

#### *Keywords*

Immediately after the abstract, provide a maximum of 6 keywords, to be chosen from the APA list of index descriptors. These keywords will be used for indexing purposes.

#### *Abbreviations*

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

#### *Acknowledgements*

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

#### *Formatting of funding sources*

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

#### *Shorter communications*

This option is designed to allow publication of research reports that are not suitable for publication as regular articles. Shorter Communications are appropriate for articles with a specialized focus or of particular didactic value. Manuscripts should be between 3000-5000 words, and must not exceed the upper word limit. This limit includes the abstract, text, and references, but not the title page, tables and figures.

#### **Artwork**

##### *Electronic artwork*

##### *General points*

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.
- Ensure that color images are accessible to all, including those with impaired color vision.

A detailed [guide on electronic artwork](#) is available.

**You are urged to visit this site; some excerpts from the detailed information are given here.**

##### *Formats*

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

EPS (or PDF): Vector drawings, embed all used fonts.

TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.

TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.

TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

**Please do not:**

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

**Tables**

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

**References**

*Citation in text*

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

*Web references*

As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

*Data references*

This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

*Reference management software*

Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support [Citation Style Language styles](#), such as [Mendeley](#). Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. [More information on how to remove field codes from different reference management software.](#)

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:

<http://open.mendeley.com/use-citation-style/behaviour-research-and-therapy>

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

*Reference style*

*Text:* Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 978-1-4338-0561-5, copies of which may be [ordered online](#) or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK.

## ***Appendix B: Proforma for Data Extraction***

### **General Information**

Author	
Year	
Title	
Objectives	

### **Methods**

Study design	
Recruitment method	
Setting	
Participants	
Sample size	
Outcome measures	
Intervention	
Intervention duration	
Follow-up	

### **Results**

Statistical tests	
Outcome data	
Number of participants included in analysis	
Other results	

### **Discussion/Conclusions**

Summary of results	
Strengths	
Limitations	

**Appendix C: Quality Assessment Tool (adapted from Downs & Black, 1998)**

<b>Study</b>	<b>Criteria</b>	<b>Rating: Yes: 1 + No: 0 - Unable to determine: 0 -</b>
<b>Reporting</b>		
1	Is the objective of the study clear?	
2	Are the main outcomes clearly described in the Introduction and Methods?	
3	Are characteristics of the patients included in the study clearly described?	
4	Are the interventions clearly described?	
5	Are the distributions of the principal confounders in each group of subjects clearly described?	
6	Are the main findings of the study clearly described?	
7	Does the study estimate random variability in data for main outcomes?	
8	Have all the important adverse events consequential to the intervention been reported?	
9	Have characteristics of patients lost to follow-up been described?	
10	Have actual probability values been reported for the main outcomes except probability <0.001?	
<b>External Validity</b>		
11	Were subjects who were asked to participate in the study representative of the entire population recruited?	
12	Were those subjects who were prepared to participate representative of the recruited population?	
13	Were individuals delivering the intervention trained professionals in the intervention?	
<b>Internal reliability</b>		
14	If any of the results of the study were based on 'data dredging', was this made clear?	
15	Were the statistical tests used to assess main outcomes appropriate?	
16	Was compliance with the intervention/treatment reliable?	
17	Were the main outcome measures used accurate? (valid and reliable)	
<b>Internal Validity:</b>		

<b>Confounding (Selection Bias)</b>		
18	*Was there an adequate control or comparison group?	
19	Were participants in different intervention groups recruited from the same population?	
20	Were study subjects in different intervention groups recruited over the same period of time?	
21	Were participants randomised to intervention groups?	
22	Was there adequate adjustment for confounding in the analyses from which the main findings were drawn?	
23	Were losses of participants to follow-up taken into account?	
<b>Power</b>		
24	Did the study mention having a power analysis to determine the sample size needed to detect a significant difference in effect size for one or more outcome measures?	

\* Note. Criteria was added for the current systematic review.

## Appendix D: Letters of Ethical Approval



**Health Research  
Authority**

**North West - Greater Manchester South Research Ethics Committee**

3rd Floor, Barlow House  
4 Minshull Street  
Manchester  
M1 3DZ

Telephone: 0207 104 8002

18 March 2019

**Dr Monja Knoll**  
Section of Clinical & Health Psychology, School of Health in Social Sciences  
The University of Edinburgh, Old Medical School  
Teviot Place - Room 1.5, Edinburgh  
EH8 9AG

Dear Dr Knoll

<b>Study title:</b>	<b>The relationships between self-compassion, emotional intelligence, psychological distress, and carer burden in carers for individuals living with dementia.</b>
<b>REC reference:</b>	<b>19/NW/0125</b>
<b>Protocol number:</b>	<b>CAHSS1810/03</b>
<b>IRAS project ID:</b>	<b>252073</b>

The Proportionate Review Sub-committee of the North West - Greater Manchester South Research Ethics Committee reviewed the above application via correspondence.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact [hra.studyregistration@nhs.net](mailto:hra.studyregistration@nhs.net) outlining the reasons for your request. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

### **Ethical opinion**

On behalf of the Committee, the sub-committee gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

### **Conditions of the favourable opinion**

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

- Please confirm that you would register the research on a public database.

### Recommendation

- For any future studies, the PRS Sub-Committee recommend that an independent review to be conducted on the statistics

**You should notify the REC once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. Revised documents should be submitted to the REC electronically from IRAS. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which you can make available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.**

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA and HCRW Approval (England and Wales)/ NHS permission for research is available in the Integrated Research Application System, [www.hra.nhs.uk](http://www.hra.nhs.uk) or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations.

### Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact [hra.studyregistration@nhs.net](mailto:hra.studyregistration@nhs.net). The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

**It is the responsibility of the sponsor to ensure that all the conditions are complied with before**

**the start of the study or its initiation at a particular site (as applicable).  
Ethical review of research sites**

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion").

**Extract of the meeting minutes**

**Social or scientific value: scientific design and conduct of the study**

The PRS Sub-Committee noted that the sample size of 71 had not been justified well and had ignored the question of drop-outs or poor data-form completion. However, they concluded that the sample size of 71 would be adequate for this study. In the future, the PRS Sub-Committee recommend that an independent review is conducted on the statistics.

**Care and protection of research participants; respect for potential and enrolled participants' welfare and dignity**

The PRS Sub-Committee noted that the research would not be registered on a public database; they was in agreement that the research should be registered on a public database and sought confirmation that the research would be registered.

The PRS Sub-Committee was satisfied that any potential distress to participants had been considered and addressed.

**Informed consent process and the adequacy and completeness of participant information**

The PRS Sub-Committee noted that the participants completing the study online would not be physically signing a consent form, they would just be ticking a box to give their consent. The PRS Sub-Committee agreed that this would be acceptable as consent would still being recorded and participants would be able to halt the study if they were unhappy.

**Approved documents**

The documents reviewed and approved were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Copies of advertisement materials for research participants [Psychological health in carers for individuals living with dementia,Poster ]	1	13 January 2019
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Professional Indemnity Confirmation]	1	31 July 2018
IRAS Application Form [IRAS_Form_11022019]		11 February 2019
IRAS Application Form XML file [IRAS_Form_11022019]		11 February 2019
IRAS Checklist XML [Checklist_11022019]		11 February 2019
Non-validated questionnaire [Psychological health in carers for individuals living with dementia, Demographic Questions]	1	13 January 2019
Other [PL Confirmation]	1	24 July 2018
Other [Clinical Trial Liability Insurance]	1	31 July 2018
Other [Certificate of Employer's Liability Insurance]	1	01 August 2018

Other [Psychological health in carers for individuals living with dementia, Data Protection Information]	1	13 January 2019
Other [Psychological health in carers for individuals living with dementia, Debrief Sheet]	1	13 January 2019
Participant consent form [Psychological health in carers for individuals living with dementia, Consent Form]	1	13 January 2019
Participant information sheet (PIS) [Psychological health in carers for individuals living with dementia, Participant Information Sheet]	1	13 January 2019
Research protocol or project proposal [Psychological health in carers for individuals living with dementia, Protocol]	1	13 January 2019
Summary CV for Chief Investigator (CI) [CV]	1	26 November 2018
Summary CV for student [CV]	1	10 December 2018
Validated questionnaire [Psychological health in carers for individuals living with dementia, Questionnaires]	1	13 January 2019

#### **Membership of the Proportionate Review Sub-Committee**

The members of the Sub-Committee who took part in the review are listed on the attached sheet.

#### **Statement of compliance**

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

#### **After ethical review**

##### Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

#### **User Feedback**

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: <http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/>

#### **HRA Training**

We are pleased to welcome researchers and R&D staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

With the Committee's best wishes for the success of this project.

**19/NW/0125**

**Please quote this number on all correspondence**

Yours sincerely

**On behalf of  
Professor Sobhan Vinjamuri  
Chair**

**Email:** [nrescommittee.northwest-gmsouth@nhs.net](mailto:nrescommittee.northwest-gmsouth@nhs.net)

**Enclosures:** List of names and professions of members who took part in the review  
"After ethical review – guidance for researchers"

**Copy to:** Charlotte Smith  
Fiona Brebner,  
Grampian Health Board

**North West - Greater Manchester South Research Ethics Committee**

**Attendance at PRS Sub-Committee of the REC meeting**

**Committee Members:**

<i>Name</i>	<i>Profession</i>	<i>Present</i>	<i>Notes</i>
Mr Richard Hovey	Business Analyst	Yes	
Dr Joel Sanderson	Medical Expert	Yes	
Professor Sobhan Vinjamuri <b>Chair</b>	Consultant in Nuclear Medicine	Yes	

**Also in attendance:**

<i>Name</i>	<i>Position (or reason for attending)</i>
Miss Ewa Grzegorska	REC Assistant

**North West - Greater Manchester South Research Ethics Committee**

3rd Floor, Barlow House  
4 Minshull Street  
Manchester  
M1 3DZ

Tel: 0207 104 8063

**Please note: This is the favourable opinion of the REC only and does not allow the amendment to be implemented at NHS sites in England until the outcome of the HRA assessment has been confirmed.**

06 June 2019- re-issue 10 June 2019

Caroline Jones  
Dept. of Older Adult Psychology & Neuropsychology (MH)  
Block D, Clerkseat Building, Royal Cornhill Hospital  
Aberdeen  
AB25 2ZH

Dear Caroline Jones

**Study title:** The relationships between self-compassion, emotional intelligence, psychological distress, and carer burden in carers for individuals living with dementia.

**REC reference:** 19/NW/0125

**Protocol number:** CAHSS1810/03

**Amendment number:** Substantial Amendment 1

**Amendment date:** 09 May 2019

**IRAS project ID:** 252073

Additional demographic questions added to the beginning of the study to gain further information on intensity of care provided by the carers. This will allow broader analysis to be completed. The questions will add no more than 2-3 minutes for participants to complete. As such, these questions are not additional time burden.

The above amendment was reviewed 24 May 2019 by the Sub-Committee in correspondence.

### Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

**The Sub Committee raised no ethical issues with this amendment**

### Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Non-validated questionnaire [Demographic Questionnaire]	2 tracked	09 May 2019
Notice of Substantial Amendment (non-CTIMP)	Substantial Amendment 1	09 May 2019
Research protocol or project proposal	2 tracked	09 May 2019

### Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

### Working with NHS Care Organisations

Sponsors should ensure that they notify the R&D office for the relevant NHS care organisation of this amendment in line with the terms detailed in the categorisation email issued by the lead nation for the study.

### Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

### HRA Learning

We are pleased to welcome researchers and research staff to our HRA Learning Events and online learning opportunities– see details at: <https://www.hra.nhs.uk/planning-and-improving-research/learning/>

19/NW/0125: Please quote this number on all correspondence
--

Yours sincerely

pp

**Professor Sobhan Vinjamuri**  
Chair

E-mail: nrescommittee.northwest-gmsouth@nhs.net

**North West - Greater Manchester South Research Ethics Committee**

3rd Floor, Barlow House  
4 Minshull Street  
Manchester  
M1 3DZ

Tel: 0207 104 8063

**Please note: This is the favourable opinion of the REC only and does not allow the amendment to be implemented at NHS sites in England until the outcome of the HRA assessment has been confirmed.**

15 July 2019

Caroline Jones  
Dept. of Older Adult Psychology & Neuropsychology (MH)  
Block D, Clerkseat Building, Royal Cornhill Hospital  
Aberdeen  
AB25 2ZH

Dear Caroline Jones

<b>Study title:</b>	<b>The relationships between self-compassion, emotional intelligence, psychological distress, and carer burden in carers for individuals living with dementia.</b>
<b>REC reference:</b>	<b>19/NW/0125</b>
<b>Protocol number:</b>	<b>CAHSS1810/03</b>
<b>Amendment number:</b>	<b>Substantial Amendment 2</b>
<b>Amendment date:</b>	<b>17 June 2019</b>
<b>IRAS project ID:</b>	<b>252073</b>

The above amendment was reviewed 03 July 2019 by the Sub-Committee in correspondence.

**Ethical opinion**

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

The Sub Committee raised no ethical issues with the amendment

#### Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Non-validated questionnaire [Demographic Questions]	3	17 June 2019
Notice of Substantial Amendment (non-CTIMP)	Substantial Amendment 2	17 June 2019
Research protocol or project proposal	3	17 June 2019

#### Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

#### Working with NHS Care Organisations

Sponsors should ensure that they notify the R&D office for the relevant NHS care organisation of this amendment in line with the terms detailed in the categorisation email issued by the lead nation for the study.

#### Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

#### HRA Learning

We are pleased to welcome researchers and research staff to our HRA Learning Events and online learning opportunities– see details at: <https://www.hra.nhs.uk/planning-and-improving-research/learning/>

19/NW/0125: Please quote this number on all correspondence
--

Yours sincerely

pp

**Professor Sobhan Vinjamuri**  
Chair

E-mail: [nrescommittee.northwest-gmsouth@nhs.net](mailto:nrescommittee.northwest-gmsouth@nhs.net)

Enclosures: *List of names and professions of members who took part in the review*

Copy to: *Caroline Jones*

## **Participant Information Sheet and Consent Form**

### **Psychological health in carers for individuals living with dementia.**

**You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish. Contact us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.**

#### **What is the purpose of the study?**

The purpose of this study is to find out more about the wellbeing of those who care for people living with dementia. Understanding what factors can influence carer wellbeing can help us to recognise carers' needs.

#### **Why have I been asked to take part?**

You have been asked to participate in this study because you are a carer of a person living with dementia.

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

No, it is up to you to decide whether or not to take part. If you decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw until the end of data collection and without giving a reason. Deciding not to take part or withdrawing from the study will not affect the healthcare that you receive, or your legal rights.

#### **What will happen if I take part?**

Following reading this information sheet, you will be asked for your consent if you would like to take part. If you give consent, you will be asked to complete questions about your wellbeing, in particular about your psychological health. This involves completing 5 questionnaires that you can complete online or paper if you prefer. This will take you around 50 minutes.

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

There are no direct benefits to you taking part in this study, but the results from this study might inform the future support for other carers.

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

It is not thought that there are many disadvantages; however, it is possible that you may become distressed when completing the questionnaires or sometime later as completing the study may remind you of difficult emotions or situations. If this is the case, please seek appropriate support, for example, your GP or Samaritans (Tel: 116 123).

#### **What happens when the study is finished?**

At the end of the research we will analyse the results and write them up for a thesis. You will not be identifiable from the results. The anonymised data will be kept securely for 5 years and securely disposed of.

**Will my taking part in the study be kept confidential?**

Your data will be processed in accordance with Data Protection Law. All information about you will be kept strictly confidential. Unless they are anonymised in our records, your data will be referred to by a unique participant number rather than by name. Your personal data will only be viewed by the research team. For more information about how we will use your data please see the separate data protection information sheet.

**What will happen to the results of the study?**

The study will be written up as a thesis in a journal format which will be submitted to journals for publication and/or presentations. You will not be identifiable in any published results. A general summary of the results will be made available to the participants. Please note individual results will not be available. If you wish to receive this summary, please leave your contact details in the box at the end of the questionnaires.

**Who is organising the research and why?**

This study has been organised and sponsored by University of Edinburgh to help find out more about carers' experiences.

**Who has reviewed the study?**

The study proposal has been reviewed by the University of Edinburgh. All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee. A favourable ethical opinion has been obtained from North of Scotland REC. NHS management approval has also been obtained.

**If you have any further questions about the study, please contact Caroline Jones by email on [caroline.jones17@nhs.net](mailto:caroline.jones17@nhs.net)**

**If you would like to discuss this study with someone independent of the study, please contact:**

**Angus Macbeth  
Lecturer in Clinical Psychology,  
School of Health in Social Science,  
Medical Quad, Teviot Place,  
Edinburgh,  
EH8 9AG  
Tel: 0131 6503893**

**If you wish to make a complaint about the study please contact NHS Grampian**

**NHS Grampian Feedback Service  
Summerfield House  
2 Eday Road  
Aberdeen  
AB15 6RE  
Tel: 0345 337 6338 Email: [nhsgrampian.feedback@nhs.net](mailto:nhsgrampian.feedback@nhs.net)**

# CONSENT FORM (Online)

## Psychological health in carers for individuals living with dementia

Caroline Jones

**Please tick the box**

1. I confirm that I have read and understand the information sheet (V1 13.01.19) and data protection information sheet (13.01.19) for the above study and have had the opportunity to consider the information and ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.
3. I understand that relevant sections of data collected during the study may be looked at by individuals from the regulatory authorities and from the Sponsor (the University of Edinburgh) or from the/other NHS Board(s) where it is relevant to my taking part in this research. I give permission for those individuals to have access to my records.
4. I agree to take part in the above study.

(Click)

**Next** (participants will begin the questionnaire)

# CONSENT FORM (Paper/offline)

## Psychological health in carers for individuals living with dementia

Participant ID:

*Caroline Jones*

**Please initial box**

1. I confirm that I have read and understand the information sheet (V1 10.12.18) and data protection information sheet (V1, 13.01.19) for the above study and have had the opportunity to consider the information and ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

3. I understand that relevant sections of data collected during the study may be looked at by individuals from the regulatory authorities and from the Sponsor (the University of Edinburgh) or from the/other NHS Board(s) where it is relevant to my taking part in this research. I give permission for those individuals to have access to my records.

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

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

1x original – into Site File; 1x copy – to Participant (if completed paper version)

## **Appendix F: Measures**

*Demographic questions that are asked prior to completion on the main questionnaires.*

1. Do you care for a relative living with dementia? Y/N
2. How many hours of care do you provide to your relative living with dementia per week?
3. What is your relationship to the person you care for? (e.g., father, wife etc.)
4. Do you live with the person you provide care for? Y/N
5. How old are you?
6. What is your gender?
7. How many years ago was your relative diagnosed with dementia? (\_\_\_\_\_ enter years, plus a 'not known' category)
8. How many years have you been a carer for this relative (\_\_\_\_\_ enter months/years, plus a 'not known' category)
9. What is the severity of your relative's dementia diagnosis? ('mild', 'moderate', 'severe', 'not known', 'other' categories)
10. Please select your country of residence:
  - Scotland
  - England
  - Northern Ireland
  
  - Other (please state.....)
11. Did you find out about this study through 'Join Dementia Research'?
  - Yes
  - No (*please state where you found out about this study, such as social media*).



2. The Schutte Self Report Emotional Intelligence Test (SSEIT; Schutte et al., 1998)

Instructions: Indicate the extent to which each item applies to you using the following scale:

- 1 = strongly disagree
- 2 = disagree
- 3 = neither disagree nor agree
- 4 = agree
- 5 = strongly agree

1. I know when to speak about my personal problems to others
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them
3. I expect that I will do well on most things I try
4. Other people find it easy to confide in me
5. I find it hard to understand the non-verbal messages of other people\*
6. Some of the major events of my life have led me to re-evaluate what is important and not important
7. When my mood changes, I see new possibilities
8. Emotions are one of the things that make my life worth living
9. I am aware of my emotions as I experience them
10. I expect good things to happen
11. I like to share my emotions with others
12. When I experience a positive emotion, I know how to make it last
13. I arrange events others enjoy
14. I seek out activities that make me happy
15. I am aware of the non-verbal messages I send to others
16. I present myself in a way that makes a good impression on others
17. When I am in a positive mood, solving problems is easy for me
18. By looking at their facial expressions, I recognize the emotions people are experiencing
19. I know why my emotions change
20. When I am in a positive mood, I am able to come up with new ideas
21. I have control over my emotions
22. I easily recognize my emotions as I experience them
23. I motivate myself by imagining a good outcome to tasks I take on
24. I compliment others when they have done something well

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25. I am aware of the non-verbal messages other people send
26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself
27. When I feel a change in emotions, I tend to come up with new ideas
28. When I am faced with a challenge, I give up because I believe I will fail\*
29. I know what other people are feeling just by looking at them
30. I help other people feel better when they are down
31. I use good moods to help myself keep trying in the face of obstacles
32. I can tell how people are feeling by listening to the tone of their voice
  
33. It is difficult for me to understand why people feel the way they do\*

3. *The Patient Health Questionnaire (PHQ-9; Spitzer, Kroenke, & William, 1999)*

## PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the **last 2 weeks**, how often have you been bothered by any of the following problems?  
(Use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

4. The Generalised Anxiety Disorder Questionnaire (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006)

Over the last 2 weeks, how often have you been bothered by the following problems?	Not at all sure	Several days	Over half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it's hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

5. The Zarit Burden Interview: Short form (Bedard et al., 2001)

Please circle the response the best describes how you feel. All answers and anonymous so please be as honest as you can.

	Never	Rarely	Some times	Quite Frequently	Nearly Always
1. Do you feel that because of the time you spend with your relative that you don't have enough time for yourself?	0	1	2	3	4
2. Do you feel stressed between caring for your relative and trying to meet other responsibilities for your family or work?	0	1	2	3	4
3. Do you feel angry when you are around your relative?	0	1	2	3	4
4. Do you feel that your relative currently affects our relationships with other family members or friends in a negative way?	0	1	2	3	4
5. Do you feel strained when you are around your relative?	0	1	2	3	4
6. Do you feel your health has suffered because of your involvement with your relative?	0	1	2	3	4

	Never	Rarely	Some times	Quite Frequently	Nearly Always
7. Do you feel that you don't have as much privacy as you would like because of your relative?	0	1	2	3	4
8. Do you feel that your social life has suffered because you are caring for your relative?	0	1	2	3	4
9. Do you feel you have lost control of your life since your relative's illness?	0	1	2	3	4
10. Do you feel uncertain about what to do about your relative?	0	1	2	3	4
11. Do you feel you should be doing more for your relative?	0	1	2	3	4
12. Do you feel you could do a better job in caring for your relative?	0	1	2	3	4