Relationship Between Proactive Coping and Compassion Fatigue in Palliative Care Nurses Working in Oncology.

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Overview

This thesis portfolio comprises three parts:

Part One: Systematic Literature Review

Part one is a literature review which explores the literature surrounding the experience of self-compassion and emotional expression in individuals who have been diagnosed with and completed primary treatment for breast cancer. The results suggest that both self-compassion and emotional expression play important roles in reducing psychological distress and improving quality of life for those treated for breast cancer.

Part Two: Empirical Paper

Part two is an empirical paper which investigated the relationship between proactive coping compassion satisfaction and compassion fatigue in palliative care nurses who work with cancer patients. The investigation utilized a quantitative methodology using an online survey. The following information was collected: job role, length of time in role, impact of COVID on role, current experience of personal stressors, work setting, number of contracted hours, overtime hours and incentives for overtime, professional quality of life and proactive coping. General linear regression models were completed and demonstrated that proactive coping and personal stressors were significantly correlated with compassion fatigue, but only proactive coping was significantly correlated with compassion satisfaction. Proactive coping significantly contributed to the prediction of both compassion fatigue and compassion satisfaction.

Part Three comprises the Appendices

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Part One – Experience of Emotional Expression and Self-compassion in Individuals Diagnosed and Treated for Breast Cancer.

Psychological Wellbeing After Breast Cancer.

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This paper is written in the format outlined for submission by the British Journal of Psychology. Please see Appendix C for the Author Guidelines.

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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Abstract

The experience of self-compassion and expressing emotion have been found to enhance quality of life in breast cancer survivors (Brown et al., 2020; Stanton et al., 2000). There is limited guidance on psychological interventions for breast cancer even though it is common for survivors to experience psychological distress post diagnosis and treatment. This review provides evidence for the roles of self-compassion and emotional expression so that enhancement of such can be included in psychological interventions. A systematic search of literature was conducted, and 11 studies were identified as relevant to the review. These were quality assessed and peer reviewed before being analysed using narrative synthesis. The role of self-compassion was demonstrated to improve quality of life and reduce distress whilst increasing resilience to cope. The role of emotional expression was demonstrated to help manage negative thoughts and feelings, improve quality of life and reduce distress. The findings suggest that self-compassion and emotional expression play a significant role in improving psychological functioning and quality of life. This highlights the usefulness of providing strategies aimed at increasing self-compassion and emotional expression for psychological wellbeing post breast cancer diagnosis and treatment.

Keywords: self-compassion, emotional expression, breast cancer, psychological

Introduction

The following literature review will explore the role of self-compassion and emotional expression for individuals who have gone through diagnosis and treatment of breast cancer. Self-compassion and emotional expression are important for individuals as these concepts can improve quality of life (QoL), especially in individuals who have experienced breast cancer diagnosis and treatment (Masoumi et al., 2022). Consideration will be given as to how the information can facilitate further discussions about how self-compassion and emotional expression may be bolstered to improve QoL for individuals post-breast cancer treatment.

Breast cancer

Breast cancer is the world's most prevalent cancer with 7.8 million individuals alive with breast cancer in the previous five years (World Health Organisation, 2021). In England breast cancer accounts for one third of cancer incidence in women and one quarter of the total cancer incidence (Gathani et al., 2021). Breast cancer occurs when abnormal cells in the breast grow in an uncontrolled manner, and this can occur in both men and women. However, it is more common in women, with there being 375 cases of breast cancer in males per year on average compared to females where there are 55,545 new cases in the UK (Breast Cancer UK, 2022). Statistics for breast cancer in recent years will be impacted by the COVID-19 pandemic with delays in both diagnosis and treatment due to the suspension of routine screening in March 2020 (Gathani et al., 2021). There are various types of breast cancer: invasive of no special type, whereby cancer cells grow through the lining of the milk ducts into surrounding tissues; invasive lobular is where cancer cells in the lobules (milk-producing glands) have spread into surrounding breast tissue; inflammatory breast cancer, a rare and fast-growing cancer that blocks lymph channels in the breast and skin; and hormone receptor positive breast cancer where there are additional receptors for the hormones oestrogen and progesterone. The common treatment options for breast cancer include surgery, chemotherapy, radiotherapy and hormone treatment. The surgery to remove cancerous tissue from the breast is known as a mastectomy. This is routinely offered to individuals with breast cancer to remove all breast tissue within the breast (National Institute for Health and Care Excellence [NICE], 2018). Individuals can opt to have a single mastectomy where only one breast is affected or double mastectomy where breast tissue from both breasts are removed. Individuals may opt for a double mastectomy to reduce the risk of cancer recurrence in the other breast. The option of breast reconstruction may also be offered to preserve body image. The benefits and risks of further surgery such as this should be discussed beforehand to mental and physical health difficulties that can arise (NICE, 2018). Chemotherapy and radiotherapy are provided before treatment when the cancer needs to be shrunk prior to surgery, or after surgery to reduce the likelihood of recurrence (Cancer Research UK, 2020a).

Breast cancer diagnosis and treatment can have an impact on an individual’s life in many ways with feelings of grief, shock, fear, and anger (Cancer Research UK, 2020b). Adjustment to a new body shape after surgery can take time and may impact on self-confidence of the individual with some women reporting worries in their appearance changing (Abdollahi et al., 2020). This worry of change and body image disturbance can negatively impact on the integration back into normal life (Kwak et al., 2013) which impacts on their QoL. People also report negative impacts on interpersonal relationships within their family and the worry of recurrence (Abdollahi et al., 2020). Psychological distress can be experienced during the process of diagnosis and treatment which then impacts on the long-term functioning of individuals recovering from breast cancer (Friedman et al., 2006). This distress can be prolonged post-treatment where development of psychiatric morbidities such as depression and anxiety may develop (Goldberg et al., 1992).

The first author completed a placement in cancer psychology where 80% of their caseload were breast cancer patients. This statistic was representative of the current waitlist within the service, highlighting the large number of individuals with breast cancer who require psychological support. When assessing individuals with cancer, common themes of low self-compassion and a lack of emotional expression about their cancer experience were observed. Feedback from individuals suggested that providing a therapeutic space where emotions could be discussed in a kind and reflective way was an essential part of their journey. This led to the rationale for investigating the roles of self-compassion and emotional expression in individuals with breast cancer in this review.

Often breast cancer treatment focusses on the physical aspects of care, however breast cancer can induce significant psychological distress and heightened levels of negative emotions (Compas & Luecken, 2002). Importance must be placed on addressing psychological needs and by understanding the role of self-compassion and emotional expression it may be possible to address these needs more effectively by informing potential intervention strategies post-treatment.

Self-compassion

Compassion can be defined as the desire to alleviate suffering and involves paying attention to distress, empathy, commitment, and generosity (Gilbert et al., 2017). Compassion can be experienced as compassion to others; compassion to self; and compassion from others (Gilbert, 2010). Within this literature review the focus is on compassion to self. Neff (2003a) describes self-compassion involving being touched by and open to one’s own suffering, not disconnecting from it, and generating the desire to alleviate and heal oneself with kindness. Individuals high in self-compassion may demonstrate a kind and accepting understanding to themselves; appreciation towards suffering being part of experience; and may take time to reflect on thoughts and feelings with a non-judgmental approach (Neff, 2003a). Strauss et al.

(2016) suggested that compassion is a cognitive, affective, and behavioural process which involves: recognising and understanding the universality of suffering in human experience; feeling empathy and connecting with the distress; tolerating uncomfortable feelings so being open and accepting of suffering; and motivation to act to alleviate suffering. There is evidence which suggests that a lack of self-compassion, in the form of one's critical approach to oneself is highly associated with vulnerabilities to a range of mental health difficulties (Gilbert et al., 2017).

When faced with an illness such as breast cancer people with higher self-compassion tend to be more positive and take good care of their health (Brion et al., 2014) which may foster greater QoL post-cancer. Self-compassion may be helpful for body image distress by reducing this distress as well as depression for individuals with breast cancer who have had a mastectomy (Todorov et al., 2019). Self-compassion has also been linked to stress as individuals high in self-compassion may use positive restructuring as a means of changing their views on current situations thus perceiving situations as less stressful (Todorov et al., 2019). Moreover, an investigation into compassion using a Mindful Self-compassion 8-week programme identified that self-compassion could lead to less self-judgment regarding physical appearance post-cancer diagnosis and treatment and sharing the experience with others provided a sense of social connectedness (Campo et al., 2017).Those who widely practice self-compassion may not only see a reduction in depressive and anxiety symptoms but also a reduction in fear of dying (Afrashteh & Masoumi, 2021) which relates to the fear of recurrence that individuals with breast cancer commonly experience (Abdollahi et al., 2020).

Emotional expression

Emotions arise when events are appraised by people as favourable or harmful to their own interests and these emotions modify our readiness to act (Frijda, 1986). Emotions enable people to react to significant stimuli with complex patterns of behaviour such as facial movements, vocal cues, and bodily movements (Keltner et al., 2019). Emotional expression refers to the outward observable display of emotion and the inhibition of this is suggested to play a critical role in both physical and mental health concerns (Graves et al., 2005). Research suggests that expression of emotion may have positive or negative outcomes, for example it may intensify distress and interfere with active coping efforts, or it may be a means of alleviating such distress (Noori & Khayatan, 2017). Emotional distress in cancer patients is an important outcome and attempts to regulate emotions can reduce such distress and enhance physical and psychological wellbeing (Conley et al., 2016). Adjusting to breast cancer involves managing emotional distress therefore individuals who can regulate such distress may go on to experience positive adjustments (Spencer et al., 1999; Sears et al., 2003). Expression of emotion has been linked to the physical adjustment of breast cancer with findings suggesting that women who express their emotions tended to have fewer physical health appointments in relation to cancer-related morbidities (Stanton et al., 2000).

Review aims

The main aim of the literature review was to determine the roles of self-compassion and emotional expression in individuals who have been diagnosed and treated for breast cancer. The findings from this review could be used to inform psychological interventions for individuals who have gone through breast cancer diagnosis and treatment. These interventions may have a primary focus on increasing self-compassion and supporting breast cancer survivors in expressing difficult emotions post-treatment. This is important as mental health and physical health should equally be considered within the treatment and support of breast cancer.

The following questions were considered:

1. What role does self-compassion play for individuals with breast cancer who have completed primary treatment?
2. What role does emotional expression play for individuals with breast cancer who have completed primary treatment?
3. What are the clinical implications of this research for supporting the psychological needs and improving QoL in women with breast cancer who have completed breast cancer treatment?

Materials and Method

Search strategy

Databases

Using EBSCO host, an electronic search was completed using the following databases: Academic Search Premier, APA Psyc INFO APA Psyc Articles, MEDLINE and CINAHL.

Search Terms

The following search terms were applied to all text. Quotation marks were used when terms should appear together e.g. “cancer survivors”. Asterisks (*) were used to broaden the search results for differing word endings. The Boolean operator OR was used to broaden search terms and the term AND was used so that articles relevant to both compassion and cancer survivors were retrieved.

"self-compassion*" or "self compassion*" or "compassion-focus*" or "emotional self-regulation" or compassion* or "emotion* regulation" OR "emotion* expression" OR "emotion* control" OR "emotion* self-efficacy" OR "emotion* suppress*"

AND

(breast* (cancer* or neoplasm* or tumor* or tumour*)) or mastectomy

Article section process

The final search was completed on 8th September 2022 and returned 1144 results. It was limited to English Language and returned 997 results. Duplicates were then removed which returned 632 results. These were then screened by title to ensure relevance, this returned 92 results. They were then screened by abstract which provided 32 results. The full text of these were assessed for eligibility and some excluded based on the inclusion and exclusion criteria (Table 1) leaving 11 texts for the review.

Table 1.

Inclusion criteria and exclusion criteria applied for the review.

Inclusion Criteria	**Justification**
English language papers, or where English translation was available.	Interpretation is consistent throughout the papers due to consistent language used.
Articles investigating self-compassion and/ or emotional expression with individuals with breast cancer.	Gap in the literature for understanding the roles and how these may inform intervention.
Primary treatment completed.	Individuals currently going through treatment will have different experiences to those who have completed primary treatment.
Any study design, including quantitative; qualitative; and mixed methods.	To gain a range of information including statistical and comparable data but also in-depth experiences of participants.
Exclusion Criteria	**Justification**
Titles referring to other forms of cancer other than breast.	For this review, only individuals with breast cancer were investigated.
Titles and abstracts which did not consider compassion or emotion expression.	Irrelevant to the research.
Papers which looked specifically at medical treatments of breast cancer.	Present study was only concerned about reviewing psychological aspects of care.
Titles and abstracts which focussed on family or carer experiences of individuals with breast cancer.	Present study was concerned with the experience of the patient with breast cancer rather than family or carers.
Articles where patients are still receiving primary treatment.	Psychological distress often increases after primary treatment is completed due to individual’s attempts at returning to normal life.

From each paper information on the methodology, country, participants, measures and key findings were extracted and put into a table (Table 2). Figure 1 shows the article selection process involving the initial search results, screening of title and abstracts and the number of full articles read. Each paper was read, and data extracted into Table 2.

Quality assessment

The Mixed Methods Appraisal Tool (MMAT, Hong et al., 2018) was used to assess quality of papers (Appendix D). This tool assesses quality for papers which use quantitative, qualitative or mixed method designs. Each paper was assessed and a percentage score was provided, with 0 being the lowest quality and 100% the highest quality. Each paper was independently reviewed by a fellow researcher to ensure inter-rater reliability. Those which were not rated the same were discussed to establish the paper's quality rating.

Data analysis

Information relevant for this review was obtained from appropriate articles using a data extraction form (Appendix E). The information included each study's design, sampling method and participant criteria, measures used, method of analysis and main findings.

The data was analysed using narrative synthesis to summarise the findings and reflect on any themes that occurred through the various papers. The synthesis followed Popay et al.'s (2006) framework with focus on the following stages: (i) developing theory-based understanding, (ii) constructing initial theory-informed synthesis of the findings, (iii) exploring relationships in the data, and (iv) assessing the robustness of the data synthesis. A meta-analysis was considered but not all papers reflect on specific interventions for compassion or emotional expression and there is heterogeneity in articles' methodologies and design.

Table 2.

Summary of studies included in the systematic literature review.

Authors *Location*	**Aims**	**Design**	**Participants**	**Measures**	**Key findings**	**Quality score**
Alizadeh et al. (2018) *Iran*	To determine the relationship of resiliency with self-compassion and social support for women who have had breast cancer.	Quantitative-Cross-sectional design Self-selected Convenience sample	150 participants aged between 18-60 with stage 1-3 breast cancer. No average age given.	Conor-Davidson Resilience scale. Self-compassion scale. Multidimensional scale of Perceived Social Support. Sense of Belonging instrument.	There was a significant positive correlation between resilience, self-compassion, perceived social support and sense of belonging.	100%
Arambasic et al. (2019) *Australia*	To explore relationships between attachment, self-compassion and psychological adjustment in breast cancer survivors.	Quantitative-Cross-sectional design Self-selected convenience sample	82 participants over 18 diagnosed with breast cancer between 5-10 years ago. Had completed active treatment. Age: M= 58.46 (SD= 8.77)	Experiences in Close Relationships-Revised scale. Self-Compassion Scale. Negative Impact Summary Scale of the Impact of Cancer scale	Attachment anxiety and avoidance were significantly positively correlated with stress and negative impact of cancer and negatively correlated with self-compassion. A significant indirect effect of attachment anxiety on stress and negative impact of cancer through self-compassion. Long-term breast cancer survivors with high attachment avoidance report poorer psychological adjustment. Those with high attachment avoidance prefer emotional distance and inhibit emotion are less likely to extend compassion to self during difficult experiences.	80%
Brown et al., (2020) *UK*	To examine whether existing interindividual variation in self-compassion subscales cross-sectionally predict depression and anxiety in breast cancer survivors. To examine whether such relationships could be mediated by lower brooding, depressive brooding, reflection and worry scores.	Quantitative-Cross-sectional design Purposive self-selected sample	184 participants. Eligible if had completed primary treatment, 18+, not diagnosed with new or metastatic cancer. Age: M= 51.54 (SD= 9.42)	Self-compassion Scale. HADS scale. Ruminative response scale. Penn state worry questionnaire.	Self-compassion was negatively correlated with depression and anxiety. Common humanity showed lower correlations than self-kindness and mindfulness. Worry and rumination were inversely associated with self-compassion. Self-kindness and mindfulness predicted reduced depressive brooding.	80%

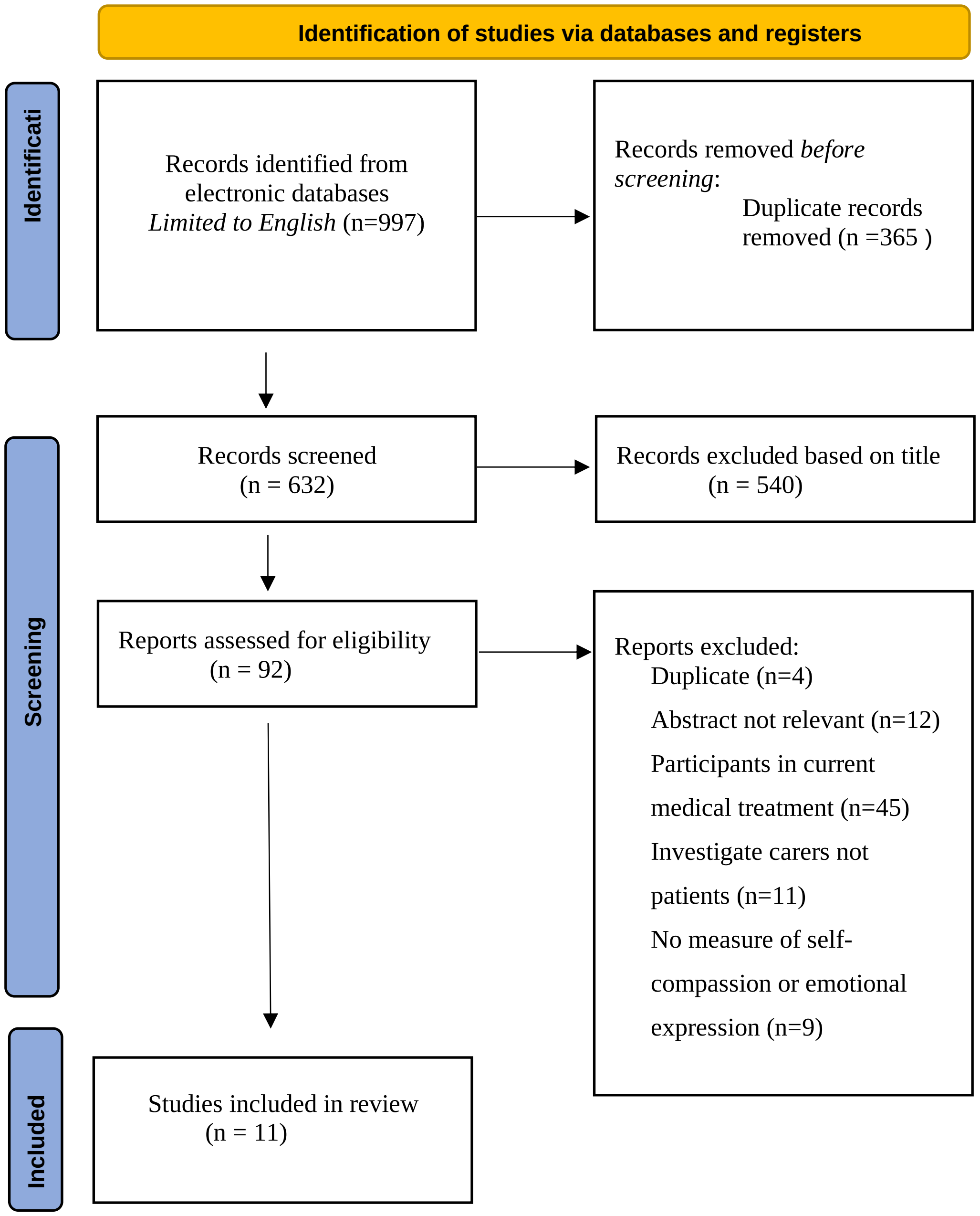
Craft et al. (2013) *USA*	To determine whether expressive writing improves QoL in breast cancer survivors. To determine whether the prompt used for writing led to different results.	Quantitative-Randomized control trial design using repeated measures. Self-selected Convenience sample	120. randomised into 4 groups. Inclusion criteria: treatment completed, able to understand English, less than 2 years since diagnosis. Age: M= 56 (SD= 10.51)	FACT-B.	Participants who wrote about breast cancer as traumatic event had significantly higher QoL scores at one month-post writing and six-month post writing. Participants who wrote about facts of their breast cancer also had significantly higher QoL scores at both time points. Participants who could choose the traumatic event increased in distress.	60%
Forti et al. (2016) *USA*	To examine self-kindness and alexithymia as potential mediators of the relationship between mindfulness and QoL among breast cancer survivors.	Quantitative- Cross sectional design Self-selected Convenience sample	133 research participants recruited from 3 sources. Age: M= 59.66 (SD= 9.45)	FACT-B. Toronto Alexithymia scale. Five Facet Mindfulness Questionnaire. Self-compassion scale.	Alexithymia was significantly negatively related to mindfulness. QoL and self-kindness. Mindfulness was significantly positively related to QoL, and mindfulness predicted QoL and self-kindness. Self-kindness did not predict significant variance for QoL. The relationship between mindfulness and QoL weakened when self-kindness and alexithymia were added to the model.	80%
Gonzalez-Hernandez et al. (2018) *Spain*	To analyse the efficacy of a CBCT protocol in a randomized control trial.	Quantitative-Randomized control trial design Self-selected convenience sample	Aged 18-75, read and write using Spanish, history of BC in 15 years, free from cancer illness, not receiving treatment. 56 in total 28 in CBCT and 28 in TAU. Age: M= 52.13 (SD= 6.96)	Satisfaction, adherence, demographic and medical history. Functional assessment of Cancer Therapy-Breast Cancer using QoL. Brief symptom inventory Spanish version. Fear of Cancer Recurrence Inventory. Self-compassion scale short form. Five facets of mindfulness questionnaire short form. CBCT evaluation form.	CBCT was effective in diminishing stress by fostering self-kindness and common humanity and increasing overall self-compassion. Self-compassion strongly related to wellbeing and happiness. Significant change in emotional and general QoL between pre and post intervention. 8-week CBCT protocol can reduce psychological stress related to recurrence. Reduction in depressive symptoms seen over six months.	80%

Nakatani et al. (2014 *Japan*	To examine the relationship between emotional suppression and psychological distress.	Mixed methods- Self-selected Convenience sample	31 participants. Averagely 109 days post-treatment. Age: M= 57.9 (SD= 11.8)	Profile Of Mood States. Courtauld Emotional Control Scale.	Scores on the POMS was higher for emotional suppression group. Total mood disturbance higher in suppression group. Patients in emotional suppression group expressed negative emotions. People in emotional suppression group experience higher psychological distress than individuals in the emotional expression group.	80%
Stanton et al. (2000) *USA*	To examine emotional approach coping as a mediator of the relation between hope and adaptive outcomes. To examine the interaction of this relation in influencing adjustment. To examine the interaction of emotional approach coping and social receptivity in predicting adaptive outcomes.	Quantitative- Cross-sectional design Self-selected convenience sample	92 women. Had completed treatment. Age: M= 51.56 (SD= 10.33)	COPE. Hope scale. 3 item scale to assess perceived receptivity of the social network to participants cancer related expression. Functional assessment of cancer therapy. Profile of mood states.	Participants greater use of coping through emotional expression was uniquely associated with better perceived health status and lower psychological distress. Avoidant copers became more distressed and evidenced less positive emotion over time. Hope significantly predicted emotionally expressive coping and perceived health.	100%
Thomas et al. (2017) *Canada*	To pilot test a creative writing intervention for breast cancer survivors to qualitatively explore the impact on wellbeing. To qualitatively document breast cancer survivorship transitions and issues conveyed through writing and other methods.	Qualitative- Interpretive descriptive design Self-selected Convenience sample	12 participants completed the intervention. 8 of those had previously discussed breast cancer experience. 6 months to 9 years post-diagnosis. Age: M= 54	N/A	Expression of emotion perceived as negative. Felt unable to share fear anger and distress outside of the group. Writing provided patients permission to express emotions that they were unable to process. Seeking permission to express and self-care.	100%
Tsai and Lu (2018) *USA*	To examine longitudinal associations of ambivalence over emotional expression and QoL. To examine whether social support is a mediatory underlying the relation between ambivalence over	Quantitative- Cross-sectional design Self-selected Convenience sample	96 Chinese breast cancer survivors. Age: M= 54.54 (SD= 7.91)	Ambivalence over emotional expressiveness (AEE) questionnaire. Medical Outcomes study.	AEE was associated with lower social support and lower QoL across all time-points. Social support is a mediator of AEE and QoL.	60%

	emotional expression and QoL.			Social Support scale- Chinese version. FACT-G.		
Wang et al. (2018) *USA*	To examine the association between ambivalence over emotional expression and pain, investigating the potential pathways.	Quantitative- Cross-sectional design Self-selected Convenience sample	96 Chinese American. Diagnosed with 0-3 stage breast cancer within five years. Able to understand Chinese. Age: M= 54.54 (SD= 7.91)	Ambivalence of emotional expressiveness questionnaire. Impact of events scale. Brief Pain inventory. Stephenson Multigroup Acculturation scale.	Positive association between AEE and pain interference/ severity. Intrusive thoughts as a partial explanation for this association. Suppression of emotions may impair cognitive processing of stressful events.	80%

Figure 1.

Flow diagram outlining the exclusion of papers at various stages of the review.



Results

The results section will follow a narrative synthesis. The results section will consider the methodology of the papers reviewed and how self-compassion and emotional expression was investigated within the literature.

Methodological quality

Overview

Researcher rated quality assessment scores using the MMAT (Hong et al., 2018) ranged from 60-100% (Appendix D). As can be seen, the methodological quality of reviewed articles could be improved. Most papers shared the reliability and validity of the measures used which positively impacts the validity and reliability of their findings. However, a drawback for all papers was their sampling method, which although was relevant to address their aims, introduced non-response bias relating to non-observations of participants who fit the criteria for responding. This reduces representativeness to the wider population (Teddlie & Yu, 2007). Six papers usefully provided the inclusion criteria for their research, with common themes like aged 18 or over, completion of active treatment, and able to read/write the language of the measures. Some papers (Forti et al., 2016; Nakatani et al., 2014; Stanton et al., 2000; Thomas et al., 2017; Tsai & Lu, 2018) did not include their inclusion or exclusion criteria therefore it may be unclear how the sample population findings may relate to in the wider population. This reduces internal and external validity (Connelly, 2020). The quality assessment demonstrated differing types of study designs and measures used which led to a range of findings and variability in interpretation of those findings. The reduced quality in the assessment typically came from risk of nonresponse bias as with some papers (Arambasic et al., 2019; Brown et al., 2020; Forti et al., 2016; Nakatani et al., 2014; Tsai & Lu, 2018; Wang et al., 2018) there were certain types of respondents that were under-represented due to non-response (Berg, 2005). This was not accounted for in all papers.

Location

The papers included within the review are from various countries in the world (e.g. Spain, Iran, United Kingdom), however most commonly papers included were from the United States of America (5 papers). When considering the results of this review it is pertinent to reflect on the impact these results may offer. Countries with well-funded healthcare systems have higher rates of breast cancer survival, early detection and improved outcomes after treatment whereas in economically disadvantaged countries survival is worsened due to inadequate resources to provide care (Anderson et al., 2006). As a result, the experiences of breast cancer patients may vary significantly across location.

Participants

Sample sizes ranged from 12 participants in a qualitative study (Thomas et al., 2017) to 184 in quantitative survey-based research (Brown et al., 2020). Sample sizes varied among quantitative research with the lowest being 56 (Gonzales-Hernandez et al., 2018) to the highest of 184 (Brown et al., 2020). Although in some papers statistical analysis was used for power calculations of sample size, sample sizes overall were low, and this undermines the internal and external validity of a study (Faber & Fonseca, 2014).

Throughout the literature similar age groups of cancer survivors participated with mean ages ranging from 51.54 (*SD=9.42*) (Brown et al., 2018) to 59.66 (*SD=9.45*) (Forti et al., 2016). However, in one paper (Alizadeh et al., 2018) the average age and standard deviation was not provided therefore may alter the range shown above.

Design and analysis

The papers in this review utilised different methodologies including quantitative, qualitative and mixed methods. Two studies used a randomized control design (Craft et al., 2013; Gonzalez-Hernandez et al., 2018) which is a useful research design as it reduces bias and provides a rigorous tool to examine cause and effect between interventions and outcomes (Hariton & Locascio, 2018). Most papers used a cross-sectional design to investigate correlational and mediational effects. All papers utilised a self-selecting sample which means that individuals choose to take part. This method allows for ease in facilitating responses but may lead to nonresponse bias whereby the participants possess certain traits that affect participation and as a result means the sample is not truly representative of the population (Elston, 2021). Moreover, research suggests that individuals who choose to participate in research investigating emotional wellbeing are more likely to experience or have experienced distress (Donkin & Hickie, 2012). However, within health research the use of self-selection methods is one of the most ethical (BPS, 2021).

Measures

Self-Compassion

In five studies the Self-Compassion Scale (Neff, 2016) as used as a self-reported method for measuring self-compassion in breast cancer survivors (Arambasic et al., 2019, Gonzalez-Hernandez et al., 2018, Brown et al., 2020, Forti et al., 2016, Alizadeh et al., 2018). This is a well-recognised tool to measure self-compassion within clinical research and practice with high internal consistency ($\alpha = .92$) and test-retest reliability ($\alpha=.93$) (Neff, 2003b).

Psychological functioning

Emotional distress and wellbeing were investigated using a range of self-report measures. Most papers considered the cognitive, affective and physical indicators of psychological functioning and distress. The variation in measures makes integration of findings across the papers difficult. Two studies used interviews to provide themes of emotional distress and wellbeing (Nakatani et al., 2014; Thomas et al., 2017). All other studies used Likert scale questionnaires to indicate psychological functioning and wellbeing. Nakatani et al. (2014) used the median of the measures to group participants into an ‘emotional suppression’ and ‘emotional expression’ group for interviewing. By using a median split in this way, it can introduce higher rates of error and negatively impact the power of the findings (McClelland et al., 2015). The Functional Assessment of Cancer Therapy (Cella et al., 1993) as utilised by four studies, with three using the breast cancer specific tool (Forti et al., 2016; Gonzalez-Hernandez et al., 2018; Craft et al., 2013) and two utilising the general questionnaire (Stanton et al., 2000; Tsai & Lu, 2018). The Functional Assessment of Cancer Therapy has been validated and reliably tested in participants with cancer (Cella et al., 1993).

Role of self-compassion

The role of self-compassion was demonstrated in this literature review with findings suggesting that self-compassion plays a positive role in bolstering psychological wellbeing and QoL, increasing resilience and one’s ability to cope post breast cancer diagnosis and treatment.

Brown et al. (2020) investigated self-compassion and the effects on depression and anxiety as well as fear of recurrence using the Self Compassion Scale (Neff, 2016). They found that self-compassion was negatively correlated with depression and anxiety suggesting that individuals with high self-compassion may experience lower anxiety and depression. It was also found that low self-kindness and mindfulness, factors of self-compassion, predicted more depressive brooding. A following study in the review (Arambasic et al., 2019) utilised the same measure of compassion to investigate the relationship between attachment anxiety and avoidance and self-compassion in breast cancer survivors. They found that attachment anxiety and avoidance was negatively correlated with self-compassion, and there was a significant indirect effect of attachment anxiety on stress and negative impact of cancer through self-compassion. Brown et al. (2020) utilised the measure of compassion with individuals from the UK whereas Arambasic et al. (2019) utilised it with individuals from Australia. This demonstrates some consistency across countries in the measurement of self-compassion with individuals with breast cancer.

Relating to the previous study this may suggest that individuals who are high in attachment anxiety/ avoidance may be less likely to extend compassion to themselves during difficult experiences and as a result may be at greater risk of psychological distress. The findings from these studies suggest that self-compassion may be a risk factor for poor psychological functioning following adverse experiences and that interventions focussed on increasing self-compassion for those with such attachment styles may improve psychological functioning and wellbeing following breast cancer.

Attachment anxiety and avoidance can lead to difficulty in feeling and expressing emotions, this concept is known as alexithymia and has been researched with self-compassion. Forti et al.

(2016) investigated the impact of alexithymia and self-compassion and found that alexithymia is a significant negative predictor of QoL whereas self-compassion was a significant positive predictor of QoL. Specifically, mindfulness was a significant predictor within self-compassion, but self-kindness was not significant in contributing to the variance of QoL. The relationship between mindfulness and QoL decreased when alexithymia was added suggesting the negative effect of not expressing emotion. It suggests that the ability to describe and process emotions plays a role in a person's ability to be compassionate to themselves and in turn impacts their QoL.

Of the studies that measured self-compassion, Gonzalez-Hernandez et al. (2018) utilised a randomized control trial of a Cognitively Based Compassion Training (CBCT) intervention, compared to a treatment as usual (TAU) group. CBCT is a programme aimed at increasing resilience and wellbeing by increasing knowledge and skills of compassion. Although Brown et al. (2020) utilised alternative self-report questionnaires when assessing depressive and general wellbeing, they saw similar significant improvements to Gonzalez-Hernandez et al. (2018). It is important to keep in mind that different self-report measures were used when comparing the findings of each study because each will be scored and interpreted differently. Scores gathered from the CBCT programme were compared pre and post intervention with significant positive changes in emotional and general QoL in the CBCT group, with no significant changes in TAU. Significant changes in self-kindness and common humanity were found with individuals scoring higher in self compassion in the CBCT group compared to TAU. This supports the idea that self-compassion plays a role in bolstering psychological wellbeing and interventions which focus on such have positive benefits for the individual.

Role of emotional expression

The role of emotional expression was demonstrated in this literature review with findings suggesting that expressing emotions can serve as a positive means of improving QoL and managing distress as well as negative thoughts and feelings. However, findings within the review suggest that emotional expression may not always provide positive outcomes as being over expressive can lead to psychological distress.

Craft et al. (2013) utilised a random group assignment to test whether emotional expression in the form of writing may be beneficial to individuals who have experienced breast cancer. Individuals were randomly split into four groups; group 1 completed no writing; group 2 wrote about breast cancer as a traumatic event; group 3 wrote about a self-selected traumatic event; and group 4 wrote about the facts of their breast cancer experience with no thoughts or feelings provided. Participants wrote for 20 minutes on four consecutive days. At baseline there were no differences in the QoL of participants, however at 1-month post-writing, participants in group four had significantly higher QoL than individuals who completed no writing. This suggests that even writing about facts of breast cancer offers some expression which enhances wellbeing up to at least six months after. Participants who wrote about breast cancer as a traumatic event saw a significant increase in QoL scores between baseline and one month and this increased again between one month to six months. Individuals who had to choose a traumatic event to write about scored lower on QoL which may be a result of having to choose a traumatic event without emotional validation and safety. This may suggest that emotional expression is helpful to improve QoL when the person feels safe enough to express. Similarly, Stanton et al. (2000) found that for women in high socially receptive contexts high emotional expression was related to improved QoL suggesting that the social context that a person is in may impact their ability to express emotions and in turn impact QoL.

The use of follow-ups by Craft et al. (2013) is useful in order to see how QoL changes over time after intervention. Another study which usefully provides follow-up information on emotional expression in breast cancer survivors was completed by Tsai and Lu (2018). Participants completed a range of measures including the Ambivalence over Emotional Expression Questionnaire (AEQ, King & Emmons., 1990) at one month, three months and six months follow up. Ambivalence over emotional expression (AEE) is the desire to express emotion but a failure to do so (Wang et al., 2018). Results found that AEE is negatively correlated with lower social support and QoL suggesting that difficulties expressing emotion may lead to lower quality of life. Social support was suggested to be a mediator of AEE and QoL which suggests that increasing a person's social support network may help individuals reduce AEE and express emotions more readily thus improving QoL. Stanton et al.'s (2000) paper included in the review supports this finding as they investigated emotional expression and found that expressive coping predicted improved QoL in individuals who were contextualised to a socially receptive environment. The findings of this paper also extended to emotional expression as a use of coping being associated with increased perceived health status and lower psychological distress highlighting the positive benefits of emotional expression. However, the paper found that prolonged coping in this way becomes counter-intuitive and individuals can become more distressed over time from expressing emotions.

AEE has also been investigated by Wang et al. (2018) with a similar sample to Tsai and Lu (2018). Both studies were conducted in USA with a sample of Chinese American individuals. In comparison to Tsai and Lu's (2018) study, Wang et al., (2018) investigated intrusive thoughts and pain severity and pain interference in relation to AEE. They found that there was a positive association between AEE and pain severity and pain interference suggesting that difficulty expressing emotions may lead contribute to feeling more pain post-treatment. There was a positive association between AEE and intrusive thoughts and pain interference with an indirect effect found of AEE on pain interference through intrusive thoughts. This suggests that intrusive thoughts may impact on expressing emotions which then leads higher pain interference. This may relate to the research by Tsai and Lu (2018) by partially explaining why AEE reduces QoL in that it increases pain interference post breast cancer treatment.

Nakatani et al. (2014) investigated QoL and psychological wellbeing using the Courtauld Emotional Control Scale (Watson & Greer, 1983) to separate participants into an emotional suppression and an emotional expression group based on a median split. The Profile of Mood States (McNair et al., 1971) was also used as a measure. The results of the study found that total mood disturbance scores were significantly higher in the suppression group than the expression group. Depression-dejection, tension-anxiety and anger-hostility were also significantly higher in the suppression group compared to the expression group. Vigor-activity scores were significantly higher in the emotional expression group than the suppression group. The participants were then interviewed by a Clinical Psychologist to discuss current anxieties, worries and thoughts. The emotion suppression group expressed significantly higher negative emotions and significantly fewer positive emotions than the emotional expression group. These findings suggest that individuals who suppress emotions experience more psychological distress than those who express emotions. This is supported by Stanton et al. (2000) who found that coping using emotional expression was associated with increased vigor and decreased stress. However, one must take into account that this study also found that excessive emotional expression can have negative impacts on mental health.

The interviews also highlighted the accumulation of intrusive thoughts as a result of suppressing emotions highlighting the need to express emotions in order to manage and reduce intrusive thoughts after breast cancer surgery. Findings by Forti et al. (2016) also highlighted the need to identify and describe emotions as a means for easier transition into survivorship. As intrusive thoughts have been found to partially explain the association between AEE and pain interference (Wang et al., 2018) it is important to consider these findings that suggest the relationship between intrusive thoughts and suppressing emotions flows both ways. In this, suppressing emotions leads to increased intrusive thoughts, and increased intrusive thoughts plays a role in individuals feeling ambivalent over emotional expression.

Thomas et al. (2017) used a qualitative approach to investigate emotional expression in breast cancer survivors. Themes that occurred were ‘sharing in a safe space’ and ‘seeking permission to express’. Relating to the first theme individuals shared that it was important that the space they expressed emotions in felt safe enough to do so. Participants shared that they found it difficult to express such emotion outside of the group of people with similar experiences to them. This relates to previous studies of emotional expression (Craft et al., 2013; Stanton et al., 2000) which discussed the role of social support and how this impacts on being kind to oneself as well as being able to express emotions. The second theme of ‘seeking permission to express’ saw that participants felt they had to grant permission to themselves in order to express emotions. Individuals expressed that it was difficult to give this permission to themselves during diagnosis and treatment with the focus being on getting better. One shared that giving permission allowed them to ‘release emotions that are bottled up’.

Integration of findings

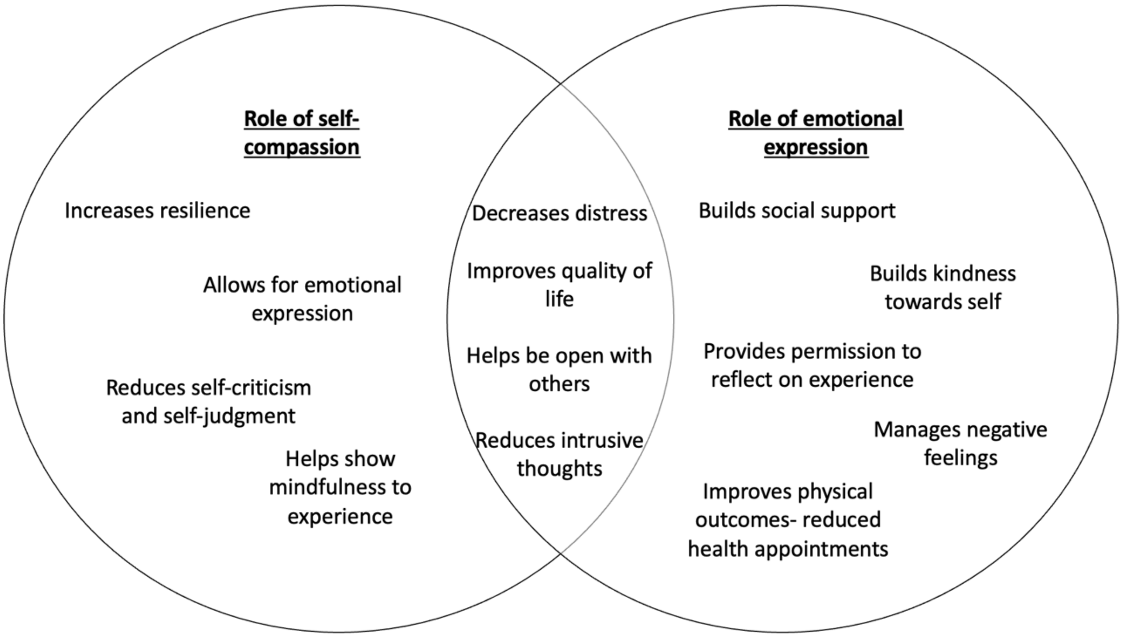
Figure 2 shows the themes found throughout all papers reviewed within the literature review.

Similar themes were found among papers investigating self-compassion and/or emotional expression. Themes of reducing distress, improving QoL and reducing intrusive thoughts were common in both groups of papers. The roles for self-compassion and emotional expression appeared to overlap as seen by these common themes but it appeared that self-compassion and emotional expression each played a role in influencing the other. For example, in demonstrating mindfulness it allowed for attention to and expression of emotions experienced. Moreover, in expressing such emotions demonstrated a kindness to oneself in allowing them to process their experience.

Many papers highlighted that the roles of self-compassion and emotional expression in breast cancer survivors may be mediated by their social context. This may be a result of needing to feel safe in showing kindness to oneself and expressing emotions that are otherwise difficult to share.

Figure 2.

Themes drawn from the literature review findings for self-compassion and emotional expression.



Discussion

The main aim of the literature review was to determine the roles of self-compassion and emotional expression in individuals who have been diagnosed and treated for breast cancer. The literature reviewed considers the roles of both self-compassion and emotional expression with the aim of informing psychological interventions for individuals who have experienced diagnosis and treatment of breast cancer. It was demonstrated that self-compassion and emotional expression play a role in influencing one another as well as having their own positive effects on psychological wellbeing.

What role does self-compassion play for individuals with breast cancer who have completed primary treatment?

From the literature, it suggests that self-compassion may be important for individuals with breast cancer who have completed primary treatment. The literature provided a range of evidence to suggest the benefits of self-compassion for wellbeing and QoL (Alizadeh et al., 2018; Brown et al., 2020; Forti et al., 2016; Gonzalez-Hernandez et al., 2018). The main roles that were found in the literature included: reduction of distress including depression and anxiety symptoms, improved psychological functioning and QoL, increased resilience, overcoming fear of recurrence, and reduction of self-criticism/self-judgment.

The reviewed literature suggested that survivors of breast cancer with high self-compassion may be at reduced risk of stress and negative impacts of cancer in the long term which supports previous literature that when faced with an illness such as breast cancer people with higher self-compassion tend to take good care of their health (Brion, Leary & Drabkin, 2014). Increased self-compassion plays a role in reducing self-criticism and self-judgment, which may be a result of self-compassion suppressing the threat system thus reducing threat focus (Gilbert, 2017). Literature reviewed suggested that attachment styles may influence the role of self-compassion in breast cancer survivors as individuals high in attachment avoidance and anxiety were found to have lower self-worth. Neff and McGhee (2010) also found that self-compassion partially mediated the relationship among perceived maternal support, family functioning and attachment security as predictors of wellbeing (Racque et al., 2011). This highlights the role of self-compassion in bolstering the relationship between attachment anxiety and wellbeing. Reflecting from a social mentalities point of view, common humanity as part of self-compassion may access mentalities related to attachment or affiliation as well as compassion (Gilbert, 2017). This suggests that a focus on building common humanity in breast cancer survivors may serve to increase self-worth and self-compassion for individuals with avoidant/anxiety attachments.

Fear of recurrence is highly prevalent in individuals who have had breast cancer and worry that it will return, this worry can then impact on QoL and wellbeing (Koch et al., 2014). Worry has been discussed as a future oriented cognition linked to the fear of recurrence that individuals with breast cancer commonly experience (Brown et al., 2020). To this, self-compassion may offer an alternative remediation where social reassurance is ineffective. Furthermore, the CBCT programme provided by Gonzalez-Hernandez et al. (2018) which focussed on bolstering self-compassion saw improvements in being kind to oneself which previously has been linked to resilience (Celik et al., 2021). This increased resilience may serve as a role in alleviating the fear of recurrence or being able to manage the fear with positivity and strength (Koral & Cirak, 2021).

What role does emotional expression play for individuals with breast cancer who have completed primary treatments?

The reviewed literature suggests that emotional expression may be helpful for individuals with breast cancer who have completed primary treatment. The main roles that were found in the literature included: reduction of distress including depression and anxiety symptoms, improved psychological functioning and QoL, managing negative feelings, and sharing experience with others.

Reviewed literature highlighted that emotional expression may be a form of emotional coping that predicts increased QoL for survivors of breast cancer (Stanton et al., 2000; Craft et al., 2013; Tsai & Lu, 2018; Wang et al., 2018; Nakatani et al., 2014). This suggests that it plays an important role in psychological wellbeing following cancer. Research suggested that expressive coping was useful in this way when a socially receptive context was provided to the individual. This suggests that an individual’s social resources influence the role of emotional expression. A reason for this may be that social support allows for communication and establishes an empathic relationship where emotional safety is established (Alizadeh et al., 2018).

Noori and Khayatan (2017) suggested that the expression of emotion can play a negative role, as it can intensify distress and interfere with active coping efforts. Stanton et al. (2000) supported this as women who expressed emotions were found to become more distressed over time. It may be that prolonged coping by emotional expression may become counter-intuitive. With this, it may be helpful to consider providing intervention which is mindful of the length of time emotional expression is utilised and which considers the use of other forms of coping. It is also important that a clinician be mindful of cultural experience and differences individuals may have in terms of expressing emotions. For some this may come naturally but for others this may be difficult to experience with individualistic due to social circumstances people have learnt early in life (Ekman & Friesen, 1969).

Emotional expression refers to the outward observable display of emotion and the inhibition of this is suggested to play a critical role in both physical and mental health concerns (Graves et al., 2005). Reviewed research reflects this with findings that emotional expression following primary treatment was not only helpful in reducing psychological distress but also in improving self-perceived physical health status (Stanton et al., 2000; Wang et al., 2018). Moreover, for some individuals, being able to identify and describe emotions made for an easier transition into survivorship (Forti et al., 2016).

Papers included in the review also looked at ambivalence over emotional expression whereby individuals want to express emotion but are unable to. The findings suggested that individuals with ambivalence over emotional expression may increasingly use avoidant coping mechanisms which lead to increased psychological distress and decreased QoL (Tsai & Lu, 2018; Wang et al., 2018). This suggests that not being able to express emotions can have detrimental effects on wellbeing post-breast cancer treatment, highlighting the key role in expressing emotions following treatment. This coincides with previous research which highlights the need for interventions aimed at decreasing AEE to help alleviate depressive symptoms and intrusive thoughts (Lu et al., 2015). Self-compassion may play also play a role with this in that developing self-kindness can serve to build resources and reduce negative intrusive thoughts by allowing the individual to let go of self-criticisms (Forti et al., 2016). From this growth in self-kindness individuals may see a decrease in AEE as they embrace negative thoughts and emotions.

What are the clinical implications of this research for supporting the psychological needs and improving quality of life in women with breast cancer who have completed primary treatment?

The reviewed literature has provided ideas on how interventions may be tailored to support the psychological needs and improve the QoL of women who have completed primary treatment for breast cancer. The review suggested that emotional expression and self-compassion offer a key role in bolstering wellbeing therefore interventions which support the development of these would be useful.

Expression of emotions can be difficult, especially after a traumatic event and the reviewed literature highlighted the importance of creating a safe space for breast cancer survivors to be able to express both positive and negative emotions. Some papers (Stanton et al., 2000; Thomas et al., 2017; Tsai & Lu, 2018) in the review highlighted the relationship between emotional expression and social context, with it suggesting that increased social support and socially receptive environments can improve the expression of emotion and self-compassion thus increasing wellbeing. Social contexts which feel safe are important as individuals reported finding it difficult to do this outside of the group of breast cancer survivors. Moreover, sharing negative feelings of anger and fear with family felt unhelpful with individuals having a drive to protect their family from such emotions. The review also highlighted the need for individuals to give themselves permission to express emotions which may link to the need for a safe space in order to give this permission. Reviewed literature suggested that individuals found giving this permission difficult during diagnosis and treatment due to focus on the physical aspects of their experience and after treatment there are few opportunities. This highlights a clinical need to provide individuals with the safe space and reassurance to offer themselves permission to share and discuss their emotions. Sanchez et al. (2022) introduced breast cancer focus groups and evaluated their usefulness with findings suggesting that it is important for professionals to facilitate the recognition and discussion of emotions in order to maintain and recover QoL post-breast cancer. The focus in one reviewed paper on expressive writing highlighted the usefulness of arts-based approaches in addressing emotional expression and offering individuals a space to write about, draw or speak about their experience and emotions (Thomas et al., 2017). It also highlights the role again for self-compassion whereby individuals may need to prioritise themselves and their own self-care in order to find opportunities to feel safe and provide themselves permission to express emotions.

The CBCT programme (Gonzalez-Hernandez et al., 2018) which focussed on enhancing self-compassion highlighted its role in increasing self-kindness and common humanity as well as improving psychological functioning. This highlights that interventions focussing on increasing self-compassion may be a useful tool for survivors of breast cancer. The use of the Self-Compassion Scale (Neff, 2016) was also seen to be an indicator for psychological distress in the future in that high scores predicted worse outcomes post-intervention. This provides implications for clinical practice whereby the measure may be used as a risk factor to assess individuals after treatment, giving scope to whether psychological intervention may be helpful.

It may be useful for clinicians to highlight the associations with emotional distress, thinking about the cognitive processing of stressful events like cancer. Clinicians may provide explanation that suppressing emotions can lead to continued or more frequent intrusive thoughts which result in decreased psychological wellbeing (Nakatani et al., 2014). For example, using the ACT metaphor set forth by Harris (2019) which describes negative emotions as a beach ball whereby continuing to suppress them only make them resurface more impactfully. Following this there may be a clinical need to focus on emotion regulation work, managing positive and negative emotions in order to ease psychological distress. This should be an integral part within treatment for breast cancer because up to one third of women develop severe anxiety or a depressive illness within a year of diagnosis (National Institute for Healthcare Excellence [NICE], 2002).

Self-compassion was seen to influence emotional expression as increased kindness to oneself may help embrace post-treatment emotions which may allow for improved emotional expression (Forti et al., 2016). Moreover, in developing common humanity an individual may feel safe enough to explore their emotions and experiences (Thomas et al., 2017). Furthermore, increased mindfulness allows you to pay attention to emotions and process them thus reducing the risk of AEE. The relationship between self-compassion and emotional expression appears to flow both ways with emotional expression allowing individuals to be mindful to their feelings, share these with others and develop a sense of common humanity in shared experience. Similarly, in expressing emotion you are providing permission to yourself to be kind and non-judgmental which are key facets of self-compassion (Alizadeh et al., 2018; Brown et al., 2020). This suggests that interventions focussing on either self-compassion and/or emotional expression can have positive effects by the influential role each one takes on the others as well as their individual impacts to wellbeing.

Implications of quality/ design

Many papers included tended to provide correlational results which means that causation cannot be inferred, and there may be other factors contributing to the findings other than emotional expression and self-compassion. However, it provides a starting point for clinicians to think about implementing strategies reflecting on self-compassion and emotional expression with breast cancer patients.

Some papers had decreased quality due to sampling issues like non-response bias and incomplete data. As a result, the population in this sample may not be representative as non-responders not sharing relevant information may alter results fand subsequently conclusions made. In some papers the risk of non-response bias could not be determined which means that it is unclear whether the sample is representative of the whole population (Berg, 2005). The sampling strategy used in all papers involved self-selection which introduces bias and reduces generalisability. However, this strategy was relevant to the address the research question in all papers.

Papers considered within this review were taken from a variety of countries, which highlights that the findings are consistent among countries. However, the use of self-compassion or emotional expression may vary among countries and the importance given to these may be different. This is because various countries will have alternative display rules for emotional expression and these rules depend on social circumstance (Ekman & Friesen, 1969). Display rules in different cultures may lead to amplification, de-amplification, neutralisation, and masking of emotions experienced (Matsumoto, 2013). For example, Matsumoto and Kupperbusch (2001) found that collectivist individuals masked negative feelings to a higher status experimenter whereas individualistic individuals did not. This may be because in various cultures there are different culturally available events leading to different emotional reactions from individuals (Matsumoto, 2013). Moreover, self-compassion may be a context-dependent characteristic influenced by group norms, values and practices (Gilbert et al., 2011) therefore experience of and the role of self-compassion may vary across cultures depending on these norms, values and practices. As a result, clinicians or patients may not want to focus on increasing these areas if decided it is not important nor relates to them specifically.

Standardised scales were used within the reviewed papers to assess self-compassion, QoL, psychological functioning, and emotional expression. The scales used were commonly used in clinical research and practice with demonstration of good reliability and validity. However, as many measures were used to measure similar items it suggests not one standard way of measuring each component. As a result, it is difficult to integrate and compare findings.

Conclusion

In conclusion, this review has found that self-compassion and emotional expression can play a positive role for individuals who have experienced cancer diagnosis and primary treatment. Although there are limitations to the review and scope for further research, it provides a clear idea of interventive strategies which may be useful in improving QoL and reducing distress in survivors of breast cancer. The review indicates that self-compassion and emotional expression play a significant role in improving psychological functioning and QoL by reducing depression and anxiety; increasing resilience; reducing negative intrusive thoughts; and allowing the sharing of emotions with others. The literature suggests that interventions which focus on developing compassion for the self and improving expression of emotion may be beneficial in improving physical and mental wellbeing after primary breast cancer treatment. According to the ‘Party of Esteem Principle’ mentioned within the Health and Social Care Act (2012) mental health must be given equal priority to physical health (Centre for Mental Health, 2013). However, currently there is little guidance on the psychological interventions that may be helpful for mental health difficulties post-treatment of breast cancer, with NICE guidance currently focussing on physical aspects of care. Individuals who have completed primary treatment have reported feeling lost in the transition from patient to survivor (Hewitt et al., 2005) with individuals who are free from active disease experiencing similar wellbeing difficulties that individuals with long-term health conditions experience (Maher & Fenlon, 2010). With the NHS Long Term Plan wanting to improve quality of life and patient experience for individuals with cancer (NHS, 2019), the current review focused on the roles of self-compassion and emotional expression as factors important for clinicians to address and work on with individuals living past breast cancer.

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Part Two – Relationship Between Proactive Coping and Compassion Fatigue in Pallaitve Care Nurses Working in Oncology.

Investigating Compassion in Cancer Nurse Staff.

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This paper is written in the format outlined for submission by the British Journal of Psychology. Please see Appendix C for the Author Guidelines.

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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Abstract

Compassion fatigue is highly prevalent among nurse populations, particularly in palliative care where traumatic experiences of patient and carers are experienced daily. Proactive coping is a form of coping which seeks to utilize resources efficiently to prevent compassion fatigue and stress before it occurs. This study sought to investigate whether proactive coping is predictive of levels of compassion fatigue and compassion satisfaction in a population of palliative care nurses who work with cancer patients. 62 participants completed an online survey which included measures of proactive coping, compassion fatigue, compassion satisfaction and work-related questions. A regression analysis was conducted to compare whether proactive coping adds to the contribution of compassion fatigue and satisfaction when other factors are accounted for. Proactive coping was found to be a significant predictor for both compassion fatigue and satisfaction. Personal stressors were also a significant predictor of compassion fatigue. The findings suggest that the use of proactive coping may be a useful intervention to prevent compassion fatigue and bolster satisfaction in palliative care nurses.

Keywords: compassion fatigue, compassion satisfaction, proactive coping, cancer, palliative care, nurses

Introduction

Palliative care aims to ensure the best possible quality of life (QoL) for people that have terminal illnesses (Dixon et al., 2015). This involves managing symptoms and providing support. It has been estimated that each year 48,000 people experience poor health care in the final three months of their lives (National Institute for Health and Care Excellence [NICE], 2011). This could partly be attributed to staff burnout as staff who work directly with patients encounter increased exposure to the emotional and physical needs of patients; this can lead to absenteeism, intention to leave and high staff turnover (NICE, 2011). Staff may also experience ‘learned helplessness’, that is when an individual has become conditioned to expect emotional pain and suffering and finds it inescapable (Seligman, 1972). The exposure to emotional pain and suffering may enhance stress levels (Sabo, 2008). Consequently, staff wellbeing and their ability to provide care may be compromised thus inevitably impacting on their ability to provide high quality patient care (Koinis et al., 2015).

Compassion

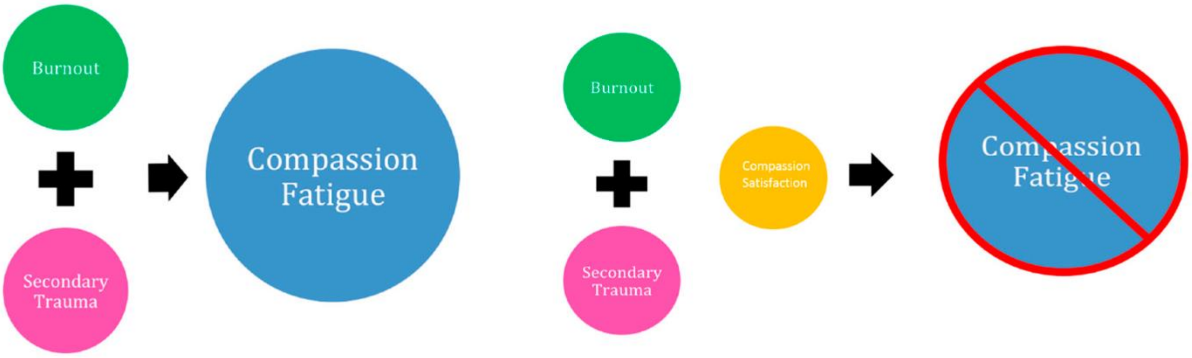
Defining Compassion, Compassion Satisfaction & Compassion Fatigue

Compassion can be defined as an emotional response that arises when a person witnesses another in distress and feels the urge to help (Lazarus, 1991). A compassionate person is often thought of as empathic, kind and caring (Goetz et al., 2010). Compassion can be experienced as three flows: (i) compassion to others; (ii) compassion to self; and (iii) compassion from others (Gilbert, 2010). Through intelligence and social cognition, we can shape our sensitivity to suffering in oneself and others, motivating us to lessen that suffering (Gilbert, 2017).

Compassion Satisfaction (CS) relates to the pleasure an individual feels from helping another (Stamm, 2002). When providing care to others, individuals may find it difficult to maintain such compassion, known as the ‘cost of caring’ (Figley, 1995). Compassion fatigue (CF) can be described as a state of tension and preoccupation, which can result in anxiety, anger, re-experiencing, hypervigilance or irritability (Figley, 1995; Wright, 2004). CF often arises due to burnout, that is a state of exhaustion caused by long-term involvement in highly emotional situations (Pines & Aronson, 1988). Burnout and secondary traumatic stress may both lead to CF but is proposed to be mediated by the positive effects of CS, as seen in Figure 1 (Middleton, 2015).

Figure 1.

Compassion Fatigue Model (Middleton, 2015).



CF & CS in Healthcare Staff.

CF is common in medical settings where job demands are high and this can result in an energy depletion process that exacerbates strain on the body (Crawford, et al., 2010). This strain results in increased burnout thus increasing the risk of CF (Cocker & Joss, 2016). CF has been described as the loss of ability to nurture (Joinson, 1992) and can occur when medical staff are exposed to repeated stressful experiences of their patients (Fukumori et al., 2018). When staff experience CF it can affect their professional QoL resulting in a deleterious impact on both their wellbeing and the care patients receive (Smart et al., 2014). Negative effects of this include poor job attitudes and lack of concern (Smart et al., 2014). Moreover, research suggests that a decrease in CS among staff can lead to ineffective treatment of patients with problems such as misjudgements, clinical errors, and poor treatment planning arising (Figley, 2002; Bride, et al., 2007; Adams, et al., 2008). CF can also result in hopelessness and helplessness among staff as well as increasing the likelihood of depression (Bhutani et al., 2012).

Factors found relating to the onset of CF include a lack of support from peers, a lack of understanding of what it is, and how it can be recognised (Perry et al., 2011). One of the most salient factors influencing the onset of CF is staff's perception of being unable to ease the pain and suffering of their patients (Perry et al., 2011; Fukumori et al., 2018). Previous research has suggested that healthcare staff who have high CS have healthy coping mechanisms and resources to combat secondary traumatic stress and prevent CF (Makic, 2015). Hunt et al. (2019) found a negative correlation between personal distress and CS suggesting that personal distress may reduce levels of compassion satisfaction in healthcare staff. Research has also found a seemingly robust relationship between self-care strategies and higher levels of compassion satisfaction with decreases in CF (Alkema et al., 2008). Therefore, investments in programs that can increase self-care and CF may ameliorate high staff turnover rates and quality of care (Zhang et al., 2018).

Experiences of CF and CS in Oncology Staff.

Oncology settings experience high suffering with more than a quarter of staff in this setting at risk of CF (Hunt, et al., 2019). This is understood through the enduring losses that are experienced making them highly vulnerable to burnout (Lewis, 1999). Staff suffering from CF in this setting are also at greater risk of declines in their immune system, QoL, and job satisfaction (Figley, 2002). Moreover, greater emotional exhaustion was found in oncology professionals in comparison to professionals caring for patients with HIV and AIDS (Dorz et al., 2003). Interestingly, Potter et al. (2013) investigated CF in oncology nurses and the usefulness of a resiliency program. They found CF may be influenced by the number of years' experience working in an oncology setting with individuals that had 11-20 years of experience having the highest percentage of high-risk scores on all CF, CS and burnout scales of the Professional Quality of Life inventory (ProQol; Stamm, 2009). This suggests that time in service may be a salient factor influencing CF and CS within this population.

Interventions to manage CF in oncology settings are garnering further interest with suggestions of a ‘menu’ of interventions being provided to offer idiosyncratic care (Aycock & Boyle, 2009). Resiliency programmes have been found to significantly reduce CF and burnout (Cavanagh et al., 2020). Figley (2002) suggested one way to combat CF is to foster feelings of satisfaction and achievement within nurses, a key feature of resiliency programs. When investigating the usefulness of a resiliency program aimed at educating oncology nurses on CF Potter et al. (2013) found that the program provided long-term benefits which included: decreased secondary traumatic stress; and an increased ability of utilising resilience strategies at work and at home. The paper concluded that developing resilience may enable individuals to manage day to day stressors effectively and may equip nurses to work and live more intentionally reducing the risk of CF.

Coping

Defining Coping.

Stress arises when individuals perceive that they cannot adequately cope with the demands of others or their environment (Lazarus, 1966). Coping can be defined as constantly changing cognitive and behavioural efforts to manage external or internal demands that are appraised as exceeding the resources of the person (Lazarus & Folkman, 1984). Coping strategies are initiated when demands elicit certain emotions with the aim to ameliorate said emotions (Lazarus & Folkman, 1984). Understandings of styles of coping have evolved with the most common being problem-focussed coping and emotion-focussed coping. Problem-focussed involves seeking support from others or involves a process of cognitive restructuring (Brown & Prinstein, 2011). Meanwhile emotion-focussed coping may involve avoidance, substance use or emotional ventilation in some capacity (Brown & Prinstein, 2011). A recent review of coping styles in Australian nurses from all fields demonstrated that whilst both coping styles are utilised, most nurses engage in problem-focussed coping (Lim et al., 2010). Research has also shown the use of problem-focussed coping is negatively associated with occupational stress (Goh et al., 2010) suggesting this form of coping may reduce occupational stress in healthcare professionals. Emotion-focussed coping has been associated with negative adaptations (Austenfeld & Stanton, 2004) and has shown to positively relate to occupational stress (Ebstein et al., 2019). This suggests that it may not be a useful strategy to address occupational stress. The Transactional theory of Stress and Coping, however, suggests that neither strategy is effective nor ineffective; instead, the effectiveness is dependent on how well that strategy corresponds with the appraisals held by the individual (Cummings & Cooper, 1998).

Proactive Coping

A proactive individual strives for improvement in their life and environment instead of reacting to a past or anticipated adversity (Greenglass et al., 1999). Proactive coping (PC) is autonomous in nature and consists of self-determined goals; it includes self- regulatory goal attainment processes and outlines how people may strive for ambitious goals while committing themselves to personal quality management (Greenglass et al., 1999).

PC is another coping strategy that includes skills to assess changing environments more accurately so that stress can be recognised and minimised (Blum et al., 2012). PC incorporates a confirmatory and positive approach to dealing with stressors and it broadens models of stress and coping to include positive affect (Greenglass & Fiksenbaum, 2009). It can be defined as a method to appraise future goals and set the stage to achieve them (Schwarzer & Taubert, 2002). PC provides individuals with a sense of self-worth and belief in their own ability to exert control; in turn, leading to positive outcomes which promote wellbeing (Greenglass & Fiksenbaum, 2009). PC tends to be associated with positive outcomes such as goal achievement and lower levels of distress (Blum et al., 2012) suggesting that it may be a useful strategy in buffering against CF. However, as the focus is on the future, for some it can lead to hypervigilance which has linked previously to negative outcomes such as anxiety (Blum et al., 2012). Individuals higher in coping resources are more likely to use PC (Sohl & Moyer, 2009). Therefore, providing these resources to staff may aid in increasing proactive coping and thus increasing wellbeing. PC can be split into five stages, these are: (i) acquiring of sufficient resources; (ii) screening the environment for danger; (iii) recognise and appraise cues indicating potential stressors as a threat; (iv) implement initial coping efforts behavioural and cognitive seeking more info and planning to prevent/minimise stressor; (v) feedback, providing information about the development of the potential stressor and the result of the coping efforts so that it can be evaluated as useful/un-useful (Ouwehand et al., 2007).

Research on proactive coping.

Cruz et al. (2018) assessed optimism and proactive coping use in hospital nurses in the Philippines and examined their influence on QoL. They found that optimism and proactive coping when dealing with work related variables had a positive impact on their QoL. Research has also found that higher levels of proactive coping behaviours are associated with lower levels of burnout (Chang & Chan, 2015). Gillespie and Gates (2013) investigated similar ideas in emergency care nurses and found a negative correlation between proactive coping and traumatic stress. This suggests that a focus on planning and preparation to provide care for trauma patients may be effective at preventing traumatic stress in staff.

Summary

CF is experienced by many healthcare professionals and can cause negative effects on wellbeing in addition to patient care (Figley, 2002). Consequences of lower standards of care include an impact on health and independence of the patient and increases the responsibility on families or other carers to support the patient (Carers UK, 2014). A recent systematic review on CF in oncology nurses suggested that at least 22% of nurses are at high risk of CF (Xie et al., 2021). Passive coping styles have been found to increase this risk of CF in staff working in an oncology setting (Yu et al., 2016). Research on the effects of proactive coping strategies such as problem solving or support seeking in nurse populations suggests that it may provide higher personal accomplishment (Ding et al., 2015), increased job satisfaction (Liu et al., 2015), and lower levels of strain (Laschinger et al., 2015). This research seeks to investigate if proactive coping can have similar positive benefits for nurses who work in palliative care where traumatic stress and CF are high. The present study will first address whether palliative care nurses are utilising proactive coping and if so, does this predict levels of CF and CS?

The Current Research

Currently, the literature suggests that CF is high in an oncology setting and resilience programs are useful at reducing the effects of CF (Cavanagh et al., 2020). Existing research on the usefulness of proactive coping predominantly focuses on nurse staff in general settings or in trauma. The effects of proactive coping within these populations suggest it may be a suitable buffer to developing CF. Similar findings were presented with oncology patient populations, for example Fujimoto and Okamura (2021) investigated PC in breast cancer patients and found that proactive coping enhances post-traumatic growth. Post-traumatic growth can be defined as the positive changes experienced by individuals following exposure to trauma (Calhoun & Tedeschi, 2014). There is little research on PC in palliative care nurses within oncology however palliative care nurses are also exposed to trauma vicariously (Sabo, 2006) and are therefore highly susceptible to CF (Stamm, 2007). Therefore, it is important to determine whether PC strategies are utilised and if this predicts CF in this population group. This will not only serve to fill the gap in the literature but also offer an idea for development in interventions for CF that may focus on bolstering PC in palliative care nurses.

Research questions

1. How prevalent is compassion fatigue in palliative care nurses working in oncology?
2. What factors influence compassion fatigue?
3. Are levels of proactive coping predictive of levels of compassion fatigue experienced by palliative care nurses (when other IVs are controlled for)?
4. How prevalent is compassion satisfaction in palliative care nurses working in oncology?
5. What factors influence compassion satisfaction?

6. Are levels of proactive coping predictive of levels of compassion satisfaction experienced by palliative care nurses (when other IVs are controlled for)?

Based on the research and questions provided, the following hypotheses are stated:

1. Compassion fatigue will be highly prevalent in the sample of palliative care nurses working in oncology.
2. The use of proactive coping in palliative care nurses will predict levels of compassion fatigue experienced.
3. Compassion satisfaction will be highly prevalent in palliative care nurses working in oncology.
4. The use of proactive coping in palliative care nurses will predict levels of compassion satisfaction experienced.

Hypotheses for research questions two and five are not provided due to the exploratory nature of the questions.

Materials and Method

Design

This study utilised a quantitative cross-sectional design where data were collected via an online survey to investigate what factors may be linked to compassion fatigue and compassion satisfaction in palliative care nurses. The study aimed to establish whether proactive coping predicts levels of CF and CS in this population.

Participants

Participants were recruited from five NHS Trusts and two charities in the United Kingdom between 01/11/22 and 31/03/23. Participants were recruited via email invitation which was distributed by a local collaborator in each Trust or chosen charity. In addition, individuals were also invited via posts on social media. All participants were sent an online survey. To take part in the study individuals had to: currently work as a nurse with palliative care patients in oncology for at least six months. Individuals who have worked in oncology less than six months were excluded. The recommended sample size was determined using GPower Version 3.1.9.7 software (Faul et al., 2009) which suggested a sample size of 55 in order to obtain 80% power to detect an effect size of 0.15. It was difficult to determine a precise power calculation with limited research reporting such statistics. 83 individuals completed the survey but due to data omissions 21 participants were removed. 62 individuals had complete data and therefore their responses were utilised in the study.

Measures

Information about the participants were collected including gender; their job role; length of time in the job role; whether they are currently experiencing personal stressors; the setting they work in; the number of contracted hours; impact of COVID; overtime; and whether incentives are provided. Personal stressors were included as research has suggested that this stress may be displaced in the work setting (Boyle, 2011). Individuals respond ‘yes’ or ‘no’ to the question ‘In the last month have you experienced personal stressors (such as bereavement, relationship breakdown, illness/family illness)?’ The impact of COVID was considered as the pandemic changed access to resources and job demand therefore it may have impacted on levels of CF and CS in the workplace. Participants were asked ‘In what ways has COVID impacted your job role?’. This information was collated and those who provided responses were considered to have been impacted by COVID and individual who did not respond or responded saying ‘no impact’ were considered to have not been impacted by COVID. The numbers in each category were then used in the regression analysis and the impacts provided were used as contextual information in the discussion.

Professional Quality of Life: The Professional Quality of Life Scale (Stamm, 2009) was used to establish levels of compassion fatigue, compassion satisfaction and burnout. The measure comprises of 30 statements that ask participants about their experience as a helper in their job role. Participants rate on a 5-point Likert scale (never, rarely, sometimes, often and very often) how frequently they experience each statement in their job role over the last 30 days. The ProQol has demonstrated good construct validity across 200 papers (Stamm, 2010) and high reliability for burnout (α = .80), CF (α = .84) and CS (α = .90) (Rees et al., 2018).

Due to shared variance between burnout and secondary traumatic stress scales, the authors suggest combining burnout and the CF scale. As a result, the scores will be combined in this study. For each component the question scores were added together. For compassion fatigue (burnout and secondary traumatic stress) the following questions were added together: 1*, 4*, 8, 10, 15*, 17*, 19, 21, 26, 29*, 2, 5, 7, 9, 11, 13, 14, 23, 25 and 28 (maximum total score of 100). For compassion satisfaction the following questions were added together: 3, 6, 12, 16, 18, 20, 22, 24, 27, 30 (maximum score of 50). Questions with an '*' were reverse scored, this means if a participant rated the statement 1 it would be scored as 5 (Appendix J).

Table 1.

Score categories for Compassion Fatigue and Compassion Satisfaction.

Compassion Fatigue (Combined STS and burnout score)	Compassion Satisfaction	Categorisation
≤ 44	≤22	Low
45-83	23-41	Medium
≥84	≥42	High

Proactive Coping: The Proactive Coping Scale within the Proactive Coping Inventory (Greenglass et al., 1999) was used to assess proactive coping. Participants responded to a series of statements using a 5-point Likert scale with choices ranging from 'not at all true' to 'completely true’. Question numbers 2, 9 and 14 are all reverse scored so a score of 1 would indicate 5 and a score of 2 would indicate 4 and so on (Appendix J).

There are no cut-off scores as the authors do not endorse the view people can be categorised in such a way. Cohen (1983) suggested that breaking participants using a median split should also be undertaken with caution as it leads to a loss of variance. As a result, the raw scores were used and interpreted. The range of possible scores for this measure range between 14-56. This means that all individuals score as utilising proactive coping in some way, with higher scores suggesting increased use of proactive coping.

The scale has demonstrated good reliability across samples such as in a Polish adult sample (α = .85) and a Canadian student sample (α =.80) (Greenglass et al., 1999). Principle component analysis ran by Greenglass et al. (1999) confirmed the inventory’s factorial validity and homogeneity.

Procedure

A survey link containing the measures above was designed using JISC Online Survey software (https://beta.jisc.ac.uk/online-surveys) which was emailed to staff or posted on social media. Upon clicking the survey link participants were presented with the participant information sheet (Appendix H). They had time to read this and email the researcher with any questions. Participants then completed the consent form (Appendix I). Participants were asked the demographic/profession questions first, followed by the Proactive Coping Scale and finally the ProQol. The final page contained a debrief (Appendix K) which provided information on where to access further support if required. Participants were able to drop out at any time until the questionnaire was completed and submitted but save progress was not used as it was important that the data be from the same period. The survey (Appendix J) was designed to take 10-15 minutes in one sitting. Not all fields were mandatory as for those where a text box was provided it was not a requirement to write something.

Data analysis

Data was explored using descriptive statistics followed by statistical analyses. All analyses were run using the statistical software programme IBM SPSS Statistics (IBM Corp, 2020). The results of the survey were analysed using a general linear regression model. For the research questions provided, proactive coping; time in job role; personal stressors; impact of COVID; overtime; and incentives for overtimes were all considered as predictors with CF and CS being the outcomes. Impact of COVID, personal stressors, overtime and incentives were all entered as categorical independent variables. Time in job role was entered as an ordinal independent variable. When assessing for the assumptions of linear regression, normal distribution plots were reviewed for CF (Appendix M, Figure 1 & 2) and CS (Appendix N, Figure 1 & 2) which found data to be normally distributed and linear. Multicollinearity was measured using linear regression analysis which found that all variables were below the variance inflation factor (VIF) of 2.5 for CF (Appendix M, Table 3) and CS (Appendix N, Table 3) indicating limited difficulty with multicollinearity (Johnston et al., 2018). Scatterplots for both CF (Appendix M, Figure 3) and CS (Appendix N, Figure 3) indicated that the assumption for homoscedasticity was met. The regression analysis allowed the prediction of certain factors which may influence both CF and CS in the current sample. Durbin-Watson test was used to assess for autocorrelation. An ANOVA was also performed to investigate whether the setting of work also contributes to the variance in CF and CS scores (Appendix O, Table 1).

Results

A total of 83 participants completed the survey. Missing data was found for 21 participants, so these were excluded leaving a total of 62 participants who were included in the statistical analysis.

Sample Characteristics

As shown in Table 2, the sample consisted of mostly females (*n*= 61, 98%) with males disproportionately represented (*n*=1, 2%). Health Education England (2018) highlighted that 96%

of cancer nurses are female with only 4% being male suggesting that this disproportion is not dissimilar to the wider population. Participants ranged in years they had worked in their current job role from 11 months to 30 years with an average time in job role of 13.4 years (*SD*= 9.3). The service participants worked in varied between community (*n*=25, 40.3%); acute (*n*=24, 38.7%); hospice (*n*=12, 19.4%); and a combination of acute and community (*n*=1, 1.6%). Of the participants who completed the survey 52.5% (*n*=32) had experienced personal stressors (e.g., bereavement, relationship breakdown, illness/family illness) in the last month of completing the survey and 47.5% (*n*=29) had not. Participants described that personal stressors in their life made them feel more stressed and anxious; it resulted in time off sick; and put a strain on relationships with lower tolerance to others. Some participants reported that they experienced resonation with patients and carers and for others it put into perspective their own stresses. A range of job roles were present in the sample provided with the most common role being a clinical nurse specialist (*n*= 30, 48%). See Table 2 for each professional role along with participant total and percentage. Of those who took part, 92% (*n*=57) confirmed they work overtime each week with this ranging from one extra hour to 48 hours over. With this, participants were asked if they are incentivised for any extra hours worked and 55% (*n*=34) said yes and 45% (*n*=28) said no. The common incentives involved time off elsewhere, increased wages, or increased rate of pay. Others commented that they are told “to use better time management” and “if the extra hours are within your working day, then no incentive is provided”.

Participants were also asked about the impacts of COVID on their job role. Common themes among responses were changes to clinical work like telephone support rather than face to face appointments; supporting staff psychologically; barriers to communication; patient, and family distress as well as nurse distress for own family; medics slow to diagnose and delayed surgeries; staff shortages due to sickness.

Table 2.

Sample Characteristics.

Measure	Number of Participants
Gender	
Male	1
Female	61
Job role	
Palliative Care Nurse Practitioner	2
Palliative Care Nurse Specialist	9
Cancer Nurse Specialist	30
Primary Nurse Specialist	1
Registered Nurse	4
Junior Sister	1
Macmillan Nurse	1
Staff Nurse	6
Matron	1
Practice Development Nurse	1
District Nurse	1
Community Nurse	2
Hospice Nurse Specialist	1
Deputy Ward Manager	1
Advanced Clinical Practice Nurse	1
Years in Job Role	
0-5	18
6-10	10
11-15	12
16-20	8
21-25	5
26-30	8
30-35	1
Work Setting	
Acute	25
Community	24
Hospice	12
Acute and Community	1
Impacted by COVID	
Yes	58
No	4
Hours worked per week	
15-20	2
21-25	4
26-30	13
31-35	3
36-40	40
Overtime hours per week	
No hours	6
1-10	41

11-20	7
21-30	3
31-40	4
40-50	1
Incentives given for overtime	
Yes	34
No	28
Experience of personal stressors in the past month	
Yes	33
No	29

Table 3 provides the main correlational relationships found within the study. Notably, proactive coping was found to be significantly correlated with both CF and CS. For CF and proactive coping there was a significant negative correlation (*r*=-.289) highlighting that higher proactive coping may result in lower CF. CS and proactive coping demonstrated a significant positive correlation (*r*=.525) suggesting that increased proactive coping is correlated with increased CS. An interesting correlation was found between CS and CF, with a significant negative correlation (*r*=-.538) demonstrated. This suggests that higher levels of CS are correlated with lower levels of CF and vice versa.

Table 3.

Correlations for the main outcome variables.

Variable	1	2	3
1. Compassion Satisfaction	—		
2. Compassion Fatigue	-.538**	—	
3. Proactive Coping	.525**	-.289*	—

$^{*}p < .05$.
$^{**}p < .01$.

Research question 1: How prevalent is compassion fatigue in palliative care nurses working in oncology?

As shown in Table 4 the present sample had a mean CF score of 49.71 (*SD*= 9.83) out of a possible 100, suggesting that the average experience of CF in the sample was within a moderate range. This was based on cut-off scores for combined scores of burnout and secondary traumatic stress in the ProQol manual (Stamm, 2010). This suggests that 66.0% (*n*=41) of participants who completed the survey were experiencing moderate CF and 34.0% (*n*=21) were experiencing low CF (Table 5). No participants in the survey experienced high levels of CF.

Table 4.

The mean and standard deviation of scored surveys for compassion fatigue, compassion satisfaction and proactive coping.

Outcome measure	Mean score (Standard Deviation)
Compassion Fatigue	49.71 (9.83)
Compassion Satisfaction	41.58 (5.08)
Proactive Coping	41.68 (5.66)

Table 5.

Cut off scores and percentage of participants in each category for compassion fatigue.

Category	Cut-off scores	Percentage of participants scores (%)
Low	≤44	34
Moderate	45-83	66
High	≥84	0

Research question 2: What factors influence compassion fatigue?

Data was analysed using a general linear regression model. Assumptions for the regression model were met (Appendix M). Model 1 showed a regression for compassion fatigue considering the independent variables: personal stressors; time in job role; overtime per week; incentives; and impact of COVID. Gender was excluded from the regression analysis due to the disproportionate split of males and females. Work setting was also excluded from the regression as it had more than two levels, however an ANOVA (Appendix O, Table 1) revealed that work setting was not a significant factor for CF (F (3, 58) = .403, p=.752). The fit of Model 1 demonstrated that 13.2% of the variance in CF could be attributed to the five IVs. This model was not found to be statistically significant in predicting the variance in compassion fatigue (R^2 = .132, F (5,56) = 1.699, p=.150). The analysis also highlighted that personal stressors (p =.035) contribute significantly to CF in Model 1 suggesting that individual stress occurring within a month of completing the survey significantly contributed to the experience of low to moderate CF in this sample. No other predictors were statistically significant in predicting compassion fatigue within this sample (Table 6).

Table 6.

Regression Analysis examining the association between independent variables and compassion fatigue.

Variables	*Beta*	*SE*	*t*	*p*
Model 1				
Personal Stress	-5.384	2.497	-2.156	0.035
Time in Job	.037	0.135	0.274	0.785
Overtime per week	-1.018	4.484	-0.227	0.821
Incentives for overtime	-4.276	2.499	-1.711	0.093
Impact of COVID	4.143	5.087	0.814	0.419
Model 2				
Personal Stress	-6.241	2.373	-2.630	0.011
Time in Job	.044	0.127	0.342	0.733
Overtime per week	-6.496	4.648	-1.398	0.168
Incentives for overtime	-3.351	2.378	-1.409	0.165
Impact of COVID	1.655	4.875	0.339	0.736
Proactive Coping	-.656	0.232	-2.832	0.006

Research question 3: Are levels of proactive coping predictive of levels of compassion fatigue experienced by palliative care nurses (when other IVs are controlled for)?

As shown in Table 4, the average proactive coping score for the present sample was 41.68 (*SD*= 5.66) out of a possible score of 56. There are no cut-off scores for the PCI as the authors did not want to categorise individuals (Greenglass et al., 1999) therefore raw scores were used for interpretation. Levels of proactive coping were added to the regression analysis to determine whether scores are predictive of CF in the current sample. Model 1 was found to explain 13.3% of the variance for CF but this was not significant (R^2 = .132, *F* (5,56) = 1.699, *p*=.150). Model 2 involving proactive coping scores was found to explain 24.2% of the variance demonstrating an increase in variance of 10.9%. This result was statistically significant (R^2 = .242, *F* (5,56) = 2.930, *p*=.015). The difference in model fit between Model 1 and Model 2 was found to be statistically significant (*F* (6,55) = 2.930, *p* < .015) with little autocorrelation (Durbin-Watson = 2.161) (Table 7). This suggests that proactive coping makes a significant contribution to explaining the experience of CF in this sample. Like Model 1, personal stressors were also found to be statistically significant in Model 2 ((*p* = .011). For Model two, none of the other predictors were statistically significant in predicting compassion fatigue within this sample.

Table 7.

Model fit for compassion fatigue.

Model	R^2	Standard Error of Estimate	Durbin-Watson	Sum of Squares	Mean Squares	*F*	Significance
1	.132	9.56		775.521	155.104	1.699	.150†
2	.242	9.01	2.161	1426.275	237.712	2.930	.015‡

Note. † Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stressors, Time in job role. ‡ Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stressors, Time in job role, Proactive coping.

Research question 4: How prevalent is compassion satisfaction in palliative care nurses working in oncology?

Table 4 presents the mean CS score of 41.58 (*SD*= 5.08) out of a possible 50. This suggests that the average experience of CS in the sample was in the moderate range based on the ProQol manual cut off scores (Stamm, 2010). This score was close to the high range of CS scores suggesting that the sample on average were moderately high in CS. This suggests that 50% of participants who completed the survey were experiencing moderate CS (*n*=31) and 50% were experiencing high CS (*n*=31). No participants in the survey experienced low levels of CS according to the cut-off scores (Table 8). This suggests that the prevalence of CS in this sample ranged from moderate to high highlighting that staff may enjoy the role they are in and are moderate-highly satisfied in this role.

Table 8.

Cut off scores and percentage of participants in each category for compassion satisfaction.

Category	Cut-off scores	Percentage of participants scores (%)
Low	≤22	0
Moderate	23-41	50
High	≥42	50

Research question 5: What factors influence compassion satisfaction?

Data was analysed using a general linear regression model. Assumptions for the regression model were met (Appendix N). Model 1 showed a regression for CS considering the IV's: personal stressors; time in job role; overtime per week; incentives; and impact of COVID. Gender was excluded from the regression analysis due to the disproportionate split of males and females. Work setting was also excluded from the regression as it had more than two levels, however an ANOVA (Appendix O, Table 1) revealed that work setting was not a significant factor for CS (*F* (3, 58) = 1.072, *p*=.368). Model 1 was not statistically significant in predicting the variance in compassion satisfaction (R^2 = .110, *F* (5,56) = 1.387, *p*=.243) and no individual predictors were statistically significant (p >.05, (Table 9)).

Table 9.

Regression Analysis examining the association between independent variables and compassion satisfaction.

Variables	*Beta*	*SE*	*t*	*p*
Model 1				
Personal Stress	-.118	1.307	-0.090	0.928
Time in Job	-.052	0.071	-.729	0.469
Overtime per week	-4.394	0.183	1.265	0.210
Incentives for overtime	.836	1.308	0.639	0.525
Impact of COVID	-4.622	2.663	-1.735	0.088
Model 2				
Personal Stress	.472	1.175	0.402	0.689
Time in Job	-.056	0.063	-0.890	0.377
Overtime per week	-.623	2.300	-0.271	0.788
Incentives for overtime	.198	1.177	0.169	0.867
Impact of COVID	-2.908	2.412	-1.206	0.233
Proactive Coping	.452	0.115	3.941	<.001

Research question 6: Are levels of proactive coping predictive of levels of compassion satisfaction experienced by palliative care nurses (when other IVs are controlled for)?

As shown in Table 4, the average proactive coping score for the present sample was 41.68 (*SD*= 5.66) out of a possible score of 56. There are no cut-off scores for the PCI as the authors did not want to categorise individuals (Greenglass et al., 1999) therefore raw scores were used for interpretation. Levels of proactive coping were added to the regression analysis to determine whether scores are predictive of CS in the current sample. Model 1 was found to explain 11.0% of the variance for CS but this was not statistically significant (R^2 = .110, *F* (5,56) = 1.387, *p*=.243). Model 2 involving proactive coping scores was found to explain 30.6% of the variance demonstrating an increase in variance of 19.6%. The difference in model fit between Model 1 and Model 2 was found to be statistically significant (R^2 = .306, *F* (5,56) = 4.044, *p*=.002) with little autocorrelation (Durbin-Watson= 2.359) (Table 10). This suggests that Model 2 is a better fit of the data and proactive coping makes a significant contribution to explaining the experience of CS in this sample. No other variables were statistically significant (p>.05).

Table 10.

Model fit for compassion satisfaction.

Model	R^2	Standard Error of Estimate	Durbin-Watson	Sum of Squares	Mean Squares	*F*	Significance
1	.110	5.00		173.541	34.708	1.387	.243†
2	.306	4.46	2.359	482.138	80.356	4.044	.002 ‡

Note. † Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stressors, Time in job role. ‡ Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stressors, Time in job role, Proactive coping.

Discussion

The aim of this paper was to investigate compassion satisfaction and compassion fatigue in a sample of palliative care nurses who work with oncology patients. The study investigated what factors may influence levels of CF and CS in this population and aimed to investigate whether proactive coping was a contributing factor. 62 participants completed the entire survey. Contrary to the hypothesis, the results demonstrated that there was not a prevalence of high CF in this sample. Similar findings were demonstrated by Sitanggang et al. (2020) who investigated professional quality of life in a sample of hospital nurses working on palliative care wards in Indonesia. They also found that high levels of CF were not experienced, with low to moderate levels found. However, in another sample of oncology nurses, the percentage participant burnout scores varied from low (17.2%); to moderate (62.6%); to high (20.2%) as did secondary traumatic stress with percentage of scores going from 11.4% to 51.2% to 37.4% respectively (Arimon-Pagès, 2019). This sample did not combine scores of STS and burnout like in the current sample however it highlights that the current sample experienced lower CF than in Arimon-Pagès (2019) sample of oncology nurses. Arimon-Pagès (2019) study was conducted in Spain before the COVID-19 pandemic, therefore when comparing findings one must consider the contextual differences that may impact the results. A potential reason for the lack of high scores may be that those high in CF are on sick leave as burnout experienced by nurses encourages them to take leave more frequently (Kowalczuk et al., 2020). However, it may be that as CF and proactive coping were significantly negatively correlated, the levels of proactive coping may partially explain the reduced experience of high CF in this sample. The participants demonstrated both high and moderate levels of CS as was hypothesised. No participants scored low for CS suggesting that nurses in this sample had moderate to high levels of satisfaction and pleasure from their professional role. This finding is not dissimilar to other research which have found the job role as a palliative care nurse to provide high levels of CS (Sitanggang et al., 2020). Hinderer et al. (2014) found that nurses who are high in CS were lower in secondary traumatic stress, which is a contributing factor to CF. This may suggest that nurses who have high CS levels are less likely to exhibit high CF levels and may explain the low to moderate range of CF in the current study. This is supported by the significant negative correlation found between CF and CS in the current study. The cut-off scores provided have not been widely validated therefore it is not a clear guide to levels of compassion fatigue and satisfaction, but it indicates an idea of the prevalence of CF and CS within this sample of palliative care nurses (Heritage et al., 2018).

A regression analysis was conducted to see what factors may impact on CF and CS in the sample of nurses. Participants in the current study did not experience high levels of CF therefore it is important to hold in mind that the results analysed are based on low to moderate levels of CF. The results demonstrated that no work-related factors investigated other than personal stressors were significant in contributing to CF. Previous research investigating similar factors such as time in job role found alternative results whereby longer nursing experience was a significant predictor of CF (Kelly et al., 2015; Potter et al., 2013). It has also been suggested that staff pressured to work overtime due to staff shortages are at risk of CF due to reduced time to rest (Braunschneider, 2013) however, the current study found no significant influence of overtime on CF. A significant influence of personal stressors on CF was found in this sample coinciding with previous research which found high CF was associated with nurses who sacrifice personal and psychological needs to satisfy the needs of their patients. This suggests that the nurses in the current sample who experienced personal stressors may have been neglecting their own needs and stresses for the stress of their patients. It may be that there was limited emotional capacity to manage both personal and professional stress and the impact of trying to manage both simultaneously may result in the increase of CF.

The analysis demonstrated that no work-related factors investigated were associated with CS in this sample. Previous research suggested that time in job role may be a significant contributing factor to CS (Hunsaker et al., 2015; Kelly et al., 2015) with duration of experience being associated with increased CS. However, this finding was not consistent with the present study which may be a result of varying work demands and alternative ways of practice in the UK compared to the USA where the former two studies were conducted. Moreover, impacts of COVID and extreme pressures on the NHS has led to stress, overwhelm and poor wellbeing (Gemine et al., 2021) may explain such inconsistency. Hunt et al. (2019) found a negative correlation between personal stress and CS in healthcare staff suggesting that personal distress may reduce levels of CS. The current study did not support this finding. This may be because individuals completing the survey may have increased resilience from managing their own personal stressors meaning that they have an increased ability to cope, learn and grow from difficult experiences (Burnett & Wahl, 2015). This may relate to levels of proactive coping in this sample representing that staff are coping well thus only indicating low to moderate levels of CF in comparison to individuals who may be high in CF, coping less and avoidant of completing such a study.

As hypothesised, proactive coping was found to be predictive of both CF and CS explaining a statistically significant portion of the variance of each. The results suggested that considering all variables including proactive coping was the most suitable model in explaining the variance of both CF and CS with proactive coping being the significant predictor. This suggests that the use of proactive coping in the current sample may help explain the experience of CF and CS which was also found in previous research (Moore & Schellinger, 2018; Chang & Chan, 2015). The Revised Transactional Model of Stress and Coping (Goh et al., 2010) describes stress outcomes are triggered and this arousal initiates coping strategies to manage. The experience of proactive coping may reduce CF by initiating those coping strategies prior to the stress outcomes being experienced thus leading to its contribution to low-moderate CF scores.

Clinical Implications

As proactive coping has been found to influence levels of CF and CS in this sample of palliative care nurses, it suggests that training on and interventions to work on proactive coping may be helpful for staff to prevent burnout and increase satisfaction to their work. This may in turn relieve organisational pressures of absenteeism and high turnover as burnout is a significant predictor of staff turnover (Wells-English, 2019). Implementing proactive coping in staff teams may lead to reduced burnout, lower emotional exhaustion and higher personal accomplishments by building resources to serve as a buffer to stress (Chang & Chan, 2015). The findings also have implications for acknowledging personal stressors that staff may be experiencing. Staff teams may need to consider when staff have personal stressors and be mindful of this to prevent the experience of CF among their colleagues. With this, managers may need to work on creating a safe space for sharing personal stressors so that staff can be transparent in their experience of stress and CF. It is recommended that psychological safety at work should be supported by encouraging and facilitating peer support and ensuring active leadership (NICE, 2019). Some NHS trusts have set up mental health and wellbeing hubs which staff can utilise to seek mental health support for personal or professional stressors (NHS England, 2022).

This research adds to a body of research suggesting proactive coping as an active intervention strategy to prevent and reduce CF with individuals and this may inform future directions of staff teams and psychologists when considering how best to support the wellbeing of staff in healthcare services. Best practice in palliative care suggests that patients within a service should be supported by a multidisciplinary team which involves, psychology, doctors, occupational therapist, nurses, healthcare assistants and more (NICE, 2019). Staff should receive regular supervision and a means of ongoing support where they can explore their personal and professional response to loss (NICE, 2004). Psychologists within cancer teams are able to provide this supervision or set up reflective practice groups for staff nurses to develop and maintain communication skills about their own and patient needs as well as facilitating safe working environments (Payne & Hayes, 2002). This ensures facilitation of peer support within the team creation of a safe space to share their stress.

Limitations

Nurses may have been constrained by lack of time to complete the survey (Roxburgh, 2006) which may have been a barrier for completion for those who were unable to take time from their schedule. Especially if they are aware they may have to work over as a result. However, five trusts were utilised for participant recruitment as well as social media and hospices which allows for further participants to complete. There is a risk of sampling bias with the online survey method as individuals that do complete the survey may be those who feel they can manage the extra demand. Moreover, responses from individuals who are off sick from their role or may have been striking in recent months may not have been appropriately represented in the sample. This may be why individuals high in CF were not captured in the current study with individuals who are coping well and still at work self-selecting to participate and those who are stressed or off work not having the opportunity to complete such research. Moreover, no data was collected on the number of people within teams who are absent therefore there is no idea of the number of staff excluded from being able to participate. It is important to consider this when interpreting the findings about nursing staff in this sample as staff who need support with proactive coping and reducing CF may not be visible and thus miss out on sources of support. It may be useful for future research to assess CF among the whole staff team to gain a sense of who may or may not experience high levels of CF so that the risk of misguided intervention is prevented as a result of the sampling bias that may have occurred in this study (Johnson et al., 2000). The statistical design of the research was useful in enhancing power of the findings, however as the power calculation was completed with no prior research to inform and the sample size was relatively low the power of results may have been reduced. Also, the use of self-reported measures within the survey are liable to bias which may reduce the reliability of findings past the current sample.

In this study many participants were excluded on the basis of insufficient information. This is a limitation to the survey design which did not successfully make use of making all fields mandatory. The questions asked in the survey were limited in information offered other than a yes/no response of whether they experienced certain outcomes professionally (impact of COVID, incentives, overtime, personal stressors). Whilst this allowed the variables to be added to the regression analysis it did not provide further information on the relationship of such variables with CF and CS. Moreover, interpretation of the COVID question may have been experienced differently by other researchers who may interpret written responses alternatively. When considering how to do this differently, it may have been useful to provide individuals with questions such as ‘Please rate the positive impact of COVID’ and ‘Please rate the negative impact of COVID’ with the following response options ‘no impact’; ‘slight impact’; ‘moderate impact’; and ‘high impact’. Similar questions may be asked about personal stressors, with thought as to what severity personal stressors impact professional QOL and to what severity professional QOL impacts managing personal stressors.

It may have also been useful to explore further workforce or organisation factors that may impact CF and CS as research has demonstrated that work cohesion, culture of teamwork and job satisfaction (Wu et al., 2015) may also contribute to the experience of CF and CS in a nurse population. Moreover, it may be helpful to consider CS as a predictor of levels of CF as it has been suggested that increased CS relates to lower CF (Hinderer et al., 2014). Within this study, a significant negative correlation was found between CF and CS that may support this. Further research may also aim for a larger sample size taken from various parts of the UK to broaden the scope of findings and ensure they are generalisable to a wider population than the current sample.

Conclusion

In conclusion, the study found that proactive coping is a significant predictor for compassion satisfaction and compassion fatigue for this sample of palliative care nurses who work in oncology. This demonstrates that the use of proactive coping may be helpful for individuals to prevent a build-up of burnout and secondary traumatic stress when working with patients who are at end of life. One of the main ambitions for palliative and end of life care standards is that all staff are prepared to care, and that comfort and wellbeing of the patient is maximised (NHS England, 2022). The use of proactive coping impacting on compassion satisfaction may ensure that individuals working with cancer patients find pleasure in their work thus will maintain a high standard of care focussing on improving quality of life outcomes and patient experience (NHS England, 2022). The study also found that personal stressors are an important contributor to compassion fatigue which suggests that individuals who may be experiencing personal stress such as bereavement or relational difficulties may be more likely to experience compassion fatigue in the workplace. This could then lead to further personal distress and mental health difficulties like anxiety (Blum et al., 2012). Being aware that personal stressors can impact on job role is useful in being able to predict or be aware of when an individual may begin to experience compassion fatigue thus providing opportunity to intervene.

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Part Three: Appendices

Appendix A. Reflective statement

The process of writing a doctoral thesis has been hard and at times I have wondered if I will get it done. The process of work being evaluated at every stage was helpful yet daunting. The RP3 where we had to present our proposal was most difficult as I felt I received the most feedback and took this to mean I had failed. However, this provided me with a space to reflect on my progress as well as the comments made as I knew the intentions were positive and that the advice would help me grow as a researcher. Much of the process of writing this thesis has been one step forwards and two steps backwards. I think on reflection that this is the nature of the beast and good supervision has been a blessing to get through. Creating deadlines with my supervisor has been extremely useful throughout this journey to ensure I am on track with the research. Whilst this adds a layer of pressure to ensure things are completed it felt like an appropriate way to ensure the project was completed timely.

Systematic Literature Review

I spent a lot of time through the course dreading the literature review part of this thesis. When completing the clinical literature review piece of work, I reflected on the difficulty of the work, and this worried me for the eventual SLR write up I knew I would have to face. Upon starting the initial searches for the review, I experienced a feeling of stuckness whereby repeatedly searches I was interested in were not providing sufficient results or did not investigate my interest. As a result, I gave up for a while and focussed on other aspects of the research and course requirements. When I finally came back to the SLR I decided to schedule an appointment with someone at the library services and this meeting relieved so much pressure. At this point there was a feeling of such relief that I now had a starting point to move forward from and could finally see what the SLR may look like. Although the task of screening and reviewing papers was long, it felt productive, and I learnt a lot about review processes and various ideas noted in different papers. I decided to focus on individuals with breast cancer as the placement that I was on at the time of considering the SLR was in oncology. Moreover, the people utilising the therapeutic service was commonly individuals who had experienced breast cancer diagnosis and treatment. During this time working with such individuals, much of the work focussed on building self-compassion and providing a space for safe emotional expression of their experience. When researching psychological interventions for breast cancer I was surprised that research was limited. From my experience I decided to investigate the roles of self-compassion and emotional expression in the hopes of highlighting the usefulness of involving these in psychological interventions for individuals with breast cancer. Seeing the roles in the diagram I created felt positive when completing the results write-up as it felt like an important contribution to the literature and to clinicians who may support people with breast cancer.

Empirical paper

My first experience of cancer was when I was 14 years old, and my great grandad became ill with cancer. This was a huge moment in my life where all my family came together and took care of him at home as he wanted. Though this was a difficult time, I was in awe of the nursing staff that came day in day out and supported my grandad as well as all my family. His time towards the end of his life was treated with respect and dignity and this is all as a family we could have asked for. Upon starting the Clinical Psychology Doctorate, I began to think about the impacts of such a role on an individual and how difficult it must be. When we began learning about compassion, the role of compassion to others; from others and to the self it made me question how individuals in such difficult roles are able to show that compassion so frequently like our family received. The role of coping also fascinates me as I have become increasingly aware whilst on the doctorate that I may not cope well. I have recognised over the years studying that my style of coping is emotion focussed and this leads me to burnout quickly. When I came across proactive coping it filled me with a sense of hope that coping does not have to be a reaction to stress but possibly a prevention.

The process of ethical approval and Health Research Authority approval proved a lot longer than expected. Although staff on the course repeatedly tell you this, it still felt surprising at how tiresome it felt. Often it felt disappointing when things would come back with further corrections and the idea of beginning recruitment kept moving further away. However, I used the thesis diary to reflect on and process these difficult times so that now I am able to look back and see how I overcame each obstacle and now have a completed thesis I can be proud of. Recruitment increased steadily over the months which felt exciting knowing that people were contributing to the research. Some people that completed the research were not able to be included in the analysis due to not being a nurse therefore a screening question may have been useful. On reflection I feel saddened that I could not capture their experience as well however, this research's focus was solely on nurse experience due to their close relationships with patients and carers. Experiences of the wider team may be important to consider in future research to investigate whole team experience of compassion fatigue rather than one specific role. The analysis of data and write-up was interesting to see what the research had found. It also allowed me to reflect on the questions asked within the survey and think about how this could have been done differently to gain a clearer perspective. I felt particularly motivated for this part of the write-up due to knowing that individuals had taken time out of their days to complete the study therefore it was important to give my time to understanding what this means.

Summary

Although writing a doctoral thesis has been extremely difficult, and has tested me in many ways, I am thoroughly proud of the position I am in today and am grateful for the experience of developing my research skills with such a project.

Appendix B. Epistemological statement

Reflection on the ontological and epistemological position a researcher takes is important as this influences the choice of research design they may utilise in their investigations (Tomlinson, 2023).

Ontology is the study of ‘being’ and is concerned with ‘what is’ (Al-Saadi, 2014), it can also be defined as the assumption of what entities and processes are real (Tomlinson, 2023). Two opposing ends of ontology are constructionism and objectivism (Bryman, 2004) with the former arguing that reality is subjective and socially constructed by its participants (Tuli, 2011); and the latter arguing that social entities adhere to external objective reality that is independent of the researcher’s awareness (Dieronitou, 2014). Guba (1990) explains that critical realism sits between these two oppositions, which means that the science progresses towards the truth but acknowledges the relation between relativity of knowledge and rationality of judgment (Albert et al., 2020). This stance is critical of the researcher’s ability to know reality with any certainty and that any findings may be fallible to error (Trochim & Donnelly, 2001).

Epistemology is the theory of knowledge that informs the research (Tuli, 2011) and the assumptions that we make about the kind or nature of knowledge (Richards, 2003). The ontological position of the researcher guides their view on knowledge formation thus influencing the epistemological stance they take. Two positions commonly taken with research are constructivism and positivism. Positivism is often rooted in a realist ontology (Dieronitou, 2014, which sees social science as an organised method for combining deductive logic with precise empirical observations to discover and confirm causal laws that can predict patterns of activity (Neuman & Kreuger, 2003). Positivism focusses on the importance of objectivity and evidence in searching for the truth which is unaffected by the researcher (Al-Saadi, 2014) therefore research with this epistemology tends to utilise quantitative methods with a goal of developing objective methods to get to the closest approximation of reality (Tuli, 2011). Post-positivism rejects the idea that a researcher can be an independent observer of the social world, arguing that ideas and identity of a researcher can influence what they observe thus impacts on what they conclude (E-Internal Relations, 2021). This approach may be understood as a critique to positivist epistemology and ontology because positivism removes subjectivity from knowledge growth which removes any role for reflexivity for the researcher (Fox, 2008). Post-positivism assumes a learning role rather than a testing one, regarding research as conducted among others learning with them rather than conducting research on them (Ryan, 2006). A key element to post-positivism involves understanding rather than causality (Fox, 2008).

Researchers with the epistemological position of constructivism would argue that reality is subjective and socially constructed by its participants (Tuli, 2011) with a qualitative research focus on interpretations and perceptions (Al-Saadi, 2014). Like a qualitative researcher, constructivists assert that reality is subjective because it is from individual perspectives and the researcher takes meaning of perspectives through the interaction with others in social and cultural contexts (Adom et al., 2016). Research grounded in constructivism often begins with open-ended enquiry to discover novel or unanticipated findings (Bryman, 2004).

Upon reflecting on my own ontological and epistemological perspectives I found that critical realism made sense to the study I was investigating. I reflected that with this stance I was able to measure proactive coping against measures of compassion fatigue and satisfaction but was also acknowledging that I may not have completely measured what I intended. Moreover, I adopted this stance within my research as methodologically it allows for a degree of empathy and reflexivity about the processes for participants by which constructs are generated (Fox, 2008) and this felt important as a trainee psychologist to acknowledge.

The research questions in my empirical paper aimed to investigate the relation between proactive coping and compassion fatigue and satisfaction and the potential predictors within this. This utilised a quantitative approach so that replication using the measures would be possible for other populations given that nursing and healthcare differs among culture and geography. Findings from the measures were not taken as absolute conclusions and the discussion involved reflexivity in its approach to commenting on the outcome of the results thus the approach to the paper was consistent with the ontological and epistemological perspectives that fit my experiences.

The systematic literature review was also consistent with my perspectives in ontology and epistemology as it valued both quantitative and qualitative papers aligning with the critical realist stance (McEvoy & Richards, 2006). Moreover, the use of a narrative synthesis allows for qualitative exploration of interpretations and perceptions (Al-Saadi, 2014) even when discussing quantitative papers.

To conclude, this research was based on a critical realist ontological perspective and a post-positivist epistemology, being aware that the researcher was unable to be always completely objective for both the empirical and the systematic literature review with constant reflection needed to consider what is being uncovered and what may be subject to error or bias.

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Appendix C. Guideline for authors for the systematic literature review and empirical paper

BJP AUTHOR GUIDELINES

Sections

1. Submission
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4. Preparing the Submission
5. Editorial Policies and Ethical Considerations
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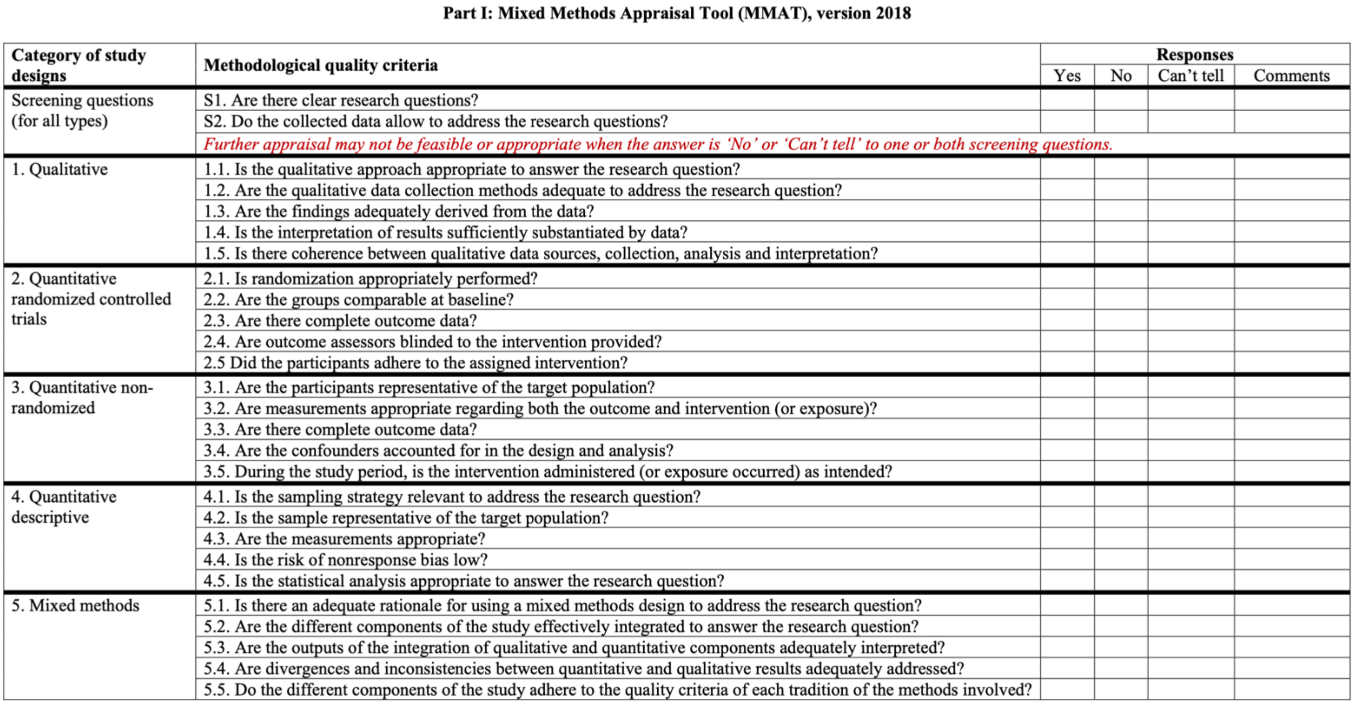
Appendix D. Quality checklist

Table D1.

Mixed Methods Appraisal Tool used to assess quality in the Systematic Literature Review.

Paper	**Question 1: Are there clear research questions?**	**Question 2: Do the collected data allow to address the research questions?**	**Category of study design:** **1- Qualitative** **2- Quantitative Randomized Control Trial** **3- Quantitative** **4- Quantitative Descriptive** **5- Mixed Methods**				
Alizadeh et al. (2018)	Yes	Yes	4.1- Yes	4.2- Yes	4.3- Yes	4.4- Yes	4.5- Yes
Arambasic et al. (2019)	Yes	Yes	4.1- Yes	4.2- Yes	4.3- Yes	4.4- No	4.5- Yes
Brown et al. (2020)	Yes	Yes	4.1- Yes	4.2- Yes	4.3- Yes	4.4- No	4.5- Yes
Craft et al. (2013)	Yes	Yes	2.1- Yes	2.2- Yes	2.3- No	2.4- Can't tell	2.5- Yes
Forti et al. (2016)	Yes	Yes	4.1- Yes	4.2- Yes	4.3- Yes	4.4- No	4.5- Yes
Gonzalez-Hernandez et al. (2018)	Yes	Yes	2.1- Yes	2.2- Yes	2.3- No	2.4- Yes	2.5- No
Nakatani et al. (2014)	Yes	Yes	5.1- Yes	5.2 Yes	5.3- Yes	5.4- Can't tell	5.5- Yes

Stanton et al. (2000)	Yes	Yes	4.1- Yes	4.2- Yes	4.3- Yes	4.4- Yes	4.5- Yes
Thomas et al. (2017)	Yes	Yes	1.1- Yes	1.2- Yes	1.3- Yes	1.4- Yes	1.5- Yes
Tsai & Lu (2018)	Yes	Yes	4.1- Yes	4.2- No	4.3- Yes	4.4- No	4.5- Yes
Wang et al. (2018)	Yes	Yes	4.1- Yes	4.2- Yes	4.3- Yes	4.4- No	4.5- Yes



Part I: Mixed Methods Appraisal Tool (MMAT), version 2018

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?				
	S2. Do the collected data allow to address the research questions?				
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non-randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Appendix E. Data extraction form

Table E1.
Data extraction form used in the Systematic Literature Review.

Author(s)	
Title of study and year of publication	
Research aims	
Target population	
Participants (age)	
Participants (gender)	
Sample size	
Research design methodology	
Methodological quality (as assessed by checklist)	
Theoretical model specified	
Intervention used	
Outcome measures	
Statistical analysis	
Main findings	
Conclusions	

Appendix F. Ethical and Health Research Authority approval

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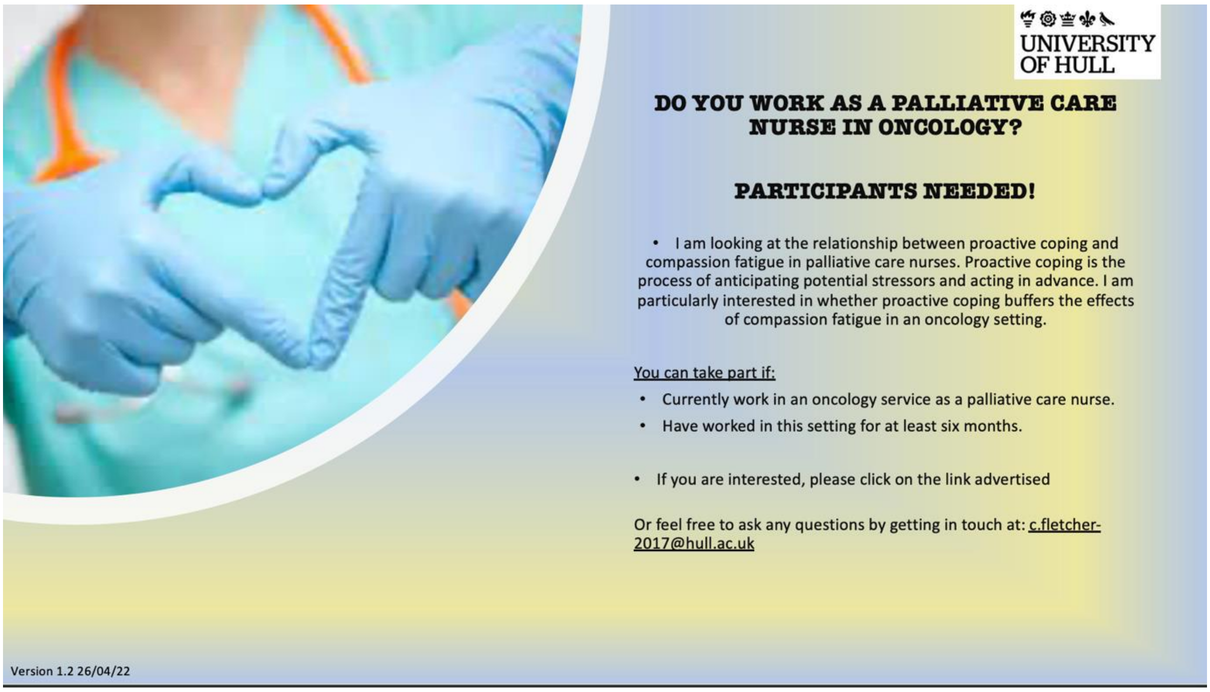
Appendix G. Advertisement for recruitment



UNIVERSITY OF HULL

DO YOU WORK AS A PALLIATIVE CARE NURSE IN ONCOLOGY?

PARTICIPANTS NEEDED!

- I am looking at the relationship between proactive coping and compassion fatigue in palliative care nurses. Proactive coping is the process of anticipating potential stressors and acting in advance. I am particularly interested in whether proactive coping buffers the effects of compassion fatigue in an oncology setting.

You can take part if:

- Currently work in an oncology service as a palliative care nurse.
- Have worked in this setting for at least six months.

- If you are interested, please click on the link advertised

Or feel free to ask any questions by getting in touch at: c.fletcher-2017@hull.ac.uk

Version 1.2 26/04/22

Appendix H. Participant information sheet

Title of Study: Relationship between Proactive Coping and Compassion Fatigue in Palliative Care Nurses working in Oncology.

I would like to invite you to participate in a research project which forms part of my Doctorate in Clinical Psychology. Please take the time to read the following information carefully before deciding to take part in this research because it is important for you to understand why the research is being done and what your participation involves. Please contact me before, during or after completing the survey if there is anything which you are not clear on or if you would like more information. This research study is sponsored by the University of Hull.

What is the purpose of the study?

This study will look at the use of proactive coping in professionals working in palliative care oncology and whether this lowers levels of compassion fatigue. Proactive coping is a strategy implemented by individuals which includes building and strengthening all resources and gaining skills to assess the changing environment more accurately so that stress can be recognised and hopefully avoided/ minimised (Blum, Brow & Silver, 2012). Past research has looked into experiences of compassion fatigue in palliative care nurses and found that rates are high. The current research will consider what factors may affect the development of compassion fatigue and whether proactive coping is one of these.

Why have I been invited to take part?

You are being invited to take part because you are a professional currently working in a palliative care team working with end-of-life cancer patients. Unfortunately, those who are not working in the role currently or those who have been working in their job role for less than 6 months will not be able to take part.

What will happen if I take part?

If you agree to take part, you will continue through this link. The survey should take 10-15 minutes to complete and would preferably be completed in one sitting. All data submitted is anonymous and kept confidential on an encrypted NHS laptop.

Do I have to take part?

Participation is voluntary. You should only take part if you want to and choosing not to will not disadvantage you in any way. Once you have read this information sheet you are able to contact me with any questions that will help you decide about taking part if you are unsure. You are also able to leave the page and think about your decision to take part and come back later. If you decide to take part, you should press next and move to the next page. On the next page you will find the consent form which you should read and complete. Once you have you can press next again. Once you click next from the consent form you have given consent to take part in the survey.

What are the possible risks of taking part?

Participating in the study will require 10-15 minutes of your time and this may be an inconvenience for you. Find a time which is best for you to complete if you decide to participate. Some people may experience emotional distress when completing the surveys about compassion fatigue and their professional quality of life. At the end of the survey there is information regarding support you can access if you feel it is required. This includes GP access, psychology within your team, occupational health within the NHS and MIND charity for mental health difficulties.

What are the possible benefits of taking part?

It is hoped that your participation in this study will provide information that can help understand more about the factors affecting compassion fatigue and whether there is a relationship between compassion fatigue and proactive coping. It is hoped that this information can help provide insight into how best to support professionals in palliative care teams.

Data handling and confidentiality

Your data will be processed in accordance with General Data Protection Regulation 2018 (GDPR). No identifiable personal information is collected from you. The questionnaire includes collecting information about your length in profession, current work setting, impact of COVID, contracted hours, personal stressors, Professional Quality of Life, and Proactive Coping scale.

Data protection statement

Your data will be processed in accordance with the General Data Protection Regulation 2016 (GDPR).

The data controller for this project will be the University of Hull. The University will process your personal data for the purpose of the research outlined above. The legal basis for the processing your data for research purposes under GDPR is a ‘task in the public interest’. You can provide your consent for the use of your personal data in this study by completing the consent form that has been provided to you at the beginning of the online survey.

We will need to use information from you for this research project. The information will not include personal information such as your name or contact details, your data will have a code number instead. We will keep all information about you safe and secure. People will use the information to do the research. Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out that you took part in the study.

To protect the security of the data it will be stored on an encrypted laptop in a secure bag or on secure drives at the University of Hull. After the research is completed, all the raw data will be destroyed. Analysed data will be stored on an on-line storage repository at the University of Hull for a period of ten years.

You can stop being part of the study at any time, without giving a reason. You are able to withdraw your data from the study up until you submit your survey, after which withdrawal of your data will no longer be possible as the data will have been anonymised. If you choose to withdraw from the study before this point the data collected will be destroyed. Information collected from this study will be used for this study only and will not be used for any other purpose.

You can find out more about how we use your information at https://www.hull.ac.uk/choose-hull/university-and-region/key-documents/data-protection.aspx or by emailing University of Hull Information Compliance Manager (dataprotection@hull.ac.uk)**.** If you wish to lodge a complaint with the Information Commissioner’s Office, please visit www.ico.org.uk.

What if I change my mind about taking part?

You are free to withdraw without having to give a reason. Withdrawing from the study will not affect you in any way. You can withdraw your data from the study up until you submit your survey, at that point that data will be anonymised and will become part of a larger data set. You will be unable to withdraw at this point.

What will happen to the results of the study?

The results of the study will be summarised in a written thesis as part of a Doctorate in Clinical Psychology. The thesis will be available on the University of Hull's online repository https://hydra.hull.ac.uk/. The research may also be published in academic journals or presented at conferences.

Who has reviewed this study?

Research studies are reviewed by an independent group of people, called a research ethics committee, who protect the interests of people who participate in research. This study has been reviewed and has been given a favourable opinion by the Faculty of Health Sciences Ethics Committee at the University of Hull. The project has also received the required Health Research Authority (HRA) approval for NHS staff research.

Who should I contact for further information?

If you have any questions or require more information about this study, please contact me using the following contact details:

Chloe Fletcher
Clinical Psychology
Aire Building
The University of Hull
Cottingham Road
Hull
HU6 7RX
Email: c.fletcher-2017@hull.ac.uk

What if I have further questions, or if something goes wrong?

If you wish to make a complaint about the conduct of the study, you can contact the University of Hull using the research supervisor's details below for further advice and information:

Dr Emma Lewis
Clinical Psychology
Aire Building
The University of Hull
Cottingham Road
Hull
HU6 7RX
Tel: 01482464617
Email: e.lewis@hull.ac.uk

Or you can contact the Clinical Psychology Programme Director

Dr Nick Hutchinson
Clinical Psychology
Aire Building
The University of Hull
Cottingham Road
Hull

HU6 7RX
Email: n.hutchinson@hull.ac.uk

Thank you for reading this information sheet and for considering taking part in this research.

Appendix I. Consent form

Title of study: **The relationship between proactive coping and compassion fatigue in palliative care nurses working in oncology services.**

Name of Researcher: Chloe Fletcher

Name of Supervisor: Dr Emma Lewis

Please tick box

1. I confirm that I have read the information sheet dated 09/05/22 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I give permission for the collection and use of my data to answer the research question in this study. ☐
3. I understand that my participation is voluntary and that I am free to withdraw without giving any reason, without my legal rights being affected until I submit the survey. ☐
4. I understand that when I have completed the questionnaire and submitted it, I will no longer be able to w ☐ from the study as this data will be anonymised.
5. I understand that anonymized data may be used to present at conference, submit as part of a published pa ☐ submitted as part of programme assessment.
6. I agree to take part in the above study. ☐

Appendix J. Measures

Demographics
Please answer the following questions.

1. What gender do you identify as?
2. What is your job title?
3. How long have you worked in palliative care- oncology? (In years and months)
4. What service do you work in? (Acute, community, other, both. If other please specify)
5. What are your contracted hours per week?
6. If you go over these hours how many hours do you work over per week on average?
7. Are you incentivised for the extra hours? (eg. time off elsewhere, double pay, time and a half).
8. In the last month have you experienced personal stressors (such as bereavement, relationship breakdown, illness/family illness)?
9. If you answered yes, how has this impacted your ability to work?
10. In what ways has COVID impacted your job role?

Proactive Coping scale (Greenglass et al., 1999)
For the next set of questions please rate each statement using the following scale
NOT AT ALL TRUE=1, BARELY TRUE=2, SOMEWHAT TRUE=3, COMPLETELY TRUE=4.

1. I am a “take charge” person.
2. *I try to let things work out on their own.
3. After attaining a goal, I look for another, more challenging one.
4. I like challenges and beating the odds.
5. I visualise my dreams and try to achieve them.
6. Despite numerous setbacks, I usually succeed in getting what I want.
7. I try to pinpoint what I need to succeed.
8. I always try to find a way to work around obstacles; nothing really stops me.
9. *I often see myself failing so don’t get my hopes up too high.
10. When I apply for a position, I imagine myself filling it.
11. I turn obstacles into positive experiences.
12. If someone tells me I can’t do something, you can be sure I will do it.
13. When I experience a problem, I take the initiative in resolving it.
14. *When I have a problem, I usually see myself in a no-win situation.

Professional Quality of Life Scale (Stamm, 2009)
For the next set of questions please rate each statement using the following rating scale
NEVER=1, RARELY=2, SOMETIMES=3, OFTEN=4, VERY OFTEN=5.

When you help people you have direct contact with their lives. As you may have found, your compassion for those you help can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a helper. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things ***in the last 30 days*.**

1. *I am happy.
2. I am preoccupied with more than one person I help.
3. I get satisfaction from being able to help people.
4. *I feel connected to others.
5. I jump or am startled by unexpected sounds.
6. I feel invigorated after working with those I help.
7. I find it difficult to separate my personal life from my life as a helper.
8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I help.
9. I think that I might have been affected by the traumatic stress of those I help.
10. I feel trapped by my job as a helper.
11. Because of my helping, I have felt “on edge” about various things.
12. I like my work as a helper.
13. I feel depressed because of the traumatic experiences of the people I help.
14. I feel as though I am experiencing the trauma of someone I have helped.
15. *I have beliefs that sustain me.
16. I am pleased with how I am able to keep up with helping techniques and protocols.
17. *I am the person I always wanted to be.
18. My work makes me feel satisfied.
19. I feel worn out because of my work as a helper.
20. I have happy thoughts and feelings about those I help and how I could help them.
21. I feel overwhelmed because my case load seems endless.
22. I believe I can make a difference through my work.
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I help.
24. I am proud of what I can do to help.
25. As a result of my helping I have intrusive frightening thoughts.
26. I feel “bogged down” by the system.
27. I have thoughts that I am a “success” as a helper.
28. I can’t recall important parts of my work with trauma victims.
29. *I am a very caring person.
30. I am happy that I chose to do this work.

Appendix K. Debrief form

Thank you for taking part in the study

The results of the study will be summarised in a written thesis as part of a Doctorate in Clinical Psychology. The thesis will be available on the University of Hull's online repository https://hydra.hull.ac.uk/ The research may also be published in academic journals or presented at conferences.

If you have any questions or require more information about this study, please contact me using the following contact details:

Chloe Fletcher
Clinical Psychology
Aire Building
The University of Hull
Cottingham Road
Hull
HU6 7RX
Email: c.fletcher-2017@hull.ac.uk

If you feel that you need support after completing this survey, please utilise the following methods of support:

Have a chat with your line manager/ supervisor as they can listen and help you access appropriate support from within the service.

Occupational health services offer information and support to promote and maintain the physical and psychological health and wellbeing of employees in the workplace.

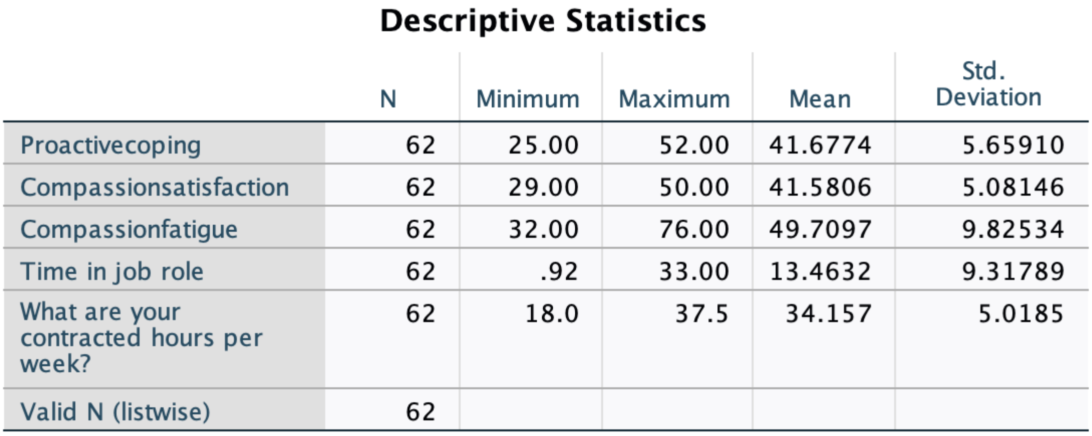
Speak to your GP who can advise and help you manage physical and psychological health concerns.

MIND can provide advice and support to empower individuals with mental health concerns. To find out how to contact your local MIND charity please follow this link:
https://www.mind.org.uk

Appendix L. Descriptive statistics and correlations

Table L1.

Descriptive statistics for relevant variables in the analysis.

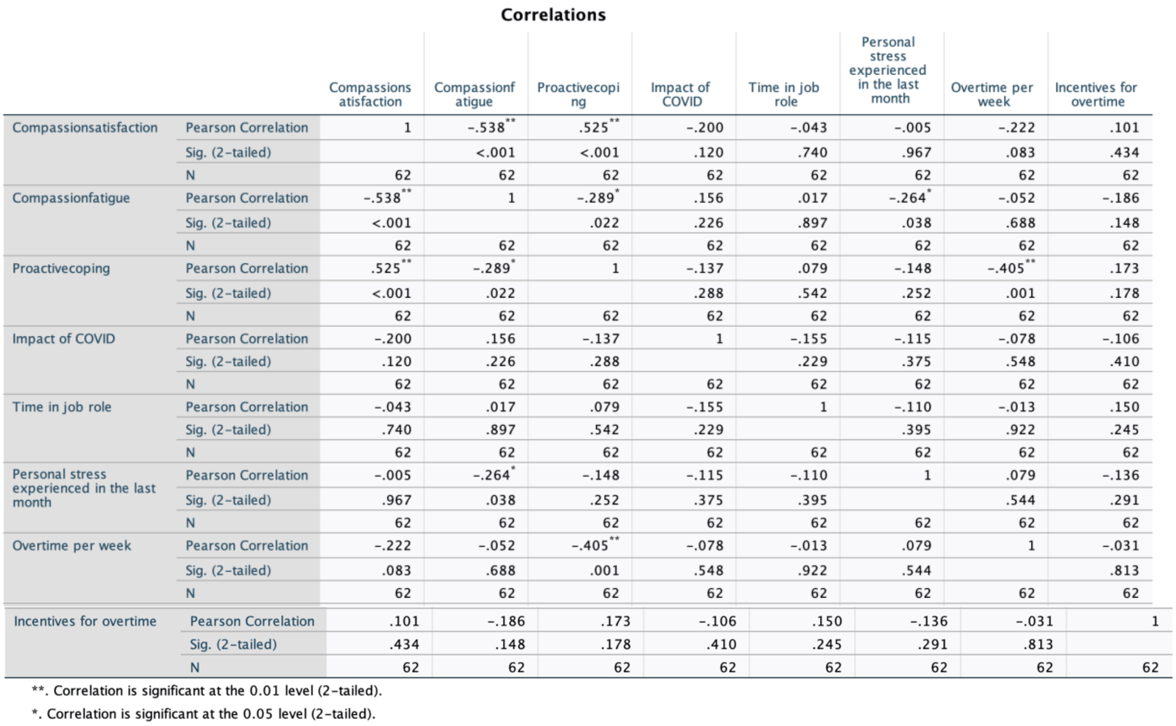


Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Proactivecoping	62	25.00	52.00	41.6774	5.65910
Compassionsatisfaction	62	29.00	50.00	41.5806	5.08146
Compassionfatigue	62	32.00	76.00	49.7097	9.82534
Time in job role	62	.92	33.00	13.4632	9.31789
What are your contracted hours per week?	62	18.0	37.5	34.157	5.0185
Valid N (listwise)	62				

Table L2.

Correlations of each variable in the analysis.



Correlations

		Compassionsatisfaction	Compassionfatigue	Proactivecoping	Impact of COVID	Time in job role	Personal stress experienced in the last month	Overtime per week	Incentives for overtime
Compassionsatisfaction	Pearson Correlation	1	-.538**	.525**	-.200	-.043	-.005	-.222	.101
	Sig. (2-tailed)		<.001	<.001	.120	.740	.967	.083	.434
	N	62	62	62	62	62	62	62	62
Compassionfatigue	Pearson Correlation	-.538**	1	-.289*	.156	.017	-.264*	-.052	-.186
	Sig. (2-tailed)	<.001		.022	.226	.897	.038	.688	.148
	N	62	62	62	62	62	62	62	62
Proactivecoping	Pearson Correlation	.525**	-.289*	1	-.137	.079	-.148	-.405**	.173
	Sig. (2-tailed)	<.001	.022		.288	.542	.252	.001	.178
	N	62	62	62	62	62	62	62	62
Impact of COVID	Pearson Correlation	-.200	.156	-.137	1	-.155	-.115	-.078	-.106
	Sig. (2-tailed)	.120	.226	.288		.229	.375	.548	.410
	N	62	62	62	62	62	62	62	62
Time in job role	Pearson Correlation	-.043	.017	.079	-.155	1	-.110	-.013	.150
	Sig. (2-tailed)	.740	.897	.542	.229		.395	.922	.245
	N	62	62	62	62	62	62	62	62
Personal stress experienced in the last month	Pearson Correlation	-.005	-.264*	-.148	-.115	-.110	1	.079	-.136
	Sig. (2-tailed)	.967	.038	.252	.375	.395		.544	.291
	N	62	62	62	62	62	62	62	62
Overtime per week	Pearson Correlation	-.222	-.052	-.405**	-.078	-.013	.079	1	-.031
	Sig. (2-tailed)	.083	.688	.001	.548	.922	.544		.813
	N	62	62	62	62	62	62	62	62
Incentives for overtime	Pearson Correlation	.101	-.186	.173	-.106	.150	-.136	-.031	1
	Sig. (2-tailed)	.434	.148	.178	.410	.245	.291	.813	
	N	62	62	62	62	62	62	62	62

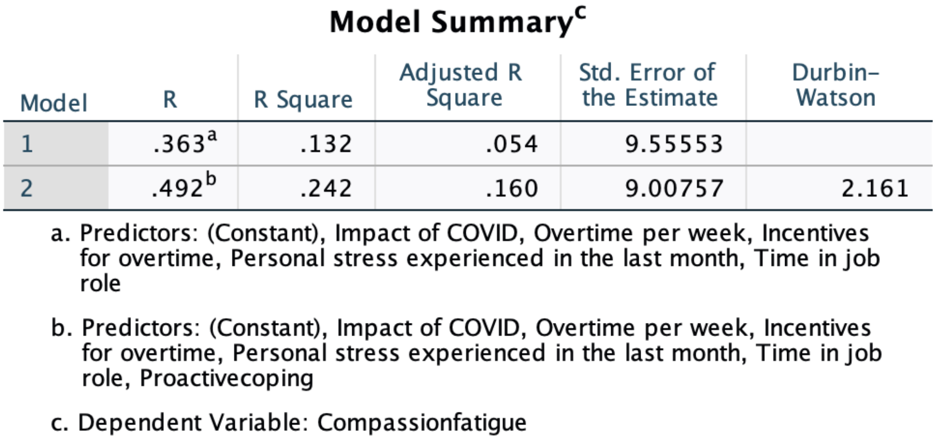
**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix M: SPSS Output for Compassion Fatigue

Table M1 & M2.

Model summary comparing the predictors used in the analysis with Durbin-Watson score along with the Analysis of Variance to assess the fit of the model.



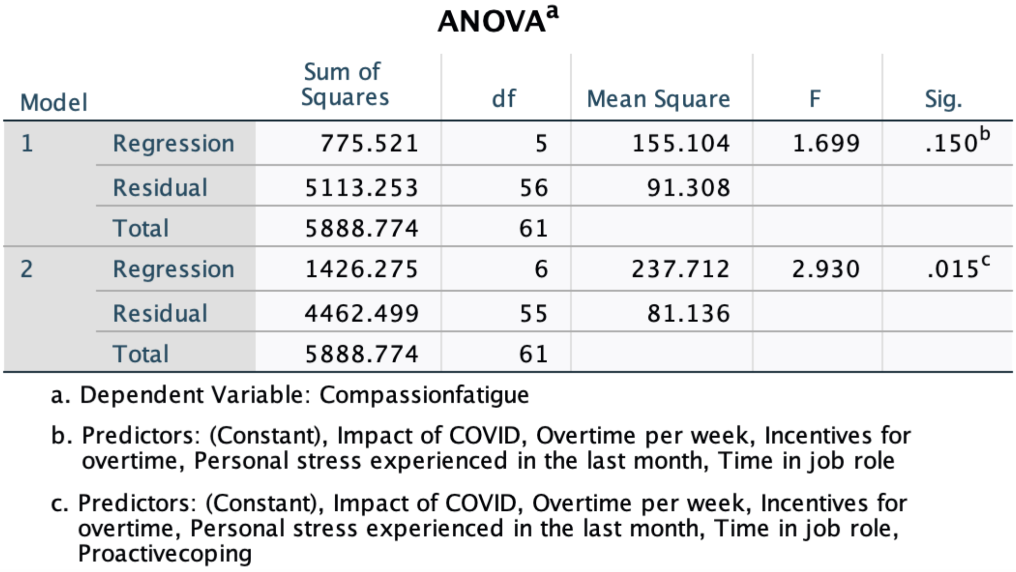
Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.363[a]	.132	.054	9.55553	
2	.492[b]	.242	.160	9.00757	2.161

a. Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stress experienced in the last month, Time in job role

b. Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stress experienced in the last month, Time in job role, Proactivecoping

c. Dependent Variable: Compassionfatigue



ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	775.521	5	155.104	1.699	.150[b]
	Residual	5113.253	56	91.308		
	Total	5888.774	61			
2	Regression	1426.275	6	237.712	2.930	.015[c]
	Residual	4462.499	55	81.136		
	Total	5888.774	61			

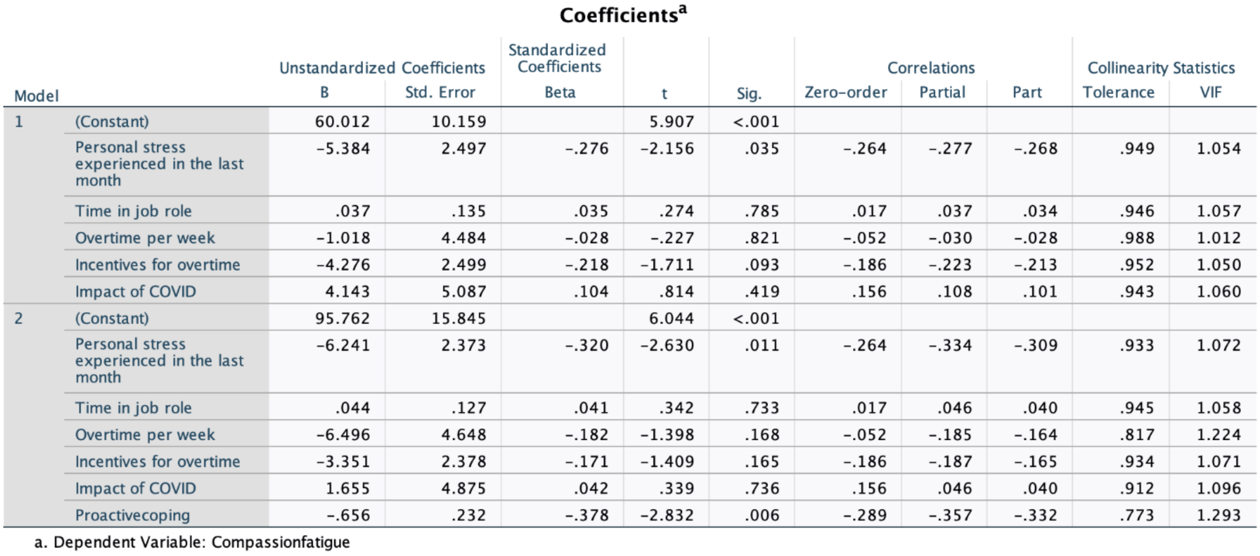
a. Dependent Variable: Compassionfatigue

b. Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stress experienced in the last month, Time in job role

c. Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stress experienced in the last month, Time in job role, Proactivecoping

Table M3.

Individual contribution of each predictor variable.



Coefficients^{a}

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	60.012	10.159		5.907	<.001					
	Personal stress experienced in the last month	-5.384	2.497	-.276	-2.156	.035	-.264	-.277	-.268	.949	1.054
	Time in job role	.037	.135	.035	.274	.785	.017	.037	.034	.946	1.057
	Overtime per week	-1.018	4.484	-.028	-.227	.821	-.052	-.030	-.028	.988	1.012
	Incentives for overtime	-4.276	2.499	-.218	-1.711	.093	-.186	-.223	-.213	.952	1.050
	Impact of COVID	4.143	5.087	.104	.814	.419	.156	.108	.101	.943	1.060
2	(Constant)	95.762	15.845		6.044	<.001					
	Personal stress experienced in the last month	-6.241	2.373	-.320	-2.630	.011	-.264	-.334	-.309	.933	1.072
	Time in job role	.044	.127	.041	.342	.733	.017	.046	.040	.945	1.058
	Overtime per week	-6.496	4.648	-.182	-1.398	.168	-.052	-.185	-.164	.817	1.224
	Incentives for overtime	-3.351	2.378	-.171	-1.409	.165	-.186	-.187	-.165	.934	1.071
	Impact of COVID	1.655	4.875	.042	.339	.736	.156	.046	.040	.912	1.096
	Proactivecoping	-.656	.232	-.378	-2.832	.006	-.289	-.357	-.332	.773	1.293

a. Dependent Variable: Compassionfatigue

Figure M1.

Histogram demonstrating normality of data.

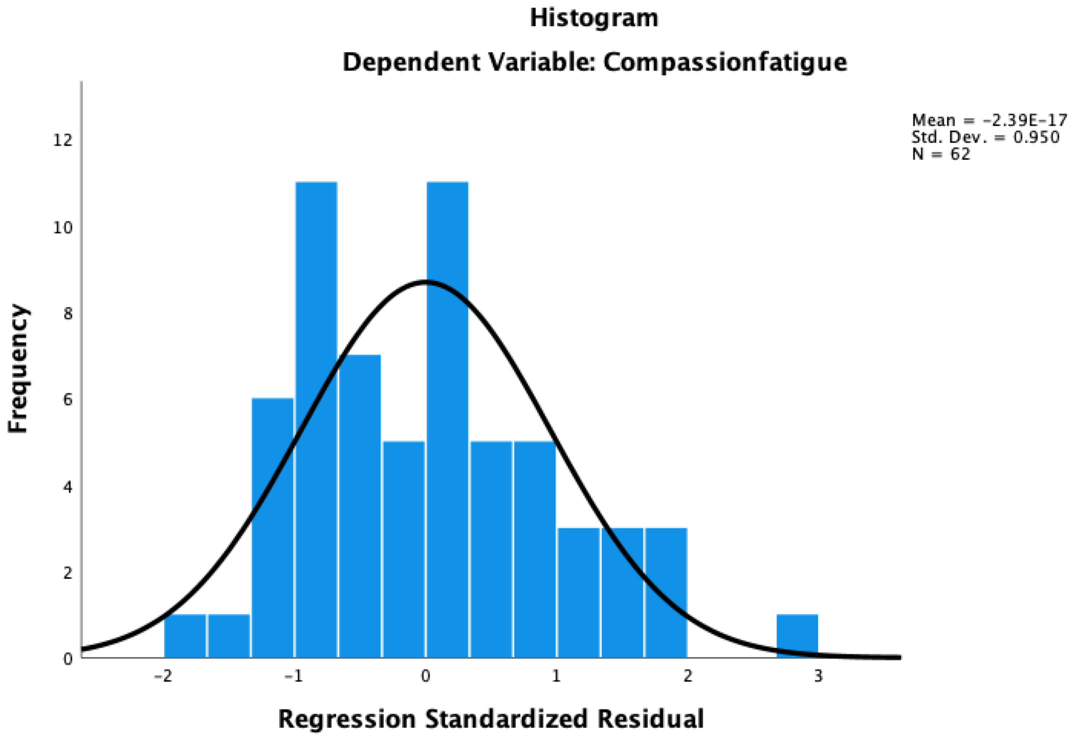


Figure M2.

Line graph depicting linearity of data assumption is met.

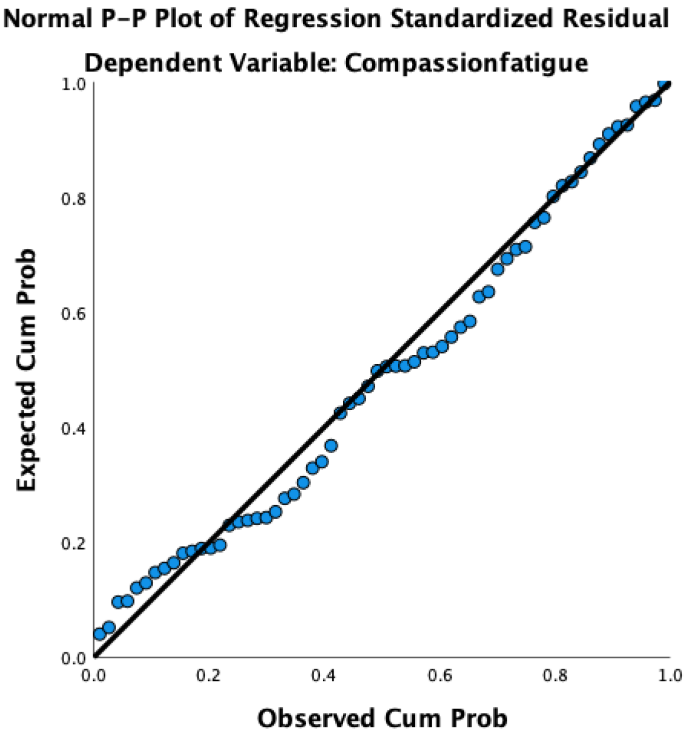
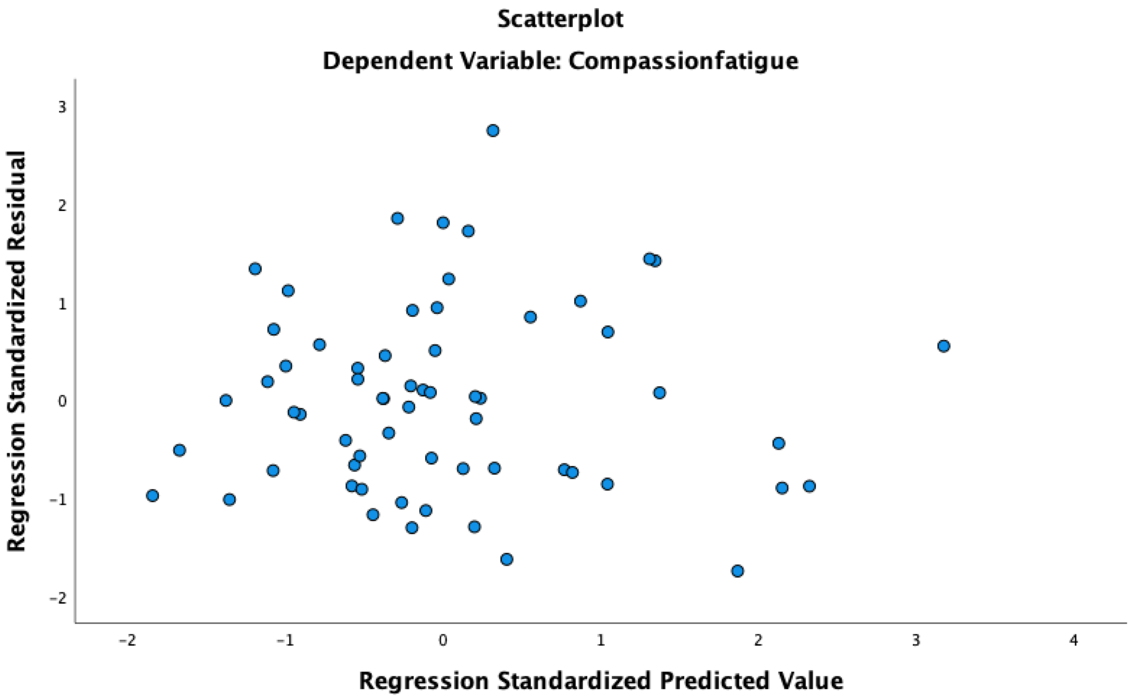


Figure M3.

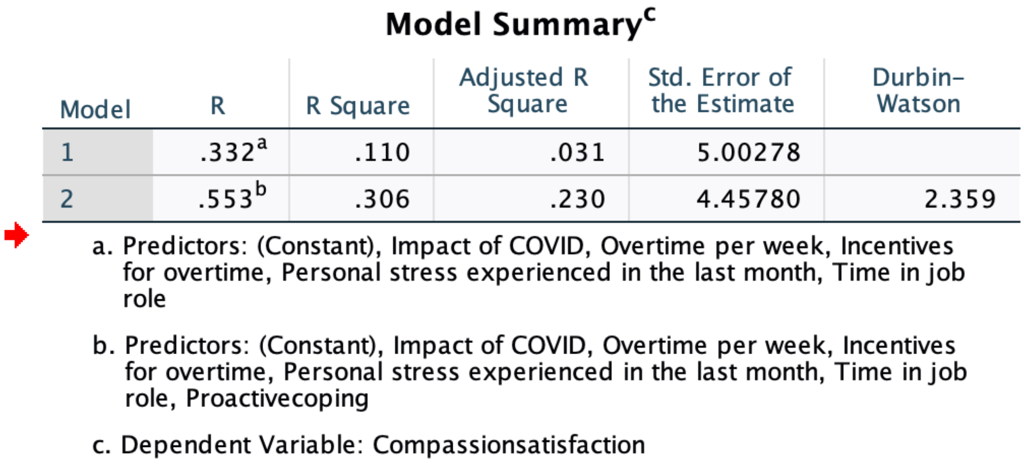
Scatterplot showing homoscedasticity of data.



Appendix N. SPSS output for compassion satisfaction

Table N1 & N2.

Model summary comparing the predictors used in the analysis with Durbin-Watson score along with the Analysis of Variance to assess the fit of the model.



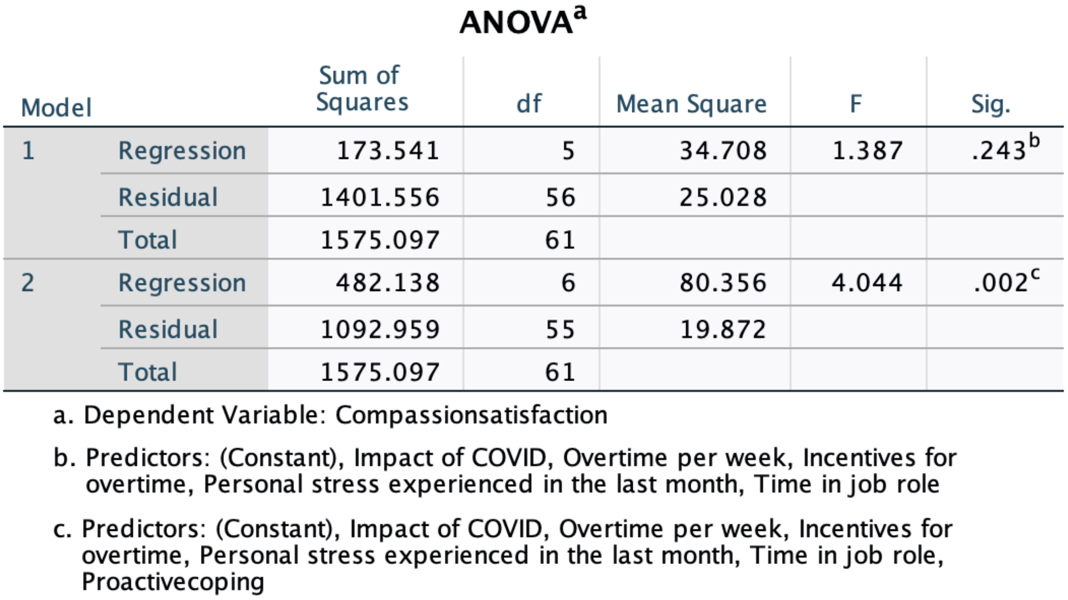
Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.332[a]	.110	.031	5.00278	
2	.553[b]	.306	.230	4.45780	2.359

a. Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stress experienced in the last month, Time in job role

b. Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stress experienced in the last month, Time in job role, Proactivecoping

c. Dependent Variable: Compassionsatisfaction



ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	173.541	5	34.708	1.387	.243[b]
	Residual	1401.556	56	25.028		
	Total	1575.097	61			
2	Regression	482.138	6	80.356	4.044	.002[c]
	Residual	1092.959	55	19.872		
	Total	1575.097	61			

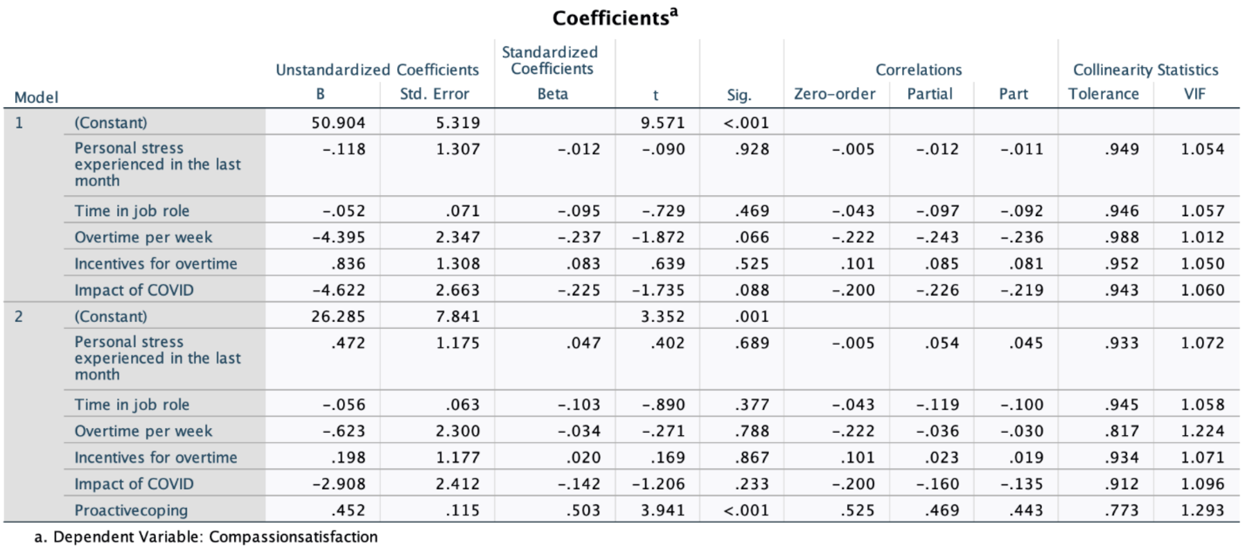
a. Dependent Variable: Compassionsatisfaction

b. Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stress experienced in the last month, Time in job role

c. Predictors: (Constant), Impact of COVID, Overtime per week, Incentives for overtime, Personal stress experienced in the last month, Time in job role, Proactivecoping

Table N3.

Individual contribution of each predictor variable.



Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	50.904	5.319		9.571	<.001					
	Personal stress experienced in the last month	-.118	1.307	-.012	-.090	.928	-.005	-.012	-.011	.949	1.054
	Time in job role	-.052	.071	-.095	-.729	.469	-.043	-.097	-.092	.946	1.057
	Overtime per week	-4.395	2.347	-.237	-1.872	.066	-.222	-.243	-.236	.988	1.012
	Incentives for overtime	.836	1.308	.083	.639	.525	.101	.085	.081	.952	1.050
	Impact of COVID	-4.622	2.663	-.225	-1.735	.088	-.200	-.226	-.219	.943	1.060
2	(Constant)	26.285	7.841		3.352	.001					
	Personal stress experienced in the last month	.472	1.175	.047	.402	.689	-.005	.054	.045	.933	1.072
	Time in job role	-.056	.063	-.103	-.890	.377	-.043	-.119	-.100	.945	1.058
	Overtime per week	-.623	2.300	-.034	-.271	.788	-.222	-.036	-.030	.817	1.224
	Incentives for overtime	.198	1.177	.020	.169	.867	.101	.023	.019	.934	1.071
	Impact of COVID	-2.908	2.412	-.142	-1.206	.233	-.200	-.160	-.135	.912	1.096
	Proactivecoping	.452	.115	.503	3.941	<.001	.525	.469	.443	.773	1.293

a. Dependent Variable: Compassionsatisfaction

Figure N1.

Histogram demonstrating normality of data.

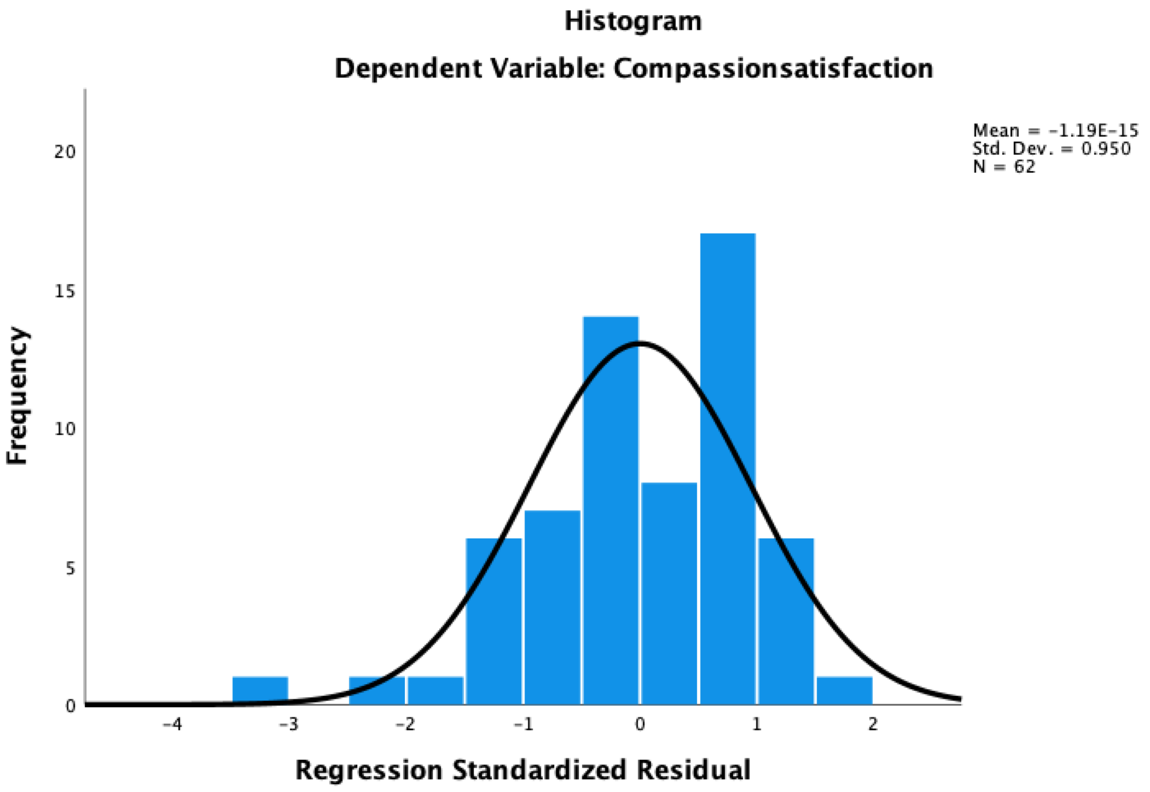


Figure N2.

Line graph depicting linearity of data assumption is met.

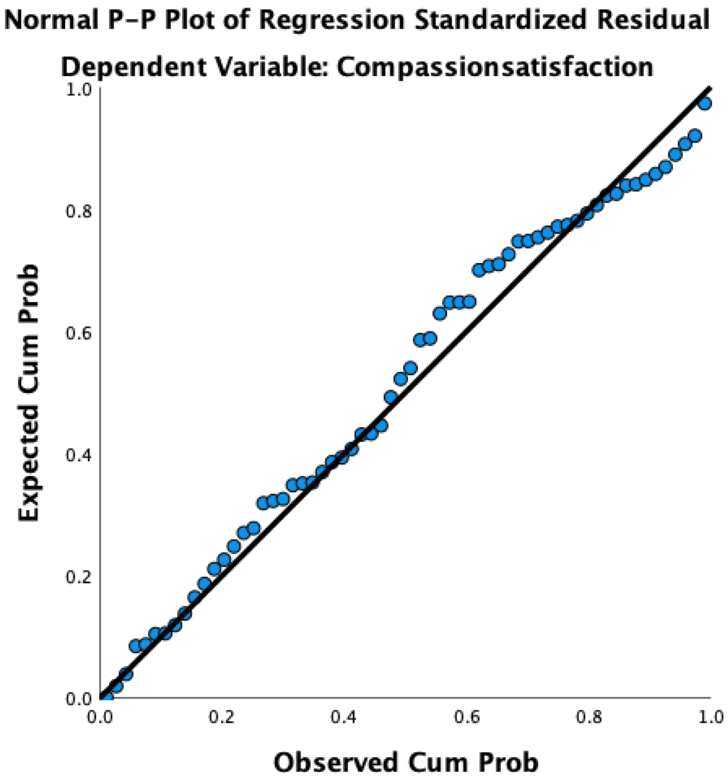
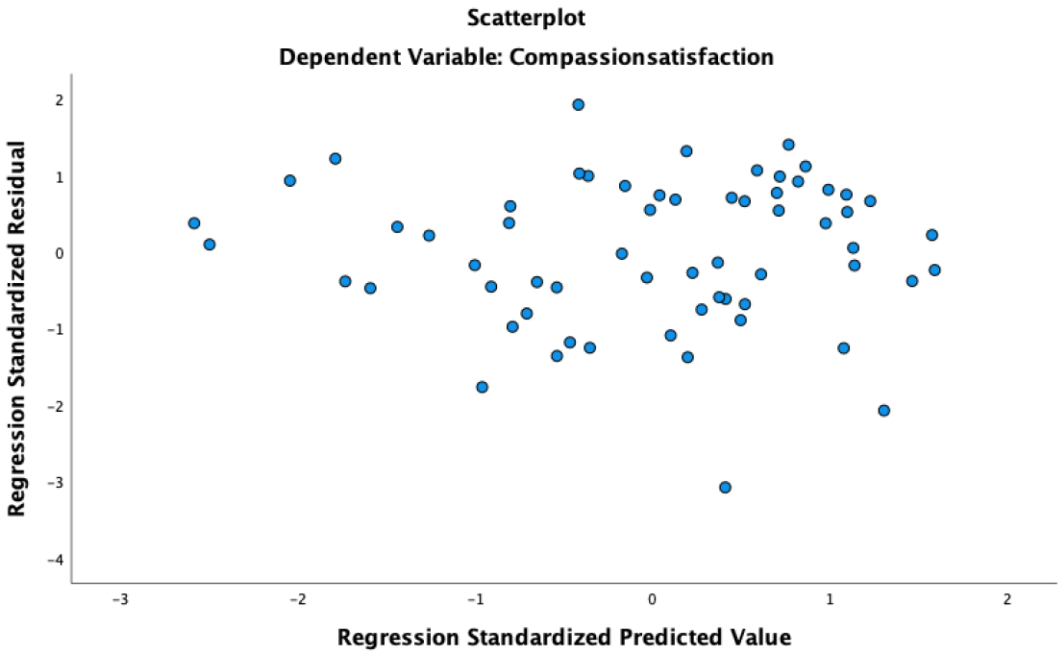


Figure N3.

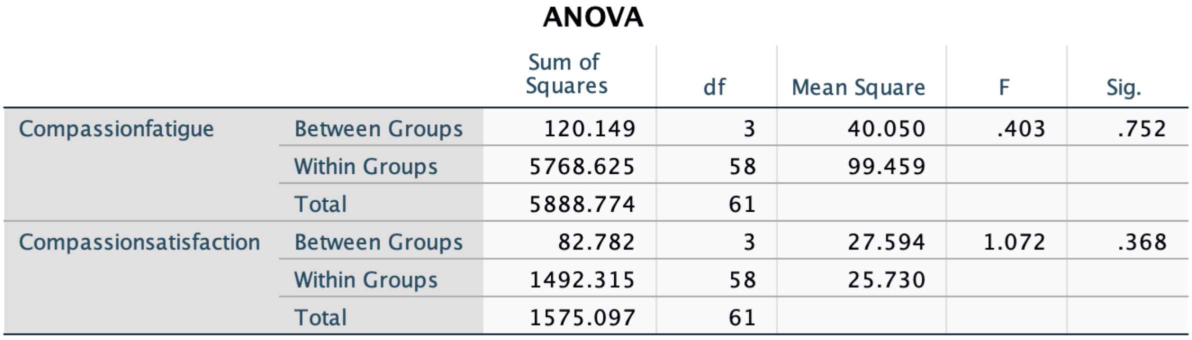
Scatterplot showing homoscedasticity of data.



Appendix O. ANOVA assessing impact of work setting on compassion fatigue and satisfaction.

Table O1.

Significance of work setting on compassion fatigue and compassion satisfaction.



ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Compassionfatigue	Between Groups	120.149	3	40.050	.403	.752
	Within Groups	5768.625	58	99.459		
	Total	5888.774	61			
Compassionsatisfaction	Between Groups	82.782	3	27.594	1.072	.368
	Within Groups	1492.315	58	25.730		
	Total	1575.097	61			