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AN INVESTIGATION OF ATTACHMENT ORIENTATION, COMPASSION FATIGUE, COMPASSION SATISFACTION AND RESILIENCE IN HOSPICE AND PALLIATIVE CARE NURSING STAFF

By

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Thesis for the degree of Doctor of Clinical Psychology

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ABSTRACT

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Miranda Poore

Firstly, the literature exploring associations between attachment orientation, burnout, compassion fatigue and compassion satisfaction in employees was reviewed. This added to a previous review by exploring compassion satisfaction and investigating potential mechanisms to account for any associations between these constructs. Twenty-six empirical studies were identified. Collectively, the reviewed articles suggested that secure attachment style offers protection from burnout and that attachment anxiety is associated with higher levels of burnout and compassion fatigue amongst employees. Results relating to attachment avoidance are less clear and a limited number of studies make it difficult to draw conclusions in relation to compassion satisfaction. In reviewing the proposed mechanisms for associations between the constructs under review, commonalities were identified, including internalised representations of self and others that predispose towards maladaptive coping responses and difficulties with affect regulation. Limitations of the reviewed studies include an array of different measures of attachment and burnout, restricting opportunity for comparisons between studies, cross-sectional designs and lack of clarity around the concepts being measured.

The empirical paper investigated associations between attachment orientation, compassion fatigue (comprising burnout and secondary trauma), compassion satisfaction and resilience in a sample of 64 hospice and palliative care nursing staff. It was predicted that attachment anxiety would be significantly and positively associated with both sub-components of compassion fatigue and negatively related to compassion satisfaction, and that attachment avoidance would be positively associated with burnout and negatively related to compassion satisfaction. The present study sought to explore associations between attachment avoidance and secondary trauma as the current evidence base is inconclusive in this regard. Hypotheses were supported, with the exception of associations between attachment anxiety and compassion satisfaction, which were not significant. It was also hypothesised that resilience would mediate relationships between attachment orientation and burnout, secondary trauma and compassion satisfaction: this hypothesis was not supported. A novel, implicit measure of attachment orientation was administered but failed to significantly correlate with any of the predictor or criterion variables. Suggestions for how this measure may be used in future research are offered. Burnout, secondary trauma, compassion satisfaction and resilience scores remained stable over time, highlighting the importance of establishing appropriate intervention programmes in order to support those experiencing compassion fatigue. Limitations, clinical implications and directions for further research are discussed.

Table of Contents

List of Tables

List of Figures

Declaration of Authorship

I, Miranda Poore, declare that this thesis entitled **'An investigation of attachment orientation, compassion fatigue, compassion satisfaction and resilience in hospice and palliative care nursing staff'** and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1) This work was done wholly or mainly while in candidature for a research degree at this University;

2) Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3) Where I have consulted the published work of others, this is always clearly attributed;

4) Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

5) I have acknowledged all main sources of help;

6) Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7) None of this work has been published before submission.

Signed:

Date:

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Chapter 1: Literature Review

Associations between Attachment Orientation, Burnout, Compassion Fatigue and Compassion Satisfaction amongst Employees

Within the last decade, the World Health Organisation has called for further research into work-related stress, calling this a major public health concern (Commission on Social Determinants of Health, 2008). Work-related stress can be conceptualised in various ways, two of which are burnout and compassion fatigue (Joinson, 1992). Burnout is a psychological syndrome occurring in response to chronic stressors at work (Maslach, 2003). Compassion fatigue is a form of burnout specific to helping professionals (Joinson, 1992), arising through significant investment of care and compassion towards those who are suffering, whilst neglecting self-care (Figley, 2015). Although numerous variables may contribute to the development of these conditions, Harms (2011) has suggested that attachment theory (Bowlby, 1958; 1969/1982) has an important function in enhancing our understanding of workplace phenomena, given its relevance to interpersonal relationships and psychological health. Attachment orientations may be useful in considering vulnerability towards (or conversely, protection from) development of burnout and compassion fatigue. Attachment theory has attracted considerable interest in contemporary research (Simpson & Rholes, 1998), but has only recently been applied to the workplace. This review seeks to explore associations between attachment orientation, burnout, compassion fatigue and compassion satisfaction amongst employees.

Although burnout and compassion fatigue are distinct constructs (Potter et al., 2010), both have been empirically linked with negative outcomes for the individual, including helplessness, anxiety and depression (Conrad & Kellar-Guenther, 2006), and the wider workplace, such as higher staff turnover and reduced productivity (Pfifferling & Gilley, 2000). Whilst research has focused mainly on human service populations,

high levels of burnout and compassion fatigue have been observed across other professional groups (e.g., Aguwa, Nduka, & Arinze-Onyia, 2014) as well as amongst human service professionals (e.g., Cañadas-De la Fuente et al., 2015; Abendroth & Flannery, 2006).

Burnout.

Burnout arises through chronic exposure to work-specific stressors, including pressure, constraints and unrealistic demands (Valent, 2002). Maslach and Jackson (1981) originally conceptualised burnout as a syndrome comprising emotional exhaustion, depersonalisation and reduced sense of personal accomplishment, and occurring amongst helping professionals. Maslach and Leiter (1997) have proposed a work-life model, suggesting that mismatches between individuals and their work environments in the following areas underpin burnout:

1) Workload – Excessive workload or being set tasks which do not suit the individual's skill-set.

2) Control – Insufficient control over resources required to complete a task.

3) Reward – An employee needs to feel appropriately rewarded for their achievements at work. Social rewards can be particularly important, including praise and recognition of one's efforts.

4) Community – Positive connections with other employees can foster a sense of belonging to a group with a shared identity.

5) Fairness – Perceptions of unfairness in the workplace.

6) Values – Ideally, individual values should correspond with perceived values of the workplace.

Maslach, Schaufeli, and Leiter (2001) suggest that employees have their own idiosyncratic blueprint that determines how great a mismatch they can tolerate in each area before burnout develops.

Compassion fatigue.

Compassion fatigue has been described as the “cost of caring” (Figley, 1982), being a consequence of helping, or of wanting to help another person who is traumatised or suffering (Figley, 2002). Figley (1995) described compassion fatigue as virtually identical to post-traumatic stress disorder (PTSD) except that it relates to another’s traumatic experience, as opposed to one’s own. This secondary trauma reaction impedes an individual’s ability to deliver empathic and compassionate care, potentially impacting negatively on patient/client care as well as on the individual’s self-efficacy. The term ‘compassion fatigue’ is often used interchangeably with ‘secondary traumatic stress disorder’ and ‘vicarious traumatisation’ (Bride, Radey, & Figley, 2007)

Figley’s (1995) model of compassion fatigue claims that empathy is simultaneously a means of helping others and of increasing one’s own vulnerability to compassion fatigue. Exposure to a client’s trauma and the individual’s own trauma memories and life stresses are also proposed as contributors to the development of compassion fatigue. Figley (1997; 2002) identifies a sense of achievement and disengagement from the client’s trauma as protective factors.

Adams, Boscarino, and Figley (2006) proposed that compassion fatigue is a combination of secondary trauma and burnout. Relative to burnout, the secondary trauma component of compassion fatigue is under-researched (Kearney, Weininger, Vachon, Harrison, & Mount, 2009), but evidence suggests that it is associated with significant adverse consequences (e.g., McGarry et al., 2013) and warrants further study.

Compassion satisfaction.

Compassion satisfaction is a sense of gratification derived from experiences of helping others (Stamm, 2002) that may buffer against the negative consequences of secondary trauma. Compassion satisfaction is rarely investigated as a construct in its own right, but research has linked higher levels of compassion satisfaction with improved standards of patient care (Dasan, Gohil, Cornelius, & Taylor, 2015), and compassion satisfaction is typically negatively associated with burnout and secondary trauma (e.g., Conrad & Kellar-Guenther, 2006). Compassion satisfaction is not the same as job satisfaction (Zerach, 2013). The latter pertains to general contentment with one's job, as opposed to satisfaction derived specifically from caring for others.

Attachment.

Attachment theory (Bowlby, 1958; 1969/1982) is a comprehensive model of behaviour within interpersonal relationships. It offers a compelling explanation for individual differences in emotion regulation, support seeking and coping strategies during times of stress.

Attachment style refers to the stable internalised representations, or internal working models (IWMs; Bowlby, 1969) of self and others, formed through early experiences with caregivers. IWMs are cognitive frameworks containing rules for predicting and understanding future relationships. Thus if a child experiences consistently available caregivers who are helpful in alleviating distress, s/he is likely to develop IWMs which promote positive beliefs around distress management, self-efficacy and interpersonal trust in adulthood (Shaver & Mikulincer, 2002). Such individuals are regarded as having a secure attachment style, which is associated with more effective emotion regulation and support seeking than insecure attachment styles (Buelow, Lyddon, & Johnson, 2002). Insecure attachment is commonly conceptualised as an individual's position along two continuous dimensions: attachment anxiety and

attachment avoidance (Brennan, Clark, & Shaver, 1998). High levels of attachment anxiety develop from inconsistent caregiving in childhood with subsequent hyper-activation of the attachment system in adulthood, including focus on negative affect and persistent reassurance-seeking (Shaver, Schachner, & Mikulincer, 2005). High attachment avoidance develops when caregivers are consistently absent or unreliable in childhood, leading to development of IWMs of others as untrustworthy and either unwilling, or unable to provide support in times of distress. This results in deactivation of the attachment system in adulthood, associated with denial of emotional needs, suppression of painful thoughts and affect, and excessive attempts at self-reliance. According to this framework, secure attachment can be thought of as low attachment anxiety and low attachment avoidance.

Given their complexity, there are likely to be numerous variables involved in the development of burnout, secondary trauma and compassion satisfaction. As greater attachment insecurity has been empirically linked with lower levels of empathy (Wayment, 2006), it seems reasonable to hypothesise that attachment may influence an individual's risk of developing compassion fatigue, which includes burnout and secondary trauma. Although attachment research has tended to focus on romantic relationships in adulthood, researchers have begun to explore the impact of attachment style in the workplace (e.g., Hazan & Shaver, 1990).

Previous reviews.

In a recent review of associations among attachment style, burnout and compassion fatigue in health and human service workers, secure attachment style was reliably associated with lower levels of burnout and compassion fatigue (West, 2015). Attachment anxiety was consistently associated with higher levels of work-related stress. Results for attachment avoidance were less clear, with three studies reporting significant positive associations with burnout and two reporting a non-significant relationship. West did not explore the relationship between attachment style and

compassion satisfaction, which, given the significance of compassion satisfaction in mitigating the negative effects of compassion fatigue (Stamm, 2002) seems a significant omission. Several authors of the reviewed articles offered suggestions as to the mechanisms potentially accounting for the observed findings, but West failed to discuss these. If we are to reduce rates of compassion fatigue and burnout, it is imperative to understand the mechanisms via which they develop, and these are therefore explored in the current review.

Compassion fatigue is growing in popularity in the empirical literature. A search of the term 'compassion fatigue' using the Web of Science database returned 702 articles, 44% of which were published between 2013 and 2015. West only reviewed studies published up until 2013, and exclusively focused on associations amongst helping professionals. Given the ever-expanding evidence base, it is necessary to extend this initial search. I am aware of numerous papers that were not included in West's article and therefore I extended the literature search to include a broader range of professions.

Aims and scope of literature review.

The current literature review aims to explore associations between attachment orientation with burnout and secondary trauma (collectively comprising compassion fatigue), and compassion satisfaction, across a range of professional settings, thus extending West's (2015) review by including compassion satisfaction and a broader range of professional groups. It also aims to go beyond West's descriptive analysis of studies, to include an exploration of the proposed mechanisms for these associations, in an attempt to further our understanding of the pathways via which these constructs are linked.

Review objectives

1) To explore associations between attachment orientation and burnout, secondary trauma and compassion satisfaction within the working population.

2) To review and critique the observed associations.

3) To discuss the mechanisms presented in the literature to account for any relationships between these constructs.

4) To provide suggestions of how employers can support their staff.

5) To suggest potential avenues for future research based on the findings.

Method

Search strategy.

A systematic literature search was conducted in December 2015, using the following electronic databases: PsycINFO, PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL) and Web of Science. Search terms were identified from existing literature (e.g., Bride et al., 2007; Najjar, Davis, Beck-Coon, & Doebbeling, 2009), as well as via the thesaurus (PsycINFO) and CINAHL Headings (CINAHL) tools. The following search terms were included for each database: 'attachment' AND 'burnout' OR 'compassion fatigue' OR 'compassion satisfaction' OR 'secondary trauma*' OR 'vicarious trauma*' OR 'occupational stress' OR 'professional burnout'. As a relatively small number of articles were returned results were not restricted by date.

The search returned 411 English language peer-reviewed journal articles, of which 120 were duplicates and therefore excluded.

Table 1

Exclusion criteria for articles in the current review

Inclusion	Exclusion
Peer-reviewed journal article	Not peer reviewed
English language	Non-English language
Empirical study	Dissertation/thesis
Includes measure of adult attachment orientation	Non-empirical articles, including theoretical, discussion or review papers
Professional/employee population	Case study
Independent sample	Non-professional/employee population
Measures burnout/compassion fatigue/ compassion satisfaction/secondary trauma/vicarious trauma or work stress	No analysis of associations between constructs under investigation
	Assessment of non-human attachment, including to the workplace
	No measure of constructs under investigation
	Assessment of others' attachment orientation
	Shared sample with another article already included in the review

Titles and abstracts were scrutinised according to predetermined inclusion and exclusion criteria, displayed in Table 1. This resulted in removal of 251 articles (see *Figure 1*). Upon examination of full texts, 15 further articles were excluded, leaving 25 relevant papers. Reference lists of included publications were inspected but no additional articles were found. I was aware of a recent publication which did not appear in the search results (Leiter, Day, & Price, 2015). This was included, leaving 26 articles in total.

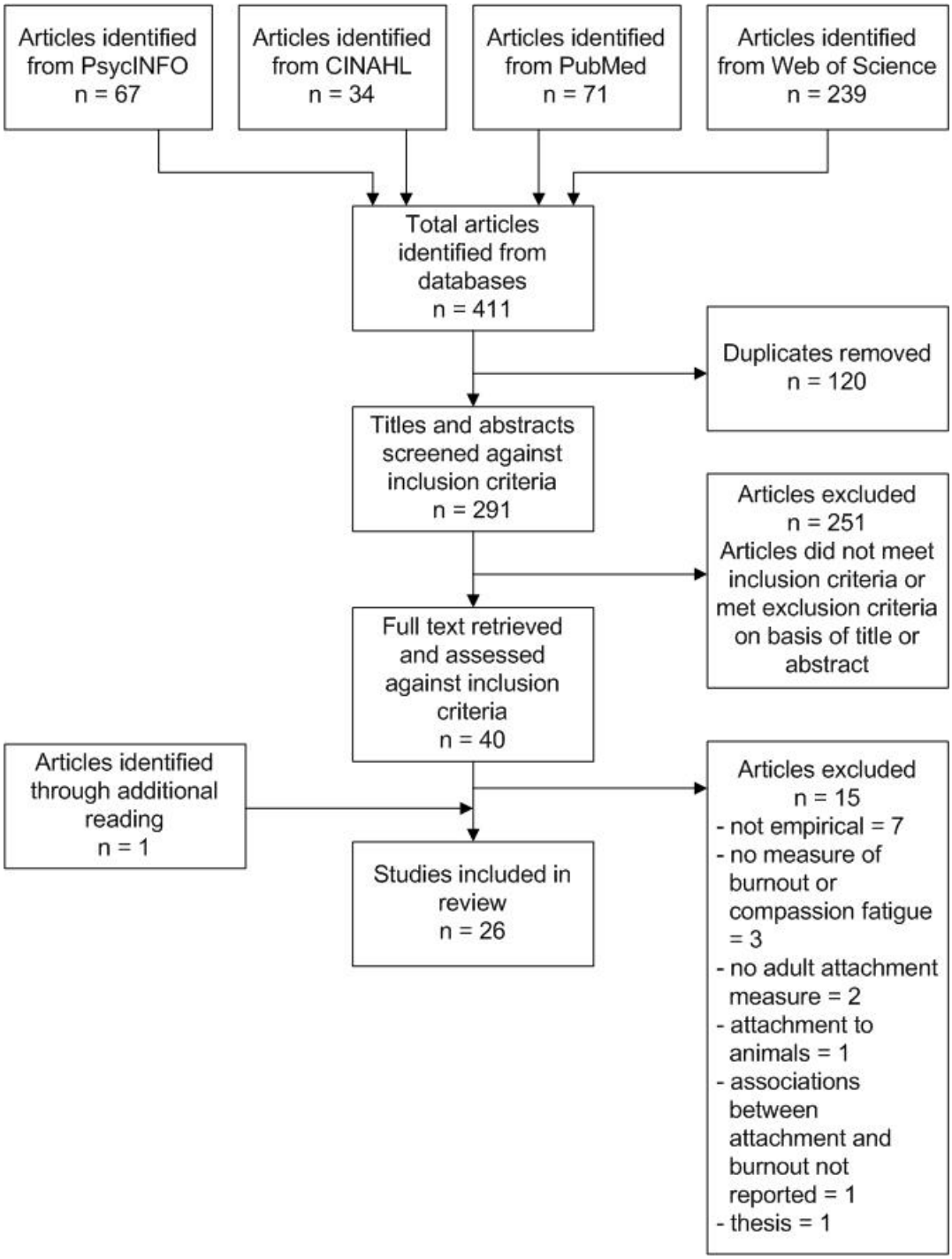

Figure 1. Flow chart of study selection process

Data extraction and synthesis.

Table 2 summarises the design and results of each study. Only information directly relevant to the aims of the current review are included. A more detailed exploration of articles follows.

Table 2

Characteristics of the studies included in the review

Reference	Population & Sample Characteristics	Design & Measures	Results
Burrell, Mcfarlane, Tandon, Fuddy, Duggan, and Leaf (2009)	Home visitors on the Healthy Start Program (HSP) in Hawaii. *n* = 62 98% female Age (20-29 years = 20%; 30-39 years = 36%; 40-49 years = 29%; 50-59 years = 12%; 60-69 years = 3%)	Cross-sectional, survey The Attachment Style Questionnaire (ASQ; Feeney, Noller, and Hanrahan, 1994) Maslach Burnout Inventory (MBI; Maslach and Jackson, 1981, 1996).	*Attachment anxiety:* Significantly and positively associated with emotional exhaustion (r = .35, p < .05) and depersonalization (r = .36, p < .01) Significantly and negatively associated with personal accomplishment (r = -.33, p < .05). *Attachment avoidance:* Not significantly associated with any of the MBI sub-scales.
Chopik (2015)	Employees from the United States, recruited via Amazon Mechanical Turk. *n* = 191 54.2% female Age (*M* = 35.97 years, *SD* = 12.79 years)	Cross-sectional, online survey Experiences in Close Relationships Scale - short form (ECR-S; Wei, Russell, Mallinckrodt, and Vogel, 2007) Shirom-Melamed Burnout Measure (SMBM; Shirom, 1989, 2003, 2005)	*Attachment anxiety:* Significantly and positively related to all three SMBM sub-scales (physical fatigue: r = .35, p < .01; emotional exhaustion: r = .22, p < .01; cognitive weariness: r = .43, p < .01). *Attachment avoidance:* Significantly and positively related to all three SMBM sub-scales (physical fatigue: r = .24, p < .01; emotional exhaustion: r = .29, p < .01; cognitive weariness: r = .25, p < .01).

Reference	Population & Sample Characteristics	Design & Measures	Results
Falvo, Favara, Di Bernardo, Boccato, and Capozza (2012)	Nurses employed in two hospitals in North Italy. *n* = 161 77% female Age (21-30 years = 17.4%; 31-40 years = 37.9%; 41-50 years = 34.2%; 50+ years = 9.9%)	Cross-sectional, survey An amalgamation of existing attachment measures (see Table 3) Maslach Burnout Inventory –General Survey (MBI-GS; Schaufeli, Leiter, Maslach, and Jackson, 1996). Emotional exhaustion and cynicism sub-scales only.	*Attachment anxiety:* Not significantly associated with either MBI-GS sub-scale. *Attachment avoidance:* Significantly and positively associated with the exhaustion (r = .24, p < .01) and cynicism (r = .27, $p \leq .001$) MBI-GS sub-scales. *Secure attachment style:* Significantly and negatively associated with cynicism (r = -.17, p < .05) but not significantly related to emotional exhaustion.
Gama, Barbosa, and Vieira (2014)	Nurses employed in end-of-life care in various departments: internal medicine, oncology, haematology and palliative care departments of five hospitals in Lisbon, Portugal. *n* = 360 86.7% female Age (*M* = 30.5 years, *SD* = 8.01 years)	Cross-sectional, survey Adult Attachment Scale (AAS; Collins and Read, 1990) MBI (translated into Portuguese)	*Anxious attachment:* Significantly and positively correlated with emotional exhaustion (r = .33, p < .0001) and depersonalization (r = .32, p < .0001). Significantly and negatively correlated with personal accomplishment (r = -.27, p < .0001). *Secure attachment:* Significantly and negatively related to emotional exhaustion (r = -.29, p < .0001) and depersonalization (r = -.29, p < .0001). Significantly and positively related to personal accomplishment (r = .32, p < .0001). Significantly predicted MBI personal accomplishment sub-

			scale scores.
Halpern, Maunder, Schwartz, and Gurevich (2012)	Ambulance workers (front-line and supervisory roles) from a large urban emergency medical services organisation. *n* = 189 62% male Age (*M* = 37.4 years, *SD* = 9.2 years)	Cross-sectional, paper or online survey Relationship Scales Questionnaire (RSQ; Griffin and Bartholomew, 1994) MBI (emotional exhaustion sub-scale only).	*Fearful attachment:* Significantly and positively associated with burnout (r = .26, p < 0.001).
Hartley, Jovanoska, Roberts, Burden, and Berry (2015)	Staff members working with service users experiencing psychosis across three mental health inpatient units in the North West of England *n* = 50 66% female Age (*M* = 37.5 years, *SD* = 10.64 years)	Cross-sectional, survey The Attachment Measure (Berry, Wearden, Barrowclough, and Liversidge, 2006) MBI	*Attachment anxiety:* Significantly and positively correlated with emotional exhaustion (r = .304, p < .05) and depersonalization (r = .437, p < .01). Not significantly related to personal accomplishment. *Attachment avoidance:* Not significantly related to any of the MBI sub-scales.
Hawkins, Howard, and Oyebode (2007)	Hospice nurses across five hospice sites within the West Midands, UK *n* = 84 99% female Age (M = 46 years)	Cross-sectional, survey Experiences in Close Relationships Scale (ECR; Brennan, Clark, and Shaver, 1998) Nursing Stress Scale (NSS; Gray-Toft and Anderson, 1981)	NSS scores were not significantly different between securely and insecurely attached participants.

Reference	Population & Sample Characteristics	Design & Measures	Results
Kokkonen, Cheston, Dallos, and Smart (2014)	Permanent members of staff from nine inpatient wards for older people in the UK *n* = 75 79.2% female Age (18-29 years = 18.2%; 30-39 years = 15.6%; 40-49 years = 31.2%;50-59 years = 28.6%;60-69 years = 6.5%)	Cross-sectional, survey Experiences in Close Relationships – Revised (ECR-R; Fraley, Waller and Brennan, 2000) MBI	*Attachment anxiety:* Significantly and positively correlated with emotional exhaustion (r = .26, p < .05) and depersonalization (*Spearman's rho* = .30, p < .01). Significantly negatively correlated with personal accomplishment (r = - .44, p < .01). Higher attachment anxiety scores significantly predicted lower personal accomplishment scores: ß = -.32, p <.05. *Attachment avoidance:* Significantly and positively correlated with emotional exhaustion (r = .27, p < .01) and depersonalization (*Spearman's rho* = .20, p < .05). Not significantly correlated with personal accomplishment.
Lavy (2014)	Israeli service employees working in customer call centres. *n* = 120 60% female Age (*M* = 26.5 years, *SD* = 5.0 years)	Cross-sectional, survey ECR The Burnout Measure – Short Version (Malach-Pines, 2005).	Neither attachment anxiety nor attachment avoidance were significantly correlated with burnout.
Leiter, Day, and Price, 2015	Healthcare workers in Eastern Canada *n* = 1624	Cross-sectional, survey Short Workplace Attachment Measure	*Attachment anxiety:* Significantly and positively correlated with emotional exhaustion (r = .19, p < .01) and cynicism (r = .24, p < .01).

	Age (*M* = 43.14 years, *SD* = 10.84 years)	(SWAM; Leiter, Price and Day, 2013). MBI-GS	Significantly and negatively correlated with professional efficacy (*r* = -.20, *p* < .01). *Attachment avoidance:* Not significantly correlated with emotional exhaustion or cynicism. Significantly and negatively correlated with professional efficacy (*r* = -.13, *p* < .01).
Littman-Ovadia, Oren, and Lavy (2013)	Israeli employees from across a wide range of organisations with a range of positions and professions represented *n* = 150 50.6% female Age (*M* = 34.66 years, *SD* = 9.52 years)	Cross-sectional, survey ECR MBI-GS	*Attachment anxiety:* Significantly and positively associated with burnout (*r* = .29, *p* < .001). This association was not moderated by job autonomy. *Attachment avoidance:* Significantly and positively associated with burnout (*r* = .19, *p* < .05). Job autonomy moderated this relationship; in the high autonomy condition, higher avoidance was associated with higher burnout. In the low autonomy condition, there were no significant differences between low- and high-avoidance groups.

Reference	Population & Sample Characteristics	Design & Measures	Results
Marmaras, Lee, Siegel, and Reich (2003)	Female therapists working with adult outpatient trauma survivors *n* = 375 100% female Age (25-35 years = 8%; 36-45 years = 20.5%; 46-55 years = 48.3%; 56-65 years = 20.3%; 66+ years = 2.9%)	Cross-sectional, survey Relationship Questionnaire (RQ; Bartholomew and Horowitz, 1991) Impact of Event Scale – Revised (IES-R; Weiss and Marmar, 1995)	*Preoccupied attachment style:* Significantly and positively associated with symptoms of hyperarousal, avoidance and intrusion (r = .23, p < .01). Positively predicted vicarious trauma scores (B = .18, p < .01) *Dismissive attachment style:* Significantly and positively associated with symptoms of hyperarousal, avoidance and intrusion (r = .23, p < .01). Positively predicted vicarious trauma scores (B = .20, p < .01). *Fearful attachment style:* Significantly and positively correlated with symptoms of hyperarousal, avoidance and intrusion (r = .27, p < .01). Positively predicted vicarious trauma scores (B = .21, p < .01). *Secure attachment style*: Significantly and negatively correlated with symptoms of hyperarousal, avoidance and intrusion (r = -.20, p < .01).
Maunder et al. (2006)	Healthcare workers in Toronto, Canada *n* = 187 (Survey B only) 86% female (estimated based on overall sample statistics) Age (*M* = 45 years, *SD* = 9 years)	Cross-sectional, survey ECR-R MBI (emotional exhaustion sub-scale only)	*Attachment anxiety:* Significantly and positively correlated with emotional exhaustion (*Spearman ρ* = .179, p < .05). *Attachment avoidance:* Not significantly correlated with emotional exhaustion.

Ostacoli et al. (2010)	Italian specialist oncology nurses working across 1) six hospital oncology units, and 2) three hospices *Group 1 (hospital):* *n* = 59 86.4% female Age (*M* = 34.14 years, *SD* = 7.3 years) *Group 2 (hospice):* *n* = 33 97% female Age (*M* = 37.27 years, *SD* = 9.71 years)	Cross-sectional, survey ASQ MBI	The Discomfort with closeness sub-scale significantly predicted emotional exhaustion scores (*ß* = .275, *p* < .05). The Preoccupation with relationships sub-scale significantly predicted depersonalisation scores (*ß* = .218, *p* < .05). The Confidence, Need for approval and Relationships as secondary sub-scales did not significantly predict MBI scores.

Reference	Population & Sample Characteristics	Design & Measures	Results
Pardess, Mikulincer, Dekel, and Shaver (2014)	Israeli volunteers in several trauma-related organisations <u>Study 1</u> *n* = 148 76.4% female Age (*Mdn* = 39 years) <u>Study 2</u> *n* = 54 75.9% female Age (*Mdn* = 50 years) <u>Study 3</u> *n* = 107 79.4% female Age (*Mdn* = 55 years)	Cross-sectional survey (study 1), diary design (study 2) and experimental (study 3). ECR Professional Quality of Life Scale – Version III (ProQOL-III; Stamm, 1995; 2002). Only 11 items were used in Study 2 and Study 3. A written hypothetical situation involving a traumatized woman	*Attachment anxiety:* Significantly and positively predicted burnout in Study 1 (*ß* = .42, *p* < .01), Study 2 (*γ*= .12, *p* < .05) and Study 3 (*ß* = .22, *p* < .05). Significantly and positively predicted secondary trauma in Study 1 (*ß* = .38, *p* < .01) and Study 3 (*ß* = .28, *p* < .01). Not significantly related to compassion satisfaction. Significant interaction effect with relevant experience. Higher attachment anxiety significantly predicted higher burnout (*ß* = .7, *p* < .01) and higher secondary trauma scores (*ß* = .56, *p* < .01) when experience was low, but not when experience was relatively high. *Attachment avoidance:* Higher attachment avoidance significantly predicted lower compassion satisfaction in Study 1 (*ß* = -.26, *p* < .01), Study 2 (*γ* = -.28, *p* < .01) and Study 3 (*ß* = -.46, *p* < .01). Did not significantly predict burnout or secondary trauma. Security priming significantly reduced burnout (*ß* = -.32, *p* < .01) and secondary trauma (*ß* = .31, *p* < .01) and significantly increased compassion satisfaction scores (*ß* = .18, *p* < .05) in Study 3.
Pines (2004)	Israeli dialysis nurses *n* = 216 80.1% female	Cross-sectional, survey The Burnout Measure (BM; Pines and	*Attachment anxiety:* Significantly and positively correlated with burnout (*r* = .21, *p* < .01).

	Age (*M* = 40.6 years)	Aronson, 1998) An amalgamation of existing attachment measures (see Table 3)	*Attachment avoidance:* Significantly and positively correlated with burnout (*r* = .26, *p* < .01). *Secure attachment:* Significantly and negatively associated with burnout (*r* = -.21, *p* < .01).
Racanelli (2005)	Two independent groups of mental health clinicians specialising in trauma from Israel and New York (United States). *n* = 66 62% female	Cross-sectional, survey ECR-R Pro-QOL-III	*Attachment anxiety:* Significantly and positively predicted burnout (*b* = .39, *p* .01). Significantly and negatively predicted compassion satisfaction (*b* = -.39, *p* < .01). *Attachment avoidance:* Significantly and positively predicted burnout (*b* = .27, *p* < .05).
Reizer (2015)	Israeli employees (employed part- or full-time in health care, education, service, consulting, marketing, science and computer programming and finance) *n* = 339 59% female Age (*M* = 35.91 years, *SD* = 11.3 years)	Cross-sectional, survey ECR SMBM	*Attachment anxiety:* Significantly and positively correlated with burnout (*r* = .33, *p* .001). *Attachment avoidance*: Significantly and positively correlated with burnout (*r* = .26, *p* < .001).

Reference	Population & Sample Characteristics	Design & Measures	Results
Ronen and Baldwin (2010)	Israel hotel employees *n* = 231 63% female Age (*M* = 24.34 years, *SD* = 3.5 years)	Longitudinal, survey *Time 1:* ECR (Attachment anxiety sub-scale only) *Time 1 and 2:* MBI-GS Perceived Stress Scale (PSS; Cohen, Kamarck and Mermelstein, 1983). A six-item scale developed within this study to assess hypersensitivity to social rejection.	*Attachment anxiety:* Significantly and positively associated with burnout at Time 1 (emotional exhaustion: $r = .28$, $p < .001$; cynicism: $r = .39$, $p < .001$; reduced efficacy: $r = .30$, $p < .001$). Significantly and positively associated with burnout at Time 2 (emotional exhaustion: $r = .35$, $p < .001$; cynicism: $r = .38$, $p < .001$; reduced efficacy: $r = .37$, $p < .001$). The path coefficient between attachment anxiety at Time 1 and burnout at Time 2 was significant (.23, $p < .001$), meaning that attachment anxiety predicted future burnout. This relationship was fully mediated by hypersensitivity to social rejection and perceived stress at Time 2 (after controlling for Time 1 burnout and Time 1 perceived stress).
Ronen and Mikulincer (2009)	Israeli private-sector employees (employed full-time as bank clerks, salespeople, insurance agents or practical engineers) *n* = 393 60% female Age (*M* = 29.77 years, *SD* = 8.59 years)	Cross-sectional, survey ECR MBI-GS Perceptions of Fair Interpersonal Treatment Scale (PFIT; Donovan,	*Attachment anxiety:* Significantly and positively correlated with all MBI-GS sub-scales (exhaustion: $r = .25$, $p < .001$; cynicism: $r = .30$, $p < .001$; reduced efficacy: $r = .21$, $p < .001$). Significantly and positively predicted overall burnout ($b = .32$, p .001). This relationship was partially mediated by perceived team cohesion.

		Drasgow, and Munson, 1998). A 10-item scale developed by Rom and Mikulincer (2003) to assess work-team cohesion.	*Attachment avoidance:* Significantly and positively correlated with all MBI-GS sub-scales (exhaustion: $r = .20$, $p < .001$; cynicism: $r = .24$, $p < .001$; reduced efficacy: $r = .26$, $p < .001$). Significantly and positively predicted overall burnout ($b = .22$, $p < .01$). This relationship was fully mediated by perceived organisational fairness.
Ronen and Mikulincer (2012)	Israeli employees (employed full-time in banking, accountancy, insurance, sales or engineering) *n* = 483 51% female Age (*M* = 36 years, *SD* = 11 years)	Cross-sectional, survey ECR MBI-GS	*Attachment anxiety:* Significantly and positively predicted scores on all MBI-GS sub-scales (emotional exhaustion: $b = .22$, $p < .01$; cynicism: $b = .22$, $p < .01$; reduced efficacy: $b = .11$, $p < .01$). *Attachment avoidance:* Significantly and positively predicted scores on all MBI-GS sub-scales (emotional exhaustion: $b = .21$, $p < .01$; cynicism: $b = .24$, $p < .01$; reduced efficacy: $b = .15$, $p < .01$).

Reference	Population & Sample Characteristics	Design & Measures	Results
Schirmer and Lopez (2001)	American University employees *n* = 117 59.8% female Age (*M* = 43.84 years, *SD* = 10.95 years)	Cross-sectional, survey RQ ECR The organizational stress sub-scale of the Work Stress Inventory (WSI; Barone, Caddy, Katell, Roselione, and Hamilton, 1988). Supervisor Support (Caplan, Cobb, French, Harrison and Pinneau, 1975).	*Attachment anxiety:* Significantly and positively correlated with work stress intensity (r = .28, p < .01). Anxiously attached participants (preoccupied or fearful on the RQ) scored significantly higher on work stress intensity than secure or dismissive participants (F(2,111) = 5.99, p < .01). Greater attachment anxiety uniquely predicted work stress intensity after supervisor support was controlled (B = -.24, p < .05). *Attachment avoidance:* Not significantly correlated with work stress
Simmons, Gooty, Nelson, and Little (2009)	Assisted living centre employees and their supervisors, United States of America *n* = 203 (employees) *n* = 161 (supervisors) 83% female	Cross-sectional, survey Self-Reliance Inventory (SRI; Joplin, Nelson, and Quick, 1999) SMBM	*Secure attachment:* Significantly and negatively related to burnout (r = -.48, p < .01). Significantly predicted burnout ($ß$ = -.64, p < .01).

Tosone, Bettmann, Minami, and Jasperson (2010)	Manhattan social workers *n* = 481 79.6% female Age (*M* = 59.83 years, *SD* = 9.3 years)	Cross-sectional, survey Adult Attachment Questionnaire (AAQ; Simpson, Rholes and Nelligan, 1992; Simpson, Rholes and Phillips, 1996). Pro-QOL (Secondary trauma sub-scale only)	*Attachment ambivalence*: Significantly and positively predicted secondary trauma scores, after controlling for time spent with trauma clients, experience and in/direct observation of 9/11 terror attack (*ß* = .093, *t* = 2.784, *p* = .006). Attachment ambivalence explained 2.2% of variance in secondary trauma scores. *Attachment avoidance:* Significantly and positively predicted secondary trauma scores, after controlling for time spent with trauma clients, experience and in/direct observation of 9/11 terror attack (*ß* = .179, *t* = 4.052, *p* < .001). Attachment avoidance uniquely explained 4.6% of variance in secondary trauma scores.

Reference	Population & Sample Characteristics	Design & Measures	Results
Vanheule and Declercq (2009)	Belgian security guards *n* = 530 85.4% male Age (*M* = 39.87 years, *SD* = 10.6 years)	Cross-sectional, survey MBI-GS (Dutch translation) RQ	*Secure attachment:* Significantly and negatively related to all MBI-GS sub-scales (emotional exhaustion: *r* = -.134, *p* < .01; cynicism: *r* = -.157, *p* < .01; reduced efficacy: *r* = -.188, *p* < .01) and total burnout scores (*r* = -.201, *p* < .01). Significantly moderated the relationship between critical incidents and MBI-GS cynicism and reduced efficacy sub-scales, as well as total burnout. In those reporting a critical incident, increased security predicted lower burnout. *Fearful attachment:* Significantly and positively related to all MBI-GS sub-scales (emotional exhaustion: *r* = .243, *p* < .01; cynicism: *r* = .270, *p* < .01; reduced efficacy: *r* = .169, *p* < .01) and total burnout scores (*r* = .280, *p* < .01). Significantly moderated the relationship between critical incidents and MBI-GS emotional exhaustion and cynicism sub-scales, and total burnout. In those reporting a critical incident, increased fearful attachment predicted higher burnout. *Preoccupied attachment:* Significantly and positively related to all MBI-GS sub-scales (emotional exhaustion: *r* = .171, *p* < .01; cynicism: *r* = .147, *p* < .01; reduced efficacy: *r* = .159, *p* < .01) and total burnout scores (*r* = .201, *p* < .01). *Dismissive attachment:* Significantly and positively related to the MBI-GS cynicism sub-scale

			(*r* = .098, *p* < .05). Not significantly related with any other MBI-GS sub-scale or total burnout scores.
Zerach (2013)	Israeli residential child-care workers and educational boarding school workers. *Residential workers:* *n* = 147 53.1% male Age (*M* = 26.03 years, *SD* = 4.02 years) *Boarding school workers:* *n* = 74 55.4% female Age (*M* = 26.86 years, *SD* = 3.80 years)	Cross-sectional, survey ProQOL ECR	*Attachment anxiety:* Significantly and positively related to secondary trauma (*r* = .49, *p* < .00) and burnout (*r* = .34, *p* < .00). Significantly and negatively related to compassion satisfaction (*r* = -.29, *p* < .00). Significantly predicted secondary trauma (ß = .32, *p* < .00) and burnout (*ß* = .18, *p* < .00). *Attachment avoidance:* Not significantly related to secondary trauma. Significantly and positively related to burnout (*r* = .29, *p* < .00). Significantly and negatively related to compassion satisfaction (*r* = -.29, *p* < .00). Significantly predicted burnout (*ß* = .16, *p* < .01) and compassion satisfaction (*ß* = -.20, *p* < .01).

Design.

Twenty-four studies employed cross-sectional designs, administering measures at a single time-point. One study (Pardess et al., 2014) used a diary-method and an experimental design, in addition to their preliminary cross-sectional study. One study (Ronen & Baldwin, 2010) used a longitudinal design, distributing questionnaires at two time-points. Twenty-five studies recruited participants on a self-selection basis (this information is not provided by Marmaras et al., 2003). Twenty-three studies did not offer financial incentive for participation. One study offered entry to a cash prize draw (Schirmer & Lopez, 2001) and two offered cash incentives to participants (Chopik, 2015; Maunder et al., 2006).

Population characteristics and sample size.

Where reported (*n* = 19), mean age of employees ranged from 24.34 to 59.83 years. Most samples were predominantly female (*n* = 23); average proportion of female participants (*n* = 25) was 69.8%.

A broad range of professions were represented. The most common groups were nurses (*n* = 5) and other health care-professionals, including mental health and social workers (*n* = 12). Four studies report results from heterogeneous employee samples.

Participants from diverse geographical locations were represented. More than one third of studies (*n* = 10) recruited participants from Israel, a further seven from the United States (one study recruited from both Israel and America), three from Canada, three from England, two from Italy and one each from Portugal and Belgium. Ethnicity information was rarely provided but where available (*n* = 5), samples were predominantly Caucasian.

Sample sizes ranged from 33 to 1624 (mean was 243.63).

Measures.

Burnout.

Most articles assessed burnout (*n* = 22), with the majority using the MBI (Maslach & Jackson, 1981, 1996) in both its original format (*n* = 7), designed to assess burnout amongst helping professionals, and its general survey format (MBI-GS; Schaufeli, Leiter, & Maslach, 1996; *n* = 7), which measures burnout amongst non-helping professionals. The MBI consists of 22 items, comprising three sub-scales (emotional exhaustion, depersonalisation and personal accomplishment). It is widely used and demonstrates high reliability and validity. A meta-analysis of studies using the MBI found average Cronbach's alpha coefficients of .88, .71 and .78 for the sub-scales respectively (Aguayo, Vargas, Fuente, & Lozano, 2011). The MBI-GS also consists of three-subscales (exhaustion, cynicism and professional efficacy). It contains fewer items (16) than the MBI but exhibits high reliability across studies. Schutte, Toppinen, Kalimo, and Schaufeli (2000) found Cronbach's alpha values of .86, .75 and .83 for the respective sub-scales in a large, international sample (n = 9055). High levels of emotional exhaustion, depersonalisation/cynicism and reduced sense of personal accomplishment/professional efficacy indicate presence of burnout (Maslach, Schaufeli, & Leiter, 2001).

Three studies used the Shirom-Melamed Burnout Measure (SMBM; Shirom, 1989, 2003), which assesses physical fatigue and cognitive weariness, although an updated version also measures emotional exhaustion. Shirom and Melamed (2006) report high Cronbach's alpha values for the SMBM (.92).

Other measures of burnout used include the Burnout Measure (BM; Pines & Aronson, 1988; *n* = 1) and the Burnout Measure-Short Version (BM-SV; Malach-Pines, 2005; *n* = 1). Schaufeli, Enzmann, and Girault (1993) report that the BM is reliable, quoting alpha coefficients of around .91. The BM-SV reduced the original 21 BM items

to ten and Malach-Pines reports an alpha coefficient of .85 for this condensed version. Shirom and Ezrachi (2003) challenge the validity of the unidimensional approach to burnout employed within these measures, arguing that burnout "is clearly multidimensional" (p17). Qiao and Schaufeli (2011) compared the convergent validity of the MBI-GS, SMBM and BM, concluding that the MBI-GS is superior for assessment of burnout but that the SMBM and BM are acceptable for assessment of exhaustion, which forms part of the overall burnout syndrome.

Three studies used the Professional Quality of Life Scale (Pro-QOL; Stamm, 2009) to measure burnout. This was originally developed to assess compassion fatigue, therefore it is discussed below.

Compassion fatigue, compassion satisfaction and vicarious traumatisation.

Four articles used the Pro-QOL to measure compassion fatigue and compassion satisfaction. The Pro-QOL originates from the Compassion Fatigue Self-Test for Psychotherapists (Figley, 1995), which comprised two sub-scales: burnout and secondary trauma. This was extended to include a compassion satisfaction sub-scale (Stamm & Figley, 1996) and was renamed the Pro-QOL. The most up-to-date version consists of 30 items, ten per sub-scale. Stamm (2010) reports alpha coefficients of .81 (secondary trauma), .75 (burnout) and .88 (compassion satisfaction).

One study assessed vicarious traumatisation using the Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1995), which exhibits high internal consistency, with alpha coefficients ranging from .79 to .92 (Weiss & Marmar, 1995).

Occupational stress.

Two articles investigated occupational stress. One used the Nursing Stress Scale (NSS; Gray-Toft & Anderson, 1981), consisting of 34 items and demonstrating good internal consistency (.89). The other used the Work Stress Inventory (WSI;

Barone, Caddy, Katell, Roselione, & Hamilton, 1988), a 40-item measure of organisational stress and job risk, with high internal consistency (alpha coefficients ranged from .84 to .90).

Attachment.

The most frequently employed measure of adult attachment was the Experiences in Close Relationships scale (ECR; Brennan et al., 1998). The ECR was developed from factor analysis of numerous existing attachment measures, yielding an instrument with two 18-item sub-scales: attachment anxiety and attachment avoidance. It has been used extensively in research, with alpha coefficients typically around .90 (Mikulincer & Shaver, 2007a). Due to its impressive validity, high performance cross-culturally and ability to be adapted to assess attachment generally or within romantic relationships, it is regarded as a benchmark for evaluation of alternative measures (Mikulincer & Shaver, 2007a). Numerous other measures of attachment were employed, detailed in Table 3.

Table 3

Measures of adult attachment in reviewed studies

Measure	Studies Used	Description	Reliability
Experiences in Close Relationships scale (ECR); Brennan, Clark, & Shaver, 1998	Hawkins et al. (2007) Lavy (2014) Littman-Ovadia et al. (2013) Pardess et al. (2014)* Reizer* (2015) Ronen & Baldwin (2010)* Ronen & Mikulincer (2009)* Ronen & Mikulincer (2012)* Schirmer & Lopez (2001) Zerach (2013)	36 items loading onto two separate factors: attachment anxiety (18 items) and attachment avoidance (18 items). Items are rated on a 7-point Likert scale. Assesses how respondents feel generally in close relationships.	Reported Cronbach's alpha values ranged from .78 to .95 (anxiety) and .79 to .94 (avoidance)
Experiences in Close Relationships scale-revised (ECR-R); Fraley, Waller, & Brennan, 2000	Kokkonen et al. (2014) Maunder et al. (2006) Racanelli (2005)	As for the ECR but with slightly different individual items.	Not reported.
Experiences in Close Relationships –short form (ECR-S); Wei, Russell, Mallinckrodt, & Vogel, 2007	Chopik (2015)	As for the ECR but with 12 items in total (six per sub-scale).	Reported Cronbach's alpha values: .77 to .79 (anxiety) and .86 (avoidance)

Attachment Style Questionnaire (ASQ); Feeney, Noller, & Hanrahan, 1994	Burrell et al. (2009) Ostacoli et al. (2010)	40 items loading onto five factors: discomfort with closeness, confidence in self, need for approval, preoccupation with relationships and relationships as.secondary. Designed to assess general attachment security, rather than romantic. Items are rated on a 6-point Likert scale	A two-factor structure was identified by Burrell et al. Cronbach's alpha values for attachment anxiety: .80 to .89, for attachment avoidance: .81 to .88
Adult Attachment Scale (AAS); Collins & Read, 1990	Gama et al. (2014)	18 items rated on a 5-point Likert scale, comprising three sub-scales: anxiety, closeness and dependence	Not reported.
Adult Attachment Questionnaire (AAQ); Simpson, Rholes & Nelligan, 1992; Simpson, Rholes, & Phillips, 1996	Tosone et al. (2010)	17 items loading onto two separate factors: ambivalence (nine items) and avoidance (eight items). Adapted from Hazan & Shaver's (1987) vignettes.	Reported Cronbach's alpha values: .79 (ambivalence) and .80 (avoidance).
Relationship Scales Questionnaire (RSQ); Griffin & Bartholomew, 1994	Halpern et al. (2012)	30 items rated on a 5-point Likert scale, loading onto four factors: secure, fearful, preoccupied and dismissing attachment.	Reported Cronbach's alpha values: .46 (secure), .70 (fearful) .32 (preoccupied), .51 (dismissive).
Relationship Questionnaire (RQ); Bartholomew & Horowitz, 1991	Marmaras et al. (2003) Schirmer & Lopez, 2001) Vanheule & Declercq (2009)	Four item measure consisting of short paragraphs describing four attachment styles (secure, preoccupied, dismissing and fearful). Respondents are asked to rate their affiliation with each paragraph on a 7-point Likert scale.	Not reported.

Measure	Studies Used	Description	Reliability
The Attachment Measure (AM); Berry, Wearden, Barrowclough, & Liversidge, 2006)	Hartley et al. (2015)	16 items loading onto two factors: anxiety (eight items) and avoidance (eight items).	Reported Cronbach's alpha values: .89 (anxiety) and .85 (avoidance).
An adaptation of Hazan & Shaver's (1987) Adult Attachment Types Measure, (Mikulincer, Florian, & Tolmacz, 1990)	Pines (2004)	15 items loading onto three factors: secure, ambivalent and avoidant attachment style. Items are rated on a 7-point Likert scale	Reported Cronbach's alpha values ranged from .77 to .81.
Idiosyncratic measure of attachment based on Hazan & Shaver's (1987) classifications of attachment style and the Attachment Style Questionnaire (Feeney et al., 1994)	Falvo et al. (2012)	16 items loading onto three factors: secure, anxious and avoidant attachment style. Items are rated on a 7-point Likert scale.	Reported Cronach's alpha values: .61 (anxious), .72 (avoidant) and .78 (secure).
Short Workplace Attachment Measure (SWAM); Leiter, Price, & Day, 2013)	Leiter et al. (2015)	10 items loading onto two factors: anxiety (five items) and avoidance (five items). Assessed work-specific attachment.	Reported Cronbach's alpha values: .78 for anxiety & avoidance.
Self Reliance Inventory (SRI); Joplin, Nelson, & Quick, 1999	Simmons et al. (2009)	10 item sub-scale from the SRI used to assess secure attachment style in working adults.	Reported Cronbach's alpha value .81.

Note: *condensed version of ECR administered.

Results

The studies will be discussed in terms of their contribution to the exploration of associations between attachment orientation and burnout, secondary trauma and compassion satisfaction. Where available, proposed mechanisms accounting for these associations will be discussed. As attachment anxiety and attachment avoidance underpin the vast majority of adult attachment measures (Brennan et al., 1998), articles will be grouped and discussed according to these dimensions. Studies reporting specifically on a secure attachment style are discussed separately. Several papers utilised categorical measures of attachment and these will also be discussed separately.

Secure attachment and burnout, secondary trauma and compassion satisfaction.

Due to positive associations with effective coping resources (Buelow et al., 2002) and ability to seek support in times of stress (Mikulincer, Florian, & Weller, 1993), it may be hypothesised that secure attachment style offers protection against burnout and compassion fatigue. Accordingly, six of the seven articles exploring secure attachment style found significant negative relationships between burnout and secure attachment. This relationship is credible as all six studies used different measures of burnout and attachment. Simmons et al. (2009) utilised the secure attachment sub-scale from the SRI and the SMBM. Pines (2004) used the BM to assess burnout and Mikulincer et al.'s (1990) adaptation of Hazan and Shaver's (1987) Adult Attachment Types measure. Falvo et al. (2012) also based their assessment of attachment on Hazan and Shaver's (1987) conceptualisation, and using the MBI-GS, observed a significant negative association between attachment security and the MBI-GS cynicism sub-scale (but not with the emotional exhaustion sub-scale). Gama et al. (2014), using the MBI and AAS, observed significant negative associations between secure attachment and the emotional exhaustion and depersonalisation MBI sub-

scales. Personal accomplishment was significantly positively related to secure attachment style. Similarly, Vanheule and Declercq (2009), found secure attachment to be negatively associated with all MBI-GS sub-scales (the personal efficacy sub-scale was scored so that higher scores reflected lower efficacy in this study). Furthermore, secure attachment moderated the relationship between critical incidents (defined as extreme, unexpected situations) and burnout, with greater security reducing burnout in cases where a critical incident was identified. Finally, Marmaras et al. (2003) observed a significant negative correlation between secure attachment and vicarious traumatisation using the RQ and the IES-R.

Notably, although not specifically investigating associations between secure attachment and compassion fatigue, Pardess et al. (2014), using the Pro-QOL and ECR, experimentally demonstrated the protective value of secure attachment against compassion fatigue. Participants were assigned to either a secure prime (asked to visualise a loving, supportive person) or neutral prime (asked to visualise an acquaintance from the participant's neighbourhood) condition. When compared with the neutral prime, secure priming significantly reduced self-reported prospective burnout and secondary trauma and increased prospective compassion satisfaction. Although use of an experimental design is commendable, it should be considered that burnout, secondary trauma and compassion satisfaction were prospective and based on a hypothetical scenario. Respondents may not be able to accurately report their future likelihood of burnout/secondary trauma.

Despite this persuasive evidence, there are limitations to these studies. It is unclear why Simmons et al. (2009), Pines (2004) and Falvo et al. (2012) chose their respective measures of attachment when there are alternative instruments exhibiting excellent psychometric properties available. In terms of burnout measurement, Simmons et al. combined all items of the SMBM to form one composite score of burnout, and Pines employed a unidimensional measure (the BM). Shirom and Ezrachi

(2003) argue strongly that burnout is a multidimensional construct, meaning these results should be treated with caution. Falvo et al. administered only two of three MBI-GS sub-scales, which may result in loss of meaningful data. Additionally, Marmaras et al. (2003) used the IES-R (Weiss & Marmar, 1995), a measure of PTSD, to assess vicarious traumatisation. Although the IES-R has been used to assess compassion fatigue in previous research (Bride et al., 2007), Figley argues that PTSD is distinct from secondary traumatic stress disorder/compassion fatigue (Figley, 1995), potentially challenging these findings.

All of the studies finding significant negative associations between secure attachment and burnout/compassion fatigue/vicarious traumatisation report gender biased samples. All but one sample was predominantly female, ranging from 77% (Falvo et al., 2012) to 100% female (Marmaras et al., 2003). In contrast, Vanheule and Declercq (2009), report an overwhelmingly male sample (85.4%). Although this may reflect the gender imbalance in their respective professions, evidence indicates that females are at higher risk of developing compassion fatigue (Sprang, Clark, & Whitt-Woosley, 2007), therefore the uneven gender splits in these studies restrict their generalisability.

Only one study failed to find a significant relationship between burnout and attachment security. In a sample of hospice nurses, Hawkins et al. (2007) found no significant differences in work-related stress between securely and insecurely attached individuals. Perhaps stress of hospice work was offset by the rewards associated with this role. Results should be treated with caution however as ECR scores were used to categorise participants as in/secure, which is not recommended (Fraley & Waller, 1998). Furthermore, as this study assessed occupational stress as opposed to burnout/compassion fatigue, ability to draw comparisons with other research is limited.

In summary, available research indicates a robust relationship linking secure attachment with lower levels of burnout. Suggestions of factors which may influence the strength of this relationship include perceptions of others as available and willing to help in times of need (Pines, 2004), as well as effective use of social support (Simmons et al., 2009). Alternatively, the positive self-directed IWMs associated with secure attachment may increase confidence in one's own ability to contain negative emotions, reducing felt perceptions of burnout (Falvo et al., 2012).

Attachment anxiety and burnout, secondary trauma and compassion satisfaction.

Attachment anxiety has been empirically linked with emotional lability, hyper-sensitivity (Wei, Vogel, Ku, & Zakalik, 2005) and low self-efficacy (Wei, Russell, & Zakalik 2005). Increased attachment anxiety has also been linked with higher personal distress in the presence of others' suffering, which is often not translated into helpful behaviour (Mikulincer, Shaver, Gillath, & Nitzberg, 2005). Taken together, this suggests that individuals high in attachment anxiety may struggle to manage negative affect associated with work-related difficulties, increasing vulnerability towards burnout and compassion fatigue. If unable to help others who are suffering, this may also hinder development of compassion satisfaction. It follows therefore, that attachment anxiety may be positively associated with burnout and compassion fatigue, and negatively related to compassion satisfaction.

Four studies used the Pro-QOL to investigate associations between attachment anxiety and secondary trauma; three of these studies also assessed burnout and compassion satisfaction. Amongst a sample of trauma-specialist mental health clinicians, greater attachment anxiety predicted significantly higher burnout and significantly lower compassion satisfaction (Racanelli, 2005). Secondary trauma was not significantly associated with attachment anxiety in this sample, which contrasts with the findings of Zerach (2013). Using similar measures, Zerach found that attachment

anxiety was significantly related to all Pro-QOL sub-scales, positively with secondary trauma and burnout, and negatively with compassion satisfaction. Furthermore, in hierarchical regression analyses, attachment anxiety significantly predicted secondary trauma and burnout. Interestingly, Zerach found that personal traumatic experiences significantly contributed to secondary trauma, but upon inclusion of attachment anxiety, this association weakened. Zerach suggested that lack of confidence in one's ability to cope with stressful situations inherent in attachment anxiety, may mediate the association between personal traumatic experiences and secondary trauma.

The significant positive relationship between burnout and attachment anxiety is consistent, as Pardess et al. (2014), in their sample of voluntary trauma workers, also observed this result across all three of their studies. Attachment anxiety was similarly related to secondary trauma, although this failed to reach significance in study 2. Associations between attachment anxiety and secondary trauma were not moderated by perceived support availability. Attachment anxiety was not significantly related to compassion satisfaction. It should be noted however that secondary trauma and compassion satisfaction were assessed using only two items each in studies 2 and 3, although Cronbach's alpha values were adequate for these condensed sub-scales (ranging from .71 to .78). In study 3, the shortened Pro-QOL was also re-phrased in order to assess prospective compassion fatigue. This has not yet been empirically validated so results should be treated with caution. Additionally, only the first 18 items of the ECR were used across all Pardess et al.'s studies. Whilst Cronbach's alphas were adequate (ranging from .80 to .94), it is unclear why the full scale, which has considerable empirical support was not administered. As this study involved voluntary trauma workers, results may not be generalizable to paid employees. Such populations may include a 'double selection bias' as participants are engaged in voluntary work, as well as volunteering to take part in the research.

Despite recommendations against use of individual Pro-QOL sub-scales (Stamm, 2010), Tosone et al. (2010) administered only the secondary trauma sub-scale to their sample of social workers who were in practice at the time of the 9/11 terrorist attacks. Attachment anxiety correlated significantly and positively with secondary trauma, explaining 2.2% of the total variance in secondary trauma scores. This association remained after controlling for experience, time spent with clients and whether or not the individual witnessed the 9/11 attacks directly. Tosone et al. acknowledge the limited generalisability of their findings as their sample consisted predominantly of older, female Jewish clinicians.

Studies employing the Pro-QOL demonstrate reliable positive correlations between attachment anxiety and burnout. Various alternative measures of burnout were used in the reviewed articles, the most common of which was the MBI/MBI-GS. Ten of the 11 studies using this instrument found significant associations between attachment anxiety and burnout, with the only totally non-significant finding coming from Falvo et al. (2012) who administered only the MBI-GS emotional exhaustion and cynicism sub-scales. It is regarded as inappropriate to assess exhaustion independently of the other components of burnout (Maslach et al., 2001), as meaningful context is lost. Despite this warning, Maunder et al. (2006) also chose not to administer the full MBI to their sample of hospital workers employed during the SARS outbreak. In contrast to Falvo et al. (2012) however, Maunder et al. observed a significant and positive relationship between attachment anxiety and emotional exhaustion.

Despite administering all MBI-GS sub-scales, Littman-Ovadia et al. (2013) reported burnout as the total MBI-GS score, preventing comparison of individual sub-scale scores. In their sample of Israeli employees, attachment anxiety significantly and positively correlated with burnout. Generalizability of these results may be high as the

sample were balanced according to gender (50.6% female) and comprised employees from a range of occupational backgrounds.

All other authors employing the MBI/MBI-GS in their research reported all sub-scale scores and of these, only one study reported a non-significant relationship between attachment anxiety and any of the three sub-scales. Hartley et al. (2015), in their sample of mental health workers, found that attachment anxiety correlated significantly and positively with emotional exhaustion and depersonalisation, but did not correlate significantly with personal accomplishment. Notably, the MBI exhibited uncharacteristically low Cronbach's alpha levels in this study (.55 to .67), which may be a consequence of a small sample size.

The remainder of studies using the MBI/MBI-GS to assess burnout observed significant associations between attachment anxiety and all three MBI/MBI-GS sub-scales; positive with emotional exhaustion and depersonalisation/cynicism, and negative with personal accomplishment/professional efficacy. This pattern of results has been observed across a range of professional backgrounds and geographical locations, including home visitors in Hawaii (Burrell et al., 2009), Portuguese nurses working in end-of-life care (Gama et al., 2014), Israeli business workers (Ronen & Mikulincer, 2012) and nurses working within inpatient dementia wards (Kokkonen et al., 2014).

In a sample of Israeli private-sector employees, positive associations between attachment anxiety and burnout were partially mediated by perceived team cohesion (Ronen & Mikulincer, 2009). Participants were recruited from a range of professional backgrounds and the sample was reasonably well balanced in gender (60% female), increasing generalisability of results.

Potential criticisms of the research reviewed concerns the predominance of cross-sectional designs and a tendency for self-report attachment measures to focus

on close family or romantic relationships. In an attempt to circumvent the former of these issues, Ronen and Baldwin (2010) conducted a prospective-longitudinal study, exploring the predictive ability of attachment anxiety on future self-reported burnout. In a sample of hotel employees, higher attachment anxiety at Time 1 was significantly associated with greater exhaustion, greater cynicism and reduced professional efficacy at both Time 1 and Time 2 (one month later). Attachment anxiety predicted future burnout but this relationship was fully mediated by hypersensitivity to social rejection. Of note, only the ECR anxiety sub-scale was administered. Although Cronbach's alpha was high (.90), the ECR has been validated for use as an entire scale so it may be that once teased apart, individual sub-scales lose some context. Additionally, hypersensitivity was measured using a novel scale, the validity of which was unknown.

In an attempt to challenge the second criticism outlined above, Leiter et al. (2015) administered the Short Workplace Attachment Measure (SWAM; Leiter, Price, & Day, 2013) in their study of burnout. The SWAM was built upon existing attachment instruments but makes direct reference to relationships at work. In a sample of healthcare workers, attachment anxiety correlated significantly and positively with emotional exhaustion and cynicism and significantly and negatively with professional efficacy. Whilst this result is interesting, administration of an additional, established measure of attachment could have facilitated meaningful comparisons with other research and provided an opportunity to further test the validity of the SWAM.

Whilst studies employing the MBI/MBI-GS offer persuasive evidence of positive associations between attachment anxiety and burnout, one limitation of these papers includes use of condensed, translated versions of the ECR (Ronen & Mikulincer, 2009; Ronen & Mikulincer, 2012) or administration of only one ECR sub-scale (Ronen & Baldwin, 2010). Although reported Cronbach's alpha levels were high for these sub-scales, they were not as high as the original version (Brennan et al., 1998) and have not received the same extensive empirical support as the full scale.

Using alternative measures of burnout, results are largely consistent with those reported above. For example, in a sample of employees recruited via Amazon's Mechanical Turk (an online forum whereby 'requesters' seek individuals to complete 'jobs', such as surveys, for money), attachment anxiety was significantly and positively associated with all three SMBM sub-scales (physical fatigue, emotional exhaustion and cognitive weariness; Chopik, 2015). However, as respondents were recruited via an anonymous online forum and were paid for their participation, it is difficult to evaluate reliability of these findings. Additionally, the ECR-S was administered which has not been empirically validated as extensively as the ECR. Similarly, in a sample of Israeli employees from a range of professions (Reizer, 2015) and using a shortened (16 items) Hebrew translation of the ECR and the SMBM, Reizer observed a significant and positive correlation between attachment anxiety and burnout.

Using the BM and Mikulincer et al.'s (1990) adaptation of the Adult Attachment Types measure, Pines (2004) observed a significant positive association between attachment anxiety and burnout in a sample of Israeli nurses. However, using the BM-SV, a condensed version of the BM, attachment anxiety failed to significantly correlate with burnout in a sample of Israeli call centre employees (Lavy, 2014). The BM-SV has been criticised for its unidimensional conceptualisation of burnout (Shirom & Ezrachi, 2003), although Malach-Pines (2005) reports good reliability.

Finally, Schirmer and Lopez (2001) used the WSI to assess associations between work stress intensity and attachment anxiety. In a sample of University employees, higher attachment anxiety uniquely predicted greater work stress intensity.

In summary, few studies have explored associations between attachment anxiety and compassion satisfaction to date, but there is a trend towards negative associations between the two. There is a robust positive association between burnout and attachment anxiety however. Secondary trauma shows a similar trend but to date,

fewer authors have explored this association. Various mechanisms to explain these relationships have been proposed. Ronen and Mikulincer (2009) theorise that high attachment anxiety predisposes towards perceptions of low team cohesion at work. As anxiously attached individuals fear lack of acceptance from others, team cohesion is regarded as a valuable asset. When perceived cohesion is low, this is interpreted as an interpersonal threat, initiating heightened stress and increasing risk of burnout.

Several authors propose that maladaptive coping strategies, such as rumination and emotion-focused coping, are pivotal in the development of burnout/compassion fatigue amongst those high in attachment anxiety (Kokkonen et al., 2014; Reizer, 2015; Pines, 2004; Ronen & Mikulincer, 2009). In line with evidence that attachment anxiety is associated with high personal distress when others are suffering (Mikulincer et al., 2005), Pardess et al. (2014) propose that highly anxiously attached individuals engage in efforts to self-regulate under conditions of heightened personal distress. This interferes with effective care-giving, exacerbating the experience of burnout and secondary trauma. This might occur through increased depersonalisation of clients/patients and emotional exhaustion through chronic efforts to regulate one's own distress.

Pines (2004) offers a psychodynamic existential view of the relationship between burnout and attachment anxiety. According to this view, workers enter their profession in an attempt to derive satisfaction from their contribution and to heal their own unresolved childhood issues. Pines conjectures that when anxiously attached individuals feel they have failed to make significant contributions, or when work replicates their childhood difficulties, self-directed IWMs facilitate negative appraisals of the situation and promote use of maladaptive coping strategies, increasing risk of burnout. This fits with Zerach's (2013) findings relating to personal trauma histories. Zerach surmised that individuals high in attachment anxiety are less able to effectively manage their own trauma histories, increasing susceptibility to secondary trauma when

working with traumatised others. This pattern also corresponds with Figley's (2002) model, which attributes significance to one's own traumatic memories in the development of compassion fatigue.

Leiter et al. (2015) offer an explanation of their results based around perceptions of incivility at work, with incivility left undefined since it is highly subjective. Individuals high in attachment anxiety were more likely to perceive other's behaviour as uncivil, than those low in attachment anxiety (Leiter et al.). The authors conclude that highly anxiously attached people tend to seek close relationships but that due to their high perceptions of incivility, interpersonal interactions become a source of stress and ultimately lead to burnout. This is an interesting proposition that corresponds with Maslach and Leiter's (1997) model of burnout in terms of mismatches in the areas of community and social reward.

In order to account for their observation that associations between attachment anxiety and prospective burnout were fully mediated by hypersensitivity to social rejection, Ronen and Baldwin (2010) draw on Sociometer Theory (Leary & Downs, 1995; Leary & Baumeister, 2000). This theory posits that humans have an inbuilt mechanism for monitoring their environments for signs of social acceptance and rejection. It is proposed that this mechanism is variably sensitive, so that some people are more sensitive to social cues than others. It is theorised that individuals high in attachment anxiety have hypersensitive sociometers, and that chronic attention towards potential social threat, combined with hopeless cognitions and negative perceptions of own one's ability to manage social rejection, increases risk of burnout. If accurate, this theory appears to substantiate Leiter et al.'s idea that interpersonal relationships are sought, but ultimately become a source of stress leading to burnout.

Despite few findings relating to compassion satisfaction, it is worth mentioning that Pardess et al. (2014) offer an explanation for the absence of negative associations

with attachment anxiety. They argue that an anxiously attached individual's apparent comfort with relational closeness and desire to be appreciated by others, leads them to engage in caregiving behaviours, preventing negative associations between the two constructs.

To conclude, potential mechanisms to explain associations between attachment anxiety with burnout and secondary trauma include perceptions of limited team cohesion, hypervigilance to signs of rejection and negative self-directed IWMs that prescribe ineffective coping mechanisms in times of stress and which reduce an individual's capacity to tolerate their own personal distress.

Attachment avoidance and burnout, secondary trauma and compassion satisfaction.

Evidence indicates that individuals high in attachment avoidance tend not to seek support in times of stress (Collins & Feeney, 2000). Attachment avoidance is also associated with a strong inclination towards interpersonal distance (Rowe & Carnelley, 2005) and suppression of negative cognitions and affect (Edelstein & Gillath, 2008). Furthermore, attachment avoidance has been linked with lower levels of empathy, compassion and personal distress (Mikulincer et al., 2001), and with less willingness to help when others are distressed (Mikulincer et al., 2005). Based on these findings, arguments for and against attachment avoidance predisposing towards burnout/compassion fatigue could be equally plausible. For example, interpersonal and emotional distancing may induce problems in the workload area of Maslach and Leiter's (1997) model of burnout, if employees are unable to communicate with others in order to share difficult tasks. Conversely, lower levels of compassion and empathy, alongside interpersonal disengagement may defend against the negative effects of exposure to traumatised clients (Figley, 2002). The identified articles were explored with a view to clarifying this issue.

Studies employing the Pro-QOL discussed earlier also investigated associations between attachment avoidance and burnout, secondary trauma and compassion satisfaction. However, relative to attachment anxiety, results were less clear. Higher attachment avoidance significantly predicted greater burnout and lower compassion satisfaction, but was not significantly related to secondary trauma in Zerach's (2013) sample of child-care workers. Similarly, in Racanelli's (2005) sample of mental health clinicians, attachment avoidance significantly and positively correlated with burnout but failed to significantly correlate with secondary trauma. However, dissimilarly to Zerach's findings, attachment avoidance was not related to compassion satisfaction. In contrast, Tosone et al. (2010) reported a significant positive association between attachment avoidance and secondary trauma in their sample of social workers. After controlling for time spent working with trauma clients, years of experience and whether or not the respondent had witnessed the 9/11 attacks directly, attachment avoidance explained 4.6% of the variance in secondary trauma scores. Tosone et al. administered only the Pro-QOL secondary trauma sub-scale, preventing further comparison with other studies. Pardess et al (2014) also obtained mixed results using the Pro-QOL. Whilst attachment avoidance significantly and negatively correlated with compassion satisfaction, attachment avoidance was not significantly associated with burnout or secondary trauma.

Contrary to findings for attachment anxiety, which were largely consistent across studies, observed associations between attachment avoidance and burnout are contradictory. For example, using the MBI/MBI-GS, some researchers report non-significant associations between attachment avoidance and all sub-scales (Burrell et al., 2009; Hartley et al., 2015), whereas others have observed significant positive relationships between attachment avoidance and all sub-scales, professional efficacy being scored so that higher scores denote reduced efficacy (Ronen & Mikulincer, 2012; Ronen & Mikulincer, 2009). In Ronen and Mikulincer's studies (2009; 2012), higher

attachment avoidance significantly predicted greater burnout, although this association was fully mediated by perceived organisational fairness in the 2009 study.

Also using the MBI-GS, Littman-Ovadia et al. (2013) reported a significant positive association between attachment avoidance and the total of all MBI-GS sub-scales. Contrary to their hypothesis, Littman-Ovadia et al. found that under conditions of high autonomy, greater attachment avoidance was associated with higher burnout. When job autonomy was low however, there were no significant differences between high- and low-avoidance participants. Although the diversity in professions in this sample improves generalisability of results, it also limits ability to draw firm conclusions as employees may be differentially affected by job autonomy dependent upon their work. Replication with large samples of specific professional groups may be useful in further exploring this idea.

Other researchers report mixed findings using the MBI/MBI-GS. In their sample of dementia nurses, Kokkonen et al., (2014) found that attachment avoidance significantly and positively correlated with the MBI emotional exhaustion and depersonalisation sub-scales, but failed to significantly correlate with personal accomplishment. In contrast, Leiter et al. (2015), in their study of healthcare workers observed the opposite pattern: attachment avoidance was significantly negatively correlated with professional efficacy, but did not relate significantly to emotional exhaustion or cynicism.

The conflicting pattern of results associated with the MBI/MBI-GS is further complicated by the fact that some authors did not administer all sub-scales. Falvo et al. (2012) administered the emotional exhaustion and cynicism MBI-GS sub-scales to their sample of nurses; attachment avoidance correlated significantly and positively with both sub-scales. Maunder et al. (2006) in their study of healthcare workers,

administered only the emotional exhaustion MBI sub-scale, finding no significant association with attachment avoidance.

Using alternative measures of burnout, results continue to be ambiguous. Pines (2004) administered the BM to her sample of nurses, observing a significant and positive relationship between attachment avoidance and burnout. However, using a shortened version of the BM (the BM-SV), Lavy (2014) found that attachment avoidance was not significantly associated with burnout. Whilst this might reflect a genuine absence of a relationship within this sample, no other study reviewed here that assessed both attachment anxiety and attachment avoidance, failed to find any significant associations with burnout, adding weight to the argument that the BM-SV is not ideal to assess burnout (Shirom & Ezrachi, 2003).

Two studies employed the SMBM in their assessment of burnout; both identified significant positive associations between attachment avoidance and burnout (Chopik, 2015; Reizer, 2015). However, using the WSI, Schirmer and Lopez (2001) found no significant correlation between attachment avoidance and work stress intensity.

In summary, reports of associations between attachment avoidance and burnout are inconsistent and this is reflected in conflicting explanations for observed relationships between these constructs. For example, it is proposed that under conditions of high job autonomy, individuals high in attachment avoidance are free to engage in their default defence mechanisms (e.g., distancing, avoidance and suppression), which are associated with negative outcomes, including burnout (Littman-Ovadia et al., 2013). Under conditions of low autonomy, such individuals experience greater supervision and control, which restricts opportunity to use characteristic defence strategies, inadvertently reducing risk of burnout. Conversely, Kokkonen et al. (2014) argue that individuals high in attachment avoidance use emotional distancing to cope with others' distress, but that in the presence of chronic

stress, this defence breaks down, increasing vulnerability to burnout. Kokkonen et al.'s claim fits with Figley's (2002) model of compassion fatigue, a key feature of which is disengagement. As long as highly avoidant individuals can distance themselves from others' emotional distress, they will be somewhat protected from compassion fatigue (which includes burnout), but if this defence fails, risk of compassion fatigue/burnout increases. To summarise, Littman-Ovadia et al. (2013) propose that maladaptive coping mechanisms themselves increase risk of burnout, whereas Kokkonen et al. argue that it is only when these mechanisms fail that burnout develops.

In Ronen and Mikulincer's (2009) study, the relationship between attachment avoidance and burnout was fully mediated by perceived organisational fairness. To explain this, the authors contend that negative other-directed IWMs characteristic of attachment avoidance predispose towards negative appraisals of organisational fairness, which in turn increases vulnerability to burnout. Zerach (2013) supports this hypothesis, stating that individuals high in attachment avoidance tend not to interact with colleagues so much as those low in attachment avoidance. Zerach argues that this predisposes such individuals towards perceptions of unfairness in the workplace that may lead to increased burnout and reduced compassion satisfaction. These arguments are in line with Maslach and Leiter's (1997) model, which positions perceptions of fairness as a key component in burnout development.

Pines (2004) also cites negative other-directed IWMs in her explanation of associations between attachment avoidance and burnout, arguing that these predispose towards pessimistic appraisals of burnout-inducing situations. Combined with ineffective coping mechanisms, such as cognitive and affective avoidance, and with the failure of work to meet initial unrealistic expectations regarding resolution of one's own trauma, risk of burnout is elevated.

To explain significant associations between attachment avoidance and reduced compassion satisfaction, Pardess et al. (2014) propose that individuals high in attachment avoidance distance themselves from others at work, inadvertently restricting opportunities to experience positive emotions, such as warmth, compassion and a sense of personal achievement. This corresponds with Maslach and Leiter's (1997) model of burnout, which emphasises the importance of social rewards and a sense of community at work.

Drawing these findings together, mechanisms proposed to explain associations between attachment avoidance and burnout, secondary trauma and compassion satisfaction include other-directed IWMs that predispose towards negative appraisals of work-related situations and perceived unfairness in the workplace, as well as ineffective coping mechanisms. The exact relationship between such coping strategies and burnout/compassion fatigue is unclear; some authors view defence mechanisms characteristic of attachment avoidance as protective factors, whereas others see them as a contributory factor towards development of burnout/compassion fatigue.

Categorical measurement of attachment.

As results relating to secure attachment have already been discussed, this section explores insecure attachment styles only. Several of the reviewed studies used categorical measures of attachment style based on Hazan and Shaver's (1987) work on romantic relationships. However, Brennan et al. (1998) demonstrated that most self-report measures of attachment can be broken down into the two dimensions of attachment anxiety and attachment avoidance. Accordingly, when viewed in this manner, results from studies employing categorical measures of attachment appear consistent with those reviewed above.

For example, in Gama et al.'s (2014) sample of end-of-life care nurses, anxious attachment was positively and significantly correlated with the MBI emotional

exhaustion and depersonalisation sub-scales, and significantly negatively associated with personal accomplishment. It is unclear why Gama et al. reported on attachment categorically as the AAS is a dimensional measure (Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010).

Using the IES-R and the RQ, Marmaras et al. (2003) observed that preoccupied (characterised by high attachment anxiety and low attachment avoidance), dismissive (high attachment avoidance and low attachment anxiety) and fearful (high attachment anxiety and high attachment avoidance) attachment styles significantly predicted greater intrusion, hyperarousal and avoidance symptoms, collectively denoting vicarious traumatisation.

Schirmer and Lopez (2001) assessed attachment categorically using the RQ, as well as with a continuous measure (ECR). Due to a small proportion of participants categorised as preoccupied, this category was combined with the fearful group in analyses. Both the reconstituted 'anxious' group and dismissively attached respondents exhibited similarly low perceptions of available supervisory support. However, the 'anxious' group scored significantly higher on the WSI, suggesting that individuals high in attachment anxiety may be particularly susceptible to work stress under conditions of low perceived support. The decision to combine preoccupied and fearful respondents in this study is questionable; although they may demonstrate similar levels of attachment anxiety, fearful attachment style is additionally characterised by high levels of attachment avoidance. Dismissive attachment style was not significantly related to work stress intensity.

Vanheule and Declercq (2009) found that preoccupied and fearful attachment styles were significantly and positively related to all MBI-GS sub-scales (professional efficacy was reverse scored in this study) and higher fearful attachment scores predicted greater burnout. Dismissive attachment style was significantly and positively

related to cynicism only, although it should be noted that this correlation, despite reaching statistical significance, was very small (r = .098).

Halpern et al. (2012) administered the RSQ to their sample of ambulance workers, but due to poor internal reliability, only the fearful category could be analysed. Fearful attachment was positively and significantly related to MBI emotional exhaustion scores (only this scale was administered). Maslach et al. (2001) argue that measurement of exhaustion independently risks losing context therefore these results should be treated with caution.

Finally, Ostacoli et al. (2010) explored burnout in a sample of oncology nurses. The ASQ 'discomfort with closeness' sub-scale significantly and positively predicted MBI emotional exhaustion scores and 'preoccupation with relationships' significantly and positively predicted depersonalisation. These ASQ sub-scales could be regarded as reflecting high levels of attachment avoidance and attachment anxiety respectively. Associations between burnout and the remaining ASQ sub-scales failed to reach significance. Sample size in this study was small given the number of predictor variables (nine).

To summarise, all studies reporting on attachment styles characterised by high attachment anxiety and low attachment avoidance found significant positive associations between this attachment style and burnout/vicarious trauma/work stress. Attachment styles characterised by high attachment avoidance and low attachment anxiety showed a similar, but less definitive pattern, as three out of four studies found positive associations between this attachment style and burnout, etc.

In terms of underlying mechanisms for these relationships, Marmaras et al. (2003) hypothesise that insecure attachment styles, typified by negative IWMs of self (preoccupied and fearful) and/or others (dismissive and fearful) and by less effective

affect regulation skills, are thought to predispose employees to vicarious trauma, although they do not elaborate on how this may occur.

Discussion

Main findings.

Collectively, the articles reviewed present strong evidence to suggest negative associations between secure attachment style and burnout. Proposed explanations for this relationship include positive self- and other-directed IWMs, which facilitate adaptive coping strategies, appropriate affect regulation and ability to utilise available support in times of difficulty.

Additionally, evidence strongly suggests a positive relationship between attachment anxiety and burnout/occupational stress, with only two of 19 studies failing to find any significant positive associations between them, and one study identifying mixed significant and non-significant results. Only one of four studies failed to find a significant positive relationship between attachment anxiety and secondary trauma. Three papers explored associations between attachment anxiety and compassion satisfaction: one failed to find a significant correlation and two observed significant negative associations.

Various mechanisms to explain associations between attachment anxiety and burnout, secondary trauma and compassion satisfaction have been discussed. These include hypersensitivity to rejection, perceptions of limited available support and low team cohesion, negative appraisals of one's ability to cope and maladaptive coping strategies. By-and-large, these mechanisms correspond with Maslach and Leiter's (1997) model of burnout and Figley's (2002) model of compassion fatigue.

Associations between attachment avoidance and burnout, secondary trauma and compassion satisfaction are less clear. Of the four papers exploring attachment avoidance and secondary trauma, one observed a significant positive relationship, with

all others reporting non-significant associations. Two of three papers investigating compassion satisfaction found significant negative associations with attachment avoidance. Seventeen papers reported on associations between attachment avoidance and burnout/occupational stress. Six reported non-significant results with total burnout and/or all burnout sub-scales. Two articles reported mixed significant and non-significant associations between attachment avoidance and MBI/MBI-GS sub-scales, and within this group, the specific sub-scales correlating significantly with attachment avoidance varied. Reasons for this disparity are unclear, although one possibility is that affect-regulation strategies typically employed by individuals high in attachment avoidance operate relatively effectively under conditions of low stress, but that in times of heightened or chronic stress, these strategies fail, leaving the individual vulnerable to burnout (Mikulincer & Shaver, 2007a). Perhaps then, respondents high in attachment avoidance may exhibit significantly different levels of burnout dependent upon their current stress levels. To test this hypothesis, the mediating effects of current stress could be investigated in future research.

Mechanisms proposed to account for the relationship between attachment avoidance and burnout, secondary trauma and compassion satisfaction include maladaptive coping strategies, such as emotional distancing, and negative other-directed IWMs that predispose towards pessimistic appraisals of others and perceptions of unfairness at work. These similarly fit with existing models of burnout (Maslach & Leiter, 1997) and compassion fatigue (Figley, 2002).

Six studies investigated associations between attachment orientation and burnout using categorical measures of attachment. In line with conclusions drawn above, anxious attachment style seems more strongly positively associated with burnout than avoidant attachment style. Of note, all studies reporting on fearful attachment style, characterised by high levels of attachment anxiety and high levels of attachment avoidance, observed significant positive associations with burnout. In view

of the stronger evidence for associations between attachment anxiety and burnout, perhaps the high levels of attachment anxiety within the fearful style predispose most strongly towards burnout.

In conclusion, evidence suggests that secure attachment offers protection from burnout/compassion fatigue. Attachment anxiety appears to increase vulnerability towards burnout/compassion fatigue and evidence relating to attachment avoidance is more disparate. There is insufficient evidence relating to compassion satisfaction to allow conclusions to be drawn concerning associations with attachment orientations at this stage.

Critical review.

Limitations of existing research.

The articles reviewed feature participants from a range of professional backgrounds and geographical locations, increasing generalisability of results. However, the terms burnout, compassion fatigue and vicarious traumatisation are used interchangeably in research, creating inconsistency and lack of conceptual clarity which may reduce reliability of these findings.

Furthermore, it is difficult to make comparisons between studies due to use of different measures for the constructs under evaluation. Nine different instruments were used to assess burnout (including occupational stress), compassion fatigue (including vicarious traumatisation), and compassion satisfaction. Thirteen different measures were used to assess attachment patterns (see Table 3). Some assessed attachment dimensionally, others categorically (and categories were not always the same). Several studies used translated scales, which may interfere with the precise meaning of items, potentially impacting on validity. Some authors chose to administer only one or two sub-scales of existing measures, against recommendations (Stamm, 2010; Maslach et al., 2001).

Virtually all studies employed cross-sectional designs, meaning that causality cannot be inferred from these results. Several studies investigated burnout, secondary trauma, compassion satisfaction and attachment as secondary variables and without longitudinal or experimental research, it is difficult to tease apart the relative contributions made by individual variables.

Females were over-represented in the articles within this review. Ethnicity information was rarely provided but where it was given, participants were predominantly Caucasian. Where reported, all studies recruited participants on a self-selection basis, introducing strong likelihood of selection bias.

Although some authors offer potential explanations of associations between the constructs under evaluation, many others did not. Further research is warranted to extend our understanding of the pathways via which attachment and burnout, secondary trauma and compassion satisfaction are related.

Finally, all studies employed self-report measures. Although extensive research attests to the validity of such measures (Mikulincer & Shaver, 2007a), they may be susceptible to social desirability bias and they assume that respondents are able to accurately report their own attachment style (Jacobvitz, Curran, & Moller, 2002), therefore comparison with results obtained from studies using alternative measures may be useful.

Limitations of current review.

Several limitations of the current review should be taken into account when considering the conclusions. Firstly, only published journal articles were included, potentially introducing a publication bias (Dickersin, 1990). The review search terms were selected based upon the author's prior reading, which may have biased judgement towards or against specific terms. Finally, attachment is a huge subject area and in deliberately taking a broad perspective of associations between attachment

orientations and burnout, secondary trauma and compassion satisfaction, important detail may have been overlooked. A narrower search strategy into specific aspects of attachment, such as support- or proximity-seeking behaviour may have produced more in-depth insight into this relationship.

Clinical implications.

Certain authors have suggested that the relationship between attachment orientation and burnout/compassion fatigue could have implications for recruitment. This seems potentially unethical, as it could lead to discrimination. Rather, knowledge gleaned from this review could be usefully employed to identify members of staff who are most vulnerable, due to their attachment orientation, and supplementary support, education and training could be offered.

Current findings suggest that it may be helpful for supervisors to monitor vulnerability towards burnout/compassion fatigue amongst employees. Individuals high in attachment anxiety may be particularly vulnerable and suggested mechanisms via which this susceptibility occurs include hypersensitivity to rejection and low self-efficacy. If supervisors are alert to the presence of high attachment anxiety, they may be able to support such workers in building confidence in their own ability and by remaining vigilant to their tendency to perceive rejection from others.

Additionally, where employees are high in attachment avoidance, supervisors could offer support through persisting in offers of help, as highly avoidant individuals may initially refuse such offers. Pardess et al.'s (2014) findings suggest that secure priming may reduce the negative effects of insecure attachment patterns. In establishing a strong professional alliance, supervisors may be able to act as a temporary secure base (Ainsworth, Blehar, Waters, & Wall, 1978), potentially reducing risk of burnout/compassion fatigue.

Conclusions.

Conclusions are framed according to the review objectives:

1) Research indicates that attachment orientation is associated with burnout, secondary trauma and compassion satisfaction amongst employees.

2) Despite methodological flaws in the reviewed articles, results are largely consistent across working populations, geographical locations and timeframes, particularly for secure attachment and attachment anxiety. Key limitations include variation in the conceptualisation of burnout and compassion fatigue and in the measurement of the constructs under investigation, as well as use of cross-sectional designs.

3) Mechanisms have been proposed to account for associations between the constructs under review. These emphasise that IWMs and associated maladaptive coping strategies may predispose individuals high in attachment anxiety and attachment avoidance towards burnout/compassion fatigue, and may reduce opportunity to experience compassion satisfaction. Proposed mediating variables include perceived team cohesion, perceptions of organisational fairness and autonomy at work. More research is required to explore other potential mediating variables.

4) Suggestions of how employers can support their staff have been provided, including monitoring of individual employees in supervision and provision of education and training to encourage development of more effective coping strategies.

Potential avenues for future research based on the current findings are outlined below.

Future research directions.

Due to the variation in measures used, the extent to which different professional groups vary in their experience of burnout, secondary trauma and compassion satisfaction is unclear from this review. Future research could focus on comparing newer measures, such as the SWAM, with existing valid measures in order to enable comparisons between studies and to assess the relative usefulness of available instruments.

Given the lack of conceptual clarity around burnout and compassion fatigue, it would be useful for future studies to integrate research on these constructs with the goal of developing a more comprehensive and cohesive model.

Awa, Plaumann, and Walter (2010) reviewed a series of intervention programmes for burnout, and evaluations of compassion fatigue interventions are beginning to emerge (e.g., Potter et al., 2013). It would be interesting to explore the effects of attachment orientation on the success of such interventions for individual employees.

In comparison with burnout, there is an extremely limited evidence base relating to compassion satisfaction. However, given that research indicates that compassion satisfaction is significantly negatively correlated with burnout and secondary trauma (e.g., Conrad & Kellar-Guenther, 2006), it may be useful to invest more resources into developing interventions designed to increase compassion satisfaction, which may then reduce levels of burnout and secondary trauma.

Self-report measures of attachment may be restricted by social desirability bias and difficulties in consciously accessing and reporting one's own attachment style (Jacobvitz et al., 2002). Implicit measures of attachment patterns may provide useful insight into unconscious processes which are difficult to access using traditional

instruments and future research could focus on development and evaluation of such measures.

Several authors have suggested mechanisms to account for associations between the constructs under review, but more research is required. For example, evidence suggests that low self-efficacy predicts burnout (Duffy, Oyebode, & Allen, 2009). Perhaps self-efficacy acts as a pathway via which attachment orientation can influence burnout? Alternatively, Tosone et al. (2010) have suggested that resilience may offer protection from compassion fatigue. Future research could explore additional constructs, such as self-efficacy and resilience, to assess the impact they have on relationships between attachment orientation, burnout, secondary trauma and compassion satisfaction.

It is important to replicate and build upon the current findings using experimental methods. Experimental designs, such as that used by Pardess et al. (2014) could provide invaluable insight into the causal relationships between these variables. This may then highlight aspects of the work environment that could be adapted in order to reduce rates of burnout and secondary trauma, and to increase compassion satisfaction amongst employees.

Chapter 2 Empirical Paper

An Investigation of Attachment Orientation, Compassion Fatigue, Compassion Satisfaction and Resilience in Hospice and Palliative Care Nursing Staff

According to a recent Health and Safety Executive (HSE, 2015) report, nurses experienced the highest proportion of work-related stress between 2011 and 2015. Compassion fatigue is one form of work related stress, and is associated with increased absenteeism from work (Pfifferling & Gilley, 2000), in addition to numerous negative symptoms for the individual (Figley, 1995). Compassion fatigue comprises burnout and secondary trauma (Adams, Boscarino, & Figley, 2006), and arises through chronic exposure to, and excessive empathy towards traumatised individuals (Figley, 2002). It is negatively associated with compassion satisfaction (Slocum-Gori, Hemsworth, Chan, Carson, & Kazanjian, 2011), which is a sense of fulfilment derived through experiences of helping others (Stamm, 2002). Research has linked hospice and palliative care nursing with high levels of burnout (e.g., Slocum-Gori et al., 2011) and secondary trauma (Beck, 2011; Abendroth & Flannery, 2006).

Researchers have recently begun to explore associations between adult attachment patterns and burnout (e.g., Pines, 2004; Ronen & Mikulincer, 2009) and compassion fatigue in the workplace (e.g., Racanelli, 2005; Zerach, 2013). Although attachment patterns have been empirically linked with burnout in hospice and palliative care staff (e.g., Ostacoli et al., 2010), relationships between attachment orientation and secondary trauma or compassion satisfaction have not yet been investigated in this population, and the current study aims to address this gap in the literature.

There is an exceptionally limited evidence base concerning the mechanisms that may account for associations between attachment orientations and burnout and/or compassion fatigue. It is imperative that we broaden our understanding of the factors

contributing to, or protecting from, compassion fatigue so that effective interventions can be developed (Sabo, 2008). This study, therefore, investigated resilience as a potential mediator of associations between attachment orientation and compassion fatigue and between attachment orientation and compassion satisfaction.

Within the existing literature, assessments of attachment orientation have relied solely on self-report instruments. The present study employed a novel, implicit measure of attachment alongside an existing, well-validated self-report measure, to explore the usefulness of each approach.

Compassion fatigue.

Joinson (1992) initially defined compassion fatigue as a unique form of burnout amongst helping professionals, arguing that personality traits influencing an individual's decision to work in caring professions also predispose them towards development of compassion fatigue. This idea was elaborated by Figley (1995; 1997; 2002), who claimed that empathic ability is fundamental to helping others, but also a key risk factor for compassion fatigue. Figley (2015) defines compassion fatigue as excessive stress and preoccupation with the traumatic experiences of those being helped, to the extent that it may produce a secondary traumatic stress response in the helper. This response appears similar to post-traumatic stress disorder (PTSD), but in compassion fatigue, the trauma is experienced by another person (Figley, 1995). In Figley's model, a combination of variables, including empathic ability, empathic concern (i.e., motivation to help), prolonged exposure (including ongoing sense of responsibility for caring for the traumatised person), and one's own traumatic memories and personal difficulties, contribute to development of compassion fatigue.

Compassion fatigue poses a significant challenge in palliative care. Abendroth and Flannery (2006) found that 76% of their sample of hospice nurses was at moderate to high risk of compassion fatigue, with 26% in the high risk category. In a small,

qualitative study, Melvin (2012) concluded that nurses working in palliative care for prolonged periods are at elevated risk of compassion fatigue. Whitebird, Asche, Thompson, Rossom, and Heinrich (2013) observed moderate-to-severe symptoms of compassion fatigue in a small but significant proportion of their sample of hospice workers. Compassion fatigue is associated with numerous negative consequences for the individual, including sadness, anxiety, sleeplessness, irritability and detachment from others (Figley, 1995). Compassion fatigue also has significant adverse effects on the wider workplace (Najjar et al., 2009): increased absenteeism due to sickness, reduced productivity, and higher staff turnover (Pfifferling & Gilley, 2000).

A popular, current conceptualisation of compassion fatigue is that it comprises two components: burnout and secondary trauma (Adams et al., 2006; Stamm, 2010), the latter of which has been described above. Burnout is commonly defined as a syndrome consisting of emotional exhaustion, depersonalisation/cynicism relating to clients and a reduced sense of personal achievement/professional efficacy (Maslach & Jackson, 1981; Schaufeli, Leiter, Maslach, & Jackson, 1996), arising from chronic work-related stress (Maslach, 2003). The construct of burnout has already been well-researched in its own right, but the concept of secondary trauma is under-researched by comparison (Kearney et al., 2009), despite its importance in the wider conceptualisation of 'compassion fatigue'.

Compassion satisfaction.

It is argued that compassion satisfaction may mitigate the negative consequences of compassion fatigue on the individual (Stamm, 2002; Figley, 2002). Research has linked higher levels of compassion satisfaction with improved standards of patient care (Dasan, Gohil, Cornelius, & Taylor, 2015), and lower levels with higher secondary trauma and burnout (Slocum-Gori et al., 2011).

Attachment orientation, compassion fatigue and compassion satisfaction.

Attachment theory (Bowlby, 1958; 1969/1982) provides an integrated model of human development, emphasising the significance of early experiences in influencing an individual's subsequent emotional and behavioural responses within interpersonal relationships. It is proposed that interactions with caregivers in early life lead to the formation of stable, internalised representations of self and others, and these shape relationships in adulthood (Bowlby, 1969/1982, 1973). Adult attachment orientation refers to an individual's position along two continuous dimensions: attachment anxiety and attachment avoidance (Brennan, Clark, & Shaver, 1998). High levels of attachment anxiety develop from inconsistent caregiving in early life (Bowlby, 1988), with subsequent hyper-activation of the attachment system and hyper-vigilance for signs of rejection or abandonment. Typical coping-mechanisms associated with attachment anxiety include rumination (Mikulincer & Florian, 1998) and excessive reassurance-seeking (Shaver, Schachner, & Mikulincer, 2005). High levels of attachment avoidance arise from early experiences with consistently absent or unreliable caregivers. Attachment avoidance in adulthood is typified by deactivation of the attachment system, with associated coping strategies of denial and suppression of negative cognitions and emotions, and excessive attempts at self-reliance (Mikulincer & Florian, 1998).

In recent years, researchers have begun to consider attachment theory in the context of work-related variables (Harms, 2011). For example, secure attachment style reliably correlates negatively with burnout amongst employees (e.g., Pines, 2004; Gama, Barbosa, & Vieira, 2014). On the hand, empirical evidence has reliably demonstrated a significant positive relationship between attachment anxiety and burnout (e.g., Burrell et al., 2009; Ronen & Baldwin, 2010; Kokkonen, Cheston, Dallos, & Smart, 2014; Chopik, 2015), and there is some evidence of a similar relationship between attachment avoidance and burnout (e.g., Pines, 2004; Littman-Ovadia, Oren,

& Lavy, 2013; Chopik, 2015; Reizer, 2015). However, associations between attachment avoidance and burnout are less consistent, with five out of 16 studies finding no significant relationship (e.g., Burrell et al., 2009; Hartley, Jovanoska, Roberts, Burden, & Berry, 2015) and two of 16 studies only finding partially significant associations (Kokkonen et al., 2014; Leiter, Day, & Price, 2015). In contrast, of the 18 studies exploring attachment anxiety and burnout, only two failed to find any significant correlation (Falvo, Favara, Di Bernardo, Boccato, & Capozza, 2012; Lavy, 2014), and one found a partially significant association (Hartley et al., 2015).

Studies investigating associations between attachment orientation and secondary trauma amongst employees are less common and early results are mixed. Three out of four studies found that greater attachment anxiety significantly predicted higher levels of secondary trauma (Tosone, Bettmann, Minami, & Jasperson, 2010; Pardess, Mikulincer, Dekel, & Shaver, 2014; Zerach, 2013), with only one study finding a non-significant relationship (Racanelli, 2005). With respect to attachment avoidance, three out of four studies observed non-significant associations with secondary trauma (Racanelli, 2005; Pardess et al., 2014; Zerach, 2013), with the remaining study finding that greater attachment avoidance significantly predicted higher levels of secondary trauma (Tosone et al., 2010).

Studies exploring the relationship between attachment orientations and compassion satisfaction amongst the working population are even fewer in number (n = 3). Pardess et al. (2014) found that attachment anxiety did not correlate with compassion satisfaction, whereas Racanelli (2005) and Zerach (2013) observed significant negative associations between these constructs. Findings are equally mixed for attachment avoidance, as Pardess et al. and Zerach found that greater attachment avoidance significantly predicted lower compassion satisfaction, whereas Racanelli found no evidence of a significant association.

Although associations between attachment orientation and burnout have been explored in hospice and palliative care workers (Gama et al., 2014; Ostacoli et al., 2010), to date investigations in this population have not extended to include secondary trauma or compassion satisfaction. Hospice and palliative care nursing staff may be uniquely vulnerable to secondary trauma because of their frequent exposure to loss and death (Keidel, 2002). From an attachment perspective, Bowlby (1980) argued that insecure attachment is associated with maladaptive responses to death. Stroebe, Schut, and Stroebe (2005) contend that attachment anxiety predisposes the individual towards preoccupation with loss and activates feelings of being unable to cope following bereavement, whereas attachment avoidance is associated with inhibited, delayed, or absent grief reactions. Stroebe et al. argue that people with insecure attachment styles are generally at higher risk of developing complex grief reactions, which may resemble PTSD. Through their frequent exposure to death therefore, hospice and palliative care nurses high in attachment anxiety and/or attachment avoidance may be at heightened risk of secondary trauma, which is similar in nature to PTSD (Figley, 1995).

Resilience.

As more empirical evidence demonstrating associations between attachment orientation, burnout, secondary trauma and compassion satisfaction emerges, attention must turn to the mechanisms underpinning these relationships (Melvin, 2012). Research indicates that perceptions of organisational fairness mediate the relationship between attachment avoidance and burnout, and that team cohesion partially mediates associations between attachment anxiety and burnout (Ronen & Mikulincer, 2009). Alternatively, Tosone et al. (2010) propose that resilience may mediate associations between attachment orientation and secondary trauma.

Resilience is defined as “the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma” (Windle, 2011, pp. 12). Empirical evidence indicates that greater resilience is significantly associated with lower levels of burnout (Rushton, Batcheller, Schroeder, & Donohue, 2015; Hao, Hong, Xu, Zhou, & Xie, 2015) and compassion fatigue, as well as with higher levels of compassion satisfaction (Hiles-Howard et al., 2015; McGarry et al., 2013). Moreover, Hao et al. found that work stress directly and indirectly, via decreased resilience, exacerbated burnout, indicating that lowered resilience was partly responsible for increased burnout in this sample.

Although evidence is limited, research also indicates that resilience and attachment orientation are associated. Karreman and Vingerhoets (2012) found that preoccupied attachment style (characterised by high levels of attachment anxiety and low attachment avoidance) was significantly correlated with lower levels of resilience, whereas dismissing attachment style (typified by high levels of attachment avoidance and low attachment anxiety) was significantly associated with higher resilience. Furthermore, lower resilience fully mediated the relationship between increased attachment anxiety and lower well-being and higher resilience fully mediated the relationship between attachment avoidance and higher well-being. However, the findings related to attachment avoidance can be interpreted in several ways as Mikulincer and Shaver (2007a) argue that under conditions of low stress, defence mechanisms employed by individuals high in attachment avoidance may offer protection from negative outcomes (e.g., burnout), and that this may superficially resemble resilience. However, under conditions of chronic or heightened stress, these defences break down, leaving the individual vulnerable to negative outcomes. This idea is supported by research demonstrating significant negative correlations between resilience and attachment avoidance (Tosone et al., 2010; Tosone, McTighe, & Bauwens, 2015).

The current study aimed to build upon existing evidence to explore the role of resilience as a mediator of the relationship between attachment orientations and compassion fatigue and compassion satisfaction. Tosone et al. (2015) found that lower levels of resilience mediated positive associations between attachment anxiety and shared traumatic stress (a combination of PTSD and secondary trauma), and between attachment avoidance and shared traumatic stress in a sample of social workers. In line with these findings, it was hypothesised that attachment anxiety would be positively associated with secondary trauma and burnout and negatively associated with resilience, and that resilience would mediate the relationship between attachment anxiety and secondary trauma/burnout. Evidence reviewed earlier suggests that the relationship between attachment avoidance and secondary trauma is unclear, but that attachment avoidance is more consistently associated with burnout (e.g., Pines, 2004; Chopik, 2015; Reizer, 2015). As hospice and palliative care nursing staff are potentially faced with chronic stress, strategies characteristically employed by individuals high in attachment avoidance may break down. I therefore predicted that attachment avoidance would be associated with higher burnout and lower resilience, and that resilience would mediate the association between attachment avoidance and burnout. In line with existing evidence (e.g., Zerach, 2013, Hiles-Howard et al., 2015), I hypothesised that attachment anxiety and attachment avoidance would be negatively associated with compassion satisfaction and resilience, and that resilience would mediate the relationship between attachment anxiety/attachment avoidance and compassion satisfaction.

Measurement of attachment orientation.

There are multiple measures of adult attachment patterns, generally divided into self-report measures and narrative/interview approaches (Mikulincer & Shaver, 2007a). Self-report measures have contributed significantly to our understanding of associations between attachment orientations, burnout, secondary trauma and

compassion satisfaction as all results discussed above are based on self-reported attachment. However, the usefulness of self-report measures may be limited by how accurately respondents are able to report on their own attachment style (Jacobvitz, Curran, & Moller, 2002). Self-report measures may be influenced by social desirability concerns and individuals may not be aware of their own unconscious attitudes (Jacobvitz et al., 2002).

There have been recent attempts to develop a novel, implicit measure of attachment patterns. Dewitte, Houwer, and Buysse (2008) adapted the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) to assess attachment anxiety and compared results with those from two established self-report measures of attachment patterns: the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) and the Experiences in Close Relationships scale (ECR; Brennan et al., 1998). IAT-assessed attachment anxiety correlated significantly and positively with the preoccupied category of the RQ but was not associated with the ECR anxiety sub-scale. Additionally, greater IAT-assessed attachment anxiety predicted higher levels of negative affect (DeWitte et al.). Pepper (2013) developed two separate IATs based upon DeWitte et al.'s versions, one to assess attachment anxiety, the other to measure attachment avoidance, and administered them to a sample of sexual offenders and a community control group. Pepper observed a small but significant positive correlation between ECR-assessed and IAT-assessed attachment anxiety, but ECR-assessed and IAT-assessed attachment avoidance scores failed to correlate significantly. Attachment anxiety and attachment avoidance as assessed by IATs did not improve prediction of recidivism risk estimates beyond predictions made by the ECR, suggesting that the IATs were of limited value in Pepper's study.

Despite mixed early evidence, the IAT may be a valuable tool for enhancing understanding of adult attachment patterns. Research demonstrates that implicit and self-report attitudinal measures are often divergent (Hofmann, Gawronski,

Gschwendner, Le, & Schmitt, 2005). Further research is required to assess the ability of the IAT to predict important variables, such as burnout, secondary trauma and compassion satisfaction, in comparison with self-report measures and the present study aims to explore this question.

Stability of constructs over time.

When exploring associations between attachment orientation and compassion fatigue, it is important to consider the stability of the constructs over time. If high levels of burnout and secondary trauma persist for prolonged periods, this is likely to have a greater impact on staff than if episodes are transient. Evidence demonstrates that burnout is stable over a one-year period (Boersma & Linblom, 2009) and over a ten-year period (Schaufeli, Maassen, Bakker, & Sixma, 2011) but to the author's knowledge, stability of secondary trauma and compassion satisfaction has not yet been empirically investigated. As burnout exhibits stability over time however, it is expected that secondary trauma and compassion satisfaction will display similar patterns.

Contention exists around whether or not resilience is a trait (Jacelon, 1997). Rutter (2012) maintains that resilience can only be learned through experiencing adversity and therefore does not constitute a personality trait, whereas Hao et al. (2015) report that resilience is a stable trait, but that it is not unalterable. As evidence suggests that resilience scores remain relatively consistent over time (Connor & Davidson, 2003; Smith et al., 2008), it was predicted that resilience scores in the current study would remain stable between time points.

Rationale of the current study.

To date, associations between attachment orientation and burnout have been explored in hospice and palliative care workers (Gama et al., 2014; Hawkins, Howard, & Oyebode, 2007; Ostacoli et al., 2010). However, associations between attachment orientation and secondary trauma or compassion satisfaction have not yet been

investigated in this population. The present study therefore investigated associations between attachment orientation and compassion fatigue, and with compassion satisfaction in a sample of hospice and palliative care nursing staff. Compassion fatigue comprises secondary trauma and burnout and these were explored separately.

As high rates of compassion fatigue have been observed in palliative care (e.g., Abendroth & Flannery, 2006), it is important to identify mechanisms through which attachment orientation and compassion fatigue are related. This research aimed to address this question by exploring the mediating role of one specific variable, resilience, which has been empirically linked with compassion fatigue (e.g., Hiles-Howard et al., 2015) and attachment orientation (Tosone et al., 2010). Furthermore, through exploration of the stability over time of compassion fatigue, compassion satisfaction and resilience, it was hoped that this research would answer a previously unaddressed question of whether or not compassion fatigue is a long-term or temporary issue.

Existing studies exploring associations between attachment orientations and burnout, secondary trauma and compassion satisfaction have relied exclusively on self-report measures of attachment. The present study tested a novel, implicit measure of attachment (an adaptation of the IAT; Greenwald et al., 1998) alongside a reliable and extensively used self-report measure (the ECR; Brennan et al., 1998) in order to compare their ability to predict burnout, secondary trauma and compassion satisfaction scores.

The current study focused on nursing staff in an attempt to increase sample homogeneity, thereby improving generalisability of findings, since different professionals may experience palliative care work in qualitatively different ways. Furthermore, a Health and Safety Executive report in 2015 stated that nurses

experience the highest levels of work related stress compared with other professional groups.

Hypotheses.

Based on the theoretical and empirical literature reviewed above, it was hypothesised that:

1) Secondary trauma will be positively associated with attachment anxiety. Associations between secondary trauma and attachment avoidance will be explored as past research has produced mixed evidence in this regard.

2) Burnout will be positively associated with attachment anxiety and attachment avoidance.

3) Compassion satisfaction will be negatively associated with attachment anxiety and attachment avoidance.

4) Resilience will be negatively associated with secondary trauma, burnout, attachment anxiety and attachment avoidance, and positively associated with compassion satisfaction.

5) Resilience will mediate the effects of attachment anxiety on secondary trauma, burnout and compassion satisfaction. Resilience will mediate the effects of attachment avoidance on burnout and compassion satisfaction.

6) Associations between implicit and self-reported attachment orientation scores will be explored as existing research is inconsistent.

7) Resilience, secondary trauma, burnout and compassion satisfaction scores will remain stable between time points.

Method

Design.

Hypotheses one to six were explored using a cross-sectional design with a longitudinal design used to assess hypothesis seven.

Participants.

Nursing and education managers of nineteen hospices across the South of England were contacted to discuss the study objectives and to request their participation in the research. Three hospices did not respond to initial attempts at communication. Three hospices declined due to having recently participated in research on compassion fatigue. Two sites gave preliminary approval but due to time constraints and staff sickness, ultimately declined. One hospice gave permission for individual staff members to complete the research outside working hours, but not during the working day, although no participants were recruited from this site. This left a total of 10 sites who agreed to participate. The researcher was unable to meet with potential participants at two sites due to time constraints. All sites were part-NHS funded and part-charitably funded.

All members of nursing staff at approved sites were approached to seek their participation in the research provided that they were over 18 years of age, were employed in a nursing role (including health care assistants), had direct patient contact and had worked in palliative care for at least the preceding 12 months. Participants needed to be able to understand English sufficiently well to be able to complete written questionnaires and to provide informed consent. Posters (see Appendix A) were supplied to each site to be displayed in communal areas, such as staff rooms.

Participants were recruited between August 2015 and March 2016. Using G-Power (Faul, Erdfelder, Lang, & Buchner, 2007) set to 0.8 power, 5% significance and an effect size of $f^2 = 0.18$ (based on effect sizes of similar research reported by West,

2015), the minimum sample size required for multiple regression with five predictors was calculated to be 77. A total of 64 participants (60 female, 4 male) completed all questionnaire measures. Six participants completed only one IAT due to time constraints.

Materials.

Participants completed a battery of self-report questionnaires, designed to measure the criterion and predictor variables. The study also used a computerised measure of attachment (IAT), designed to measure attachment anxiety and attachment avoidance separately. Criterion variables were secondary trauma, burnout and compassion satisfaction. Predictor variables were ECR-rated attachment anxiety ('ECR-anxiety'; see below for a description of the ECR), ECR-rated attachment avoidance ('ECR-avoidance'), IAT-rated attachment anxiety ('IAT-anxiety'), IAT-rated attachment avoidance ('IAT-avoidance') and resilience.

Demographic information.

Participants completed a demographic information form (see Appendix B). Tables 4 and 5 summarise the demographic data.

Table 4

Categorical demographic variables

	N	Frequency (%)
Gender		
Female	60	93.8
Male	4	6.2
Job Role		
Health care/Nursing Assistant	12	18.8
Nurse	32	50
Clinical Nurse Specialist	13	20.3
Sister	7	10.9
Marital Status		
Single	16	25
Married/long term relationship	48	75
Ethnicity		
White British	62	96.8
White Irish	1	1.6
Declined	1	1.6

Table 5

Continuous demographic variables (n = 64)

	M	*SD*	Median	Range	
				Min	Max
Age	50.78	9.50	52	31	74
Experience (years)	11.94	9.21	10	1	40
Current hours/week	30.28	7.71	30	12.5	40
Current contact hours/week	23.23	7.86	24	3	37.5
Current contact hours (%)	78.45	20.75	81.65	7.5	100

Secondary trauma, burnout and compassion satisfaction.

Compassion fatigue was assessed using the Professional Quality of Life Scale Version 5 (ProQOL; Stamm, 2009; see Appendix C). The ProQOL is a 30-item self-report measure comprising three independent sub-scales: burnout, secondary trauma and compassion satisfaction. Collectively, burnout and secondary trauma constitute compassion fatigue (Adams et al., 2006). Respondents rated items from 1 (never) to 5 (very often) to indicate the frequency with which they had experienced each statement (e.g., 'I feel connected to others') within the last 30 days at work. The ProQOL demonstrates good construct validity and has been used extensively in empirical research (Stamm, 2016).

In the current study, internal consistency was adequate for compassion satisfaction (α = .83) and secondary trauma (α = .77), although lower than values reported by Stamm (2010; .88 and .81 respectively). Cronbach's alpha for burnout however was relatively poor (α = .56) and lower than that reported in similar studies (.7; Pardess et al., 2014 and Zerach, 2013), as well as that reported by Stamm (.75). Inspection of the inter-item correlation matrix indicated that items representing burnout were not highly correlated. Deletion of individual items from this subscale failed to substantially increase reliability, therefore no items were removed but results relating to burnout should be treated with caution.

Attachment.

Attachment orientation was assessed using the ECR (Brennan et al., 1998; see Appendix D) and two IATs, one to measure attachment anxiety and the other, attachment avoidance. The ECR is a 36-item scale comprising two sub-scales representing attachment anxiety and attachment avoidance. Respondents rated their agreement with each statement on a scale from 1 (disagree strongly) to 7 (agree strongly) and were instructed to consider how they feel in relationships generally.

Higher sub-scale scores reflect higher levels of attachment anxiety/attachment avoidance. Reliability coefficients are consistently around .9 or above and the ECR is one of the most widely used self-report measures of adult attachment (Mikulincer & Shaver, 2007a). Within the current study, ECR anxiety and avoidance sub-scales exhibited high internal consistency (α = .92 and .95 respectively).

The IATs employed in this study have been used in previous research (Pepper, 2013) and the electronic programmes were kindly donated by Pepper. Pepper's IATs were based on the attachment anxiety IAT used by DeWitte et al. (2008). The IATs were designed and delivered using Direct RT computer software (v2008).

The IAT is a computerised categorisation task in which participants are instructed to press one of two response keys to group stimuli into one of four categories, meaning that two categories always share each response key. In the attachment anxiety IAT, category labels were: 'attachment figure', 'not attachment figure', 'secure' and 'anxious', with the latter two categories replaced with 'closeness' and 'distance in the attachment avoidance IAT. The IAT is based on the principle that participants will be faster and more accurate to respond to congruent relative to incongruent pairings. Thus when 'attachment figure' shares a response key with 'anxious', participants are expected to be slower to respond and to make more errors.

Participants identified an attachment figure using the WHOTO (Fraley & Davis, 1997; see Appendix E), which asks questions such as 'who is the person you would count on for advice?' Stimuli representing the 'attachment figure' category were generated idiosyncratically using the attachment figure information form (see Appendix F), which asks for details such as favourite hobby and occupation of the identified person. The researcher then collaboratively developed a 'not attachment figure' stimuli list with each participant. For example, if the identified hobby was 'football', an opposite stimulus might be 'tennis', so long as this did not also remind the person of their attachment figure. Table 6 summarises the structure of the current IAT's.

Table 6

Structure of Implicit Association Test (IAT) used to assess attachment anxiety

Block	Number of Trials	Task Description	Correct Response	
			Left	Right
1	20	'John' and 'secure' share a response key	John [a]	Not John[b]
		'Not John' and 'anxious' share a response key	Secure	Anxious [c]
2	80	As for Block 1	As for Block 1	
3	20	'John' and 'anxious' share a response key	John	Not John
		Not John' and 'secure' share a	Anxious	Secure
4	80	As for Block 1	As for Block 3	

Note: In this example, the name of the identified attachment figure is John, therefore target categories are 'John' and 'Not John'. The blocks are listed in the order performed by participants who were assigned to complete the congruent version of the attachment anxiety IAT. The incongruent version would be identical except that order of block presentation would be: 3, 4, 1, 2.

Stimuli were presented in the centre of the computer screen one at a time. To aid categorisation, 'John' and 'not John' words were presented in capital letters whereas 'secure' and 'anxious' words were presented in lower-case letters.

[a] Category labels (i.e. in this example, 'John', 'not John', 'secure' and 'anxious') appeared in the upper left and upper right corners of the computer screen to remind participants of the correct response key for each category. For the attachment avoidance IAT, the category labels 'secure' and 'anxious' were replaced with 'closeness' and 'distance'.

[b] 'John' words were established using the attachment figure information form. 'Not John' words were generated collaboratively between the researcher and the participant, ensuring that each 'not John' word did not remind the participant of John.

[c] 'Secure' words were as follows: certain, reassured, secure, safe and relaxed. Anxious words were: tense, abandoned, doubt, anxious and uncertain. In the attachment avoidance IAT, 'closeness' words were: share, trust, rely, depend, support. 'Distance' words were: alone, distant, independent, isolated and withdraw.

Order of IAT presentation was counter-balanced so that approximately half of the sample received the anxiety IAT first, whilst the remainder completed the avoidance IAT first. Participants always completed a congruent block first (i.e. 'attachment figure' plus 'secure'/'closeness' on the same response key), as from the researcher's prior experience with the IAT, the incongruent version is potentially more confusing and it was deemed appropriate for participants to gain experience with the IAT before attempting this.

Two separate IAT scores were calculated for each participant (one each for attachment anxiety and attachment avoidance), based on the scoring guidelines provided by Greenwald, Nosek, and Banaji (2003). In the current study, higher scores reflect a relative preference for 'attachment figure' with 'secure'/'closeness' words over the opposite pairing (i.e. 'attachment figure' with 'anxious'/'distance' words).

Resilience.

Resilience was assessed using the Brief Resilience Scale (BRS; Smith et al, 2008; see Appendix G), a self-report measure comprising six items assessing ability to recover from stress, e.g., 'I tend to bounce back quickly after hard times'. Items are rated from 1 (strongly disagree) to 5 (strongly agree) with higher scores reflecting greater resilience. The BRS has good internal consistency with Cronbach's alpha ranging from .80 to .91 (Smith et al., 2008). In a comprehensive review of the psychometric properties of various measures of resilience, Windle et al. (2011) concluded that the BRS was one of the best performing instruments. Internal consistency of the BRS in the current study was high ($\alpha = .88$).

Depression and anxiety screening measure.

A condensed version of the Patient Health Questionnaire (PHQ-4; Kroenke, Spitzer, Williams, & Löwe, 2009; see Appendix H) was selected as a screening tool for symptoms of depression and anxiety, as evidence suggests that these can be

positively correlated with compassion fatigue (e.g., Hegney et al., 2014). The PHQ-4 consists of four items that are rated from 0 (not at all) to 3 (nearly every day), indicating frequency with which one has experienced symptoms of low mood or anxiety during the past two weeks. The PHQ-4 was selected on the basis of its brevity, keeping the burden on participants to a minimum. It demonstrates good internal reliability and validity (Kroenke et al., 2009). Cronbach's alphas in the current study were .80 and .82 for the anxiety and depression sub-scales respectively.

Procedure.

Once approval had been granted for the current research to take place at an individual site, posters were displayed in communal areas. An email was circulated to all nursing staff, including inpatient and community staff, with the participant information sheet attached (see Appendix I). Interested individuals were asked to contact the researcher directly and a mutually convenient meeting time was arranged at the relevant site.

Each participant meeting followed the same format. The researcher provided a further copy of the participant information sheet. Once written, informed consent had been obtained (see Appendix J – Consent form (Time 1)), participants completed the WHOTO and attachment figure information form. Participants then completed the questionnaire measures (in the following order: demographics form, ProQOL, ECR, BRS, PHQ-4), during which time the researcher inputted the relevant attachment figure stimuli into the DirectRT programme. Participants then completed both IATs in a randomized, counter-balanced order. Feedback was sought at the end of the session, any questions were answered, and the Time 1 debriefing form was provided (see Appendix K).

Time 2 questionnaires (Pro-QOL, BRS and PHQ-4) were sent via email to each participant or posted to the relevant site (individual preference was determined at Time

1), along with a Time 2 participant information sheet, consent form and debriefing form (see Appendices L, M and N respectively).

All participants who completed Time 1 measures were entered into a prize draw with three cash prizes (£50, £25 and £10).

Ethical considerations.

Ethical approval was obtained from the University of Southampton, School of Psychology Ethics Committee (see Appendix O). As each individual site varied in their research and development (R&D) policy, R&D approval was sought on a case-by-case basis. Two sites (belonging to the same NHS Trust) required NHS approval which was obtained using the online Integrated Research Application System (see Appendix P – Research and Development approval for recruitment at two NHS sites for approval documentation). Not all sites offered official, written confirmation of approval of the research, but where provided, letters can be found in Appendix Q.

The participant information sheet was made available to all potential participants at least 24 hours before participation, informing them of their right to withdraw at any point and that the research is anonymous. Individuals were offered an opportunity to ask questions of the researcher and written, informed consent was obtained prior to completing any measures. Debriefing forms were provided at Times 1 and 2, containing contact details of the researcher and the University of Southampton ethics committee, as well as details of available resources relating to compassion fatigue.

Data analysis.

Analyses were conducted using SPSS version 21. Correlational analyses and regression models were used to test hypotheses one to six. A paired-samples *t*-test was used to test hypothesis seven. Bootstrapping (Efron & Tibishirani, 1993) was used

throughout statistical analyses due to non-normal distributions, as recommended by Field (2013).

Results

Data preparation.

Data were screened for errors and outliers. Where identified, outliers were replaced with a value one unit larger/smaller than the next most extreme score on that sub-scale (Tabachnick & Fidell, 2014). There were no missing data on self-report measures. Participants completing only one IAT were excluded from analyses pertaining to the missing IAT. As the sample were predominantly female, White British and qualified members of staff, gender, ethnicity and job role as variables were collapsed and not analysed further.

Data were assessed for normality using graphical methods (examination of histograms, boxplots and Q-Q-plots), skewness and kurtosis indices and the Shapiro-Wilk test. Age, secondary trauma, compassion satisfaction and IAT-anxiety scores were all normally distributed. Years of experience, burnout, ECR-anxiety, ECR-avoidance, IAT-avoidance and PHQ-4 scores were all slightly positively skewed. Current hours, percentage of current hours as direct patient contact and BRS scores were slightly negatively skewed. Data transformations as recommended by Tabachnick and Fidell (2014) were attempted (log, reciprocal and square root of variables). However, as the majority of distributions remained non-normal, bootstrapping was used in all analyses to ensure robustness (Field, 2013).

The assumption of homogeneity of variance was not violated. Inspection of scatterplots did not reveal any non-linear relationships between variables. Although heteroscedasticity was observed amongst some variables, Tabachnick and Fidell (2014) advise that this is not critical when data is ungrouped and that this is often

caused by non-normality of one of the variables. As violations of normality were managed through use of bootstrapping, no further action was taken.

As there were no inter-item correlations greater than .8, all variation inflation factors were lower than 10 and all tolerance statistics were greater than .2, there were no issues with multicollinearity in this sample (Field, 2013). Durbin-Watson statistics indicated that the assumption of independent errors was met.

Descriptive statistics.

Table 7 displays descriptive statistics for all criterion and predictor variables. Mean secondary trauma (*M* = 21.52, *SD* = 4.71) and burnout (*M* = 22.75, *SD* = 3.85) scores fall into the low level category (Stamm, 2010), narrowly missing the cut-off of 23 that would denote average levels. Mean compassion satisfaction score (*M* = 40.52, *SD* = 4.61) falls into the high average category (Stamm, 2010). Mean ECR scores in this sample were 2.83 (*SD* = 1.07) for attachment anxiety and 2.42 (*SD* = 1.04) for attachment avoidance. These values are slightly lower than those reported in similar research exploring attachment orientations and compassion fatigue/burnout (e.g., Reizer, 2015; Ronen & Baldwin, 2010; Pardess et al., 2014). Mean IAT-anxiety and IAT-avoidance scores (both *M* = .70, *SD* = .42) were slightly higher than those reported by Pepper (2013) in a community control sample (*M* = -.44, *SD* = .42 and *M* = -.39, *SD* = .41 respectively). It should be noted that Pepper's IATs were scored in the opposite direction, so that positive scores indicated relative attachment insecurity. Independent samples t-tests confirmed no significant differences between the IATs dependent upon order of administration or IAT version (i.e. whether the congruent or incongruent block was presented first). These variables were therefore collapsed in subsequent analyses. Mean BRS score in this sample was 3.44 (*SD* = .80), which is slightly lower than the average scores (ranging from 3.53 – 3.98) reported by Smith et al. (2008).

Table 7

Descriptive statistics for criterion and predictor variables

	N	*M*	*SD*	Mdn	α	Range	
						Min	Max
ProQOL							
Secondary trauma	64	21.52	4.71	21.50	.77	10	35
Burnout	64	22.75	3.85	22.00	.56	16	36
Compassion satisfaction	64	40.52	4.61	41.00	.83	31	49
ECR							
Anxiety	64	2.83	1.07	2.70	.92	1.00	6.00
Avoidance	64	2.42	1.04	2.40	.95	1.00	4.70
IAT							
Anxiety	61	.70	.42	.70		-.39	1.88
Avoidance	61	.70	.42	.64		-.14	1.56
BRS	64	3.44	.80	3.67	.88	1.83	5.00

Correlations between criterion and demographic and screening variables.

Pearson correlations were used to explore associations between criterion and demographic and screening variables (see Table 8). Secondary trauma and compassion satisfaction scores did not correlate significantly with any of the demographic variables. Burnout correlated significantly with marital status. On average, participants not in a relationship scored more highly on burnout (M = 24.50, SE = 1.09) than those in a relationship (M = 22.17, SE = .51). This difference, 2.33, BCa 95% CI [.064, 4.69], was significant $t(62) = 2.16$, $p < .05$, and represents a medium effect size, d = .54.

Secondary trauma and burnout were positively and significantly correlated with PHQ-4 anxiety and depression scores. Compassion satisfaction was significantly negatively correlated with PHQ-4 depression scores.

Table 8

Pearson's correlation values for demographic and criterion variables

	Burnout	Secondary trauma	Compassion Satisfaction
Age	-.085	.040	.000
Marital status	-.264*	-.083	.097
Years of experience	-.127	-.244	.046
Current hours	.198	.000	.101
Current % contact hours	.054	.214	-.185
PHQ-4 depression	.543**	.344**	-.382**
PHQ-4 anxiety	.374**	.388**	-.125

Note: Bootstrap results are based on 1000 bootstrap samples

* $p < .05$

** $p < .01$

Correlational and regression analyses.

Pearson correlations were used to explore associations between criterion and predictor variables (see Table 9).

Table 9

Pearson's correlation matrix for criterion and predictor variables

	1	2	3	4	5	6	7	8
1) Secondary Trauma	-							
2) Burnout	.429**	-						
3) Compassion satisfaction	-.142	-.648**	-					
4) ECR anxiety	.409**	.449**	-.074	-				
5) ECR avoidance	.192	.504**	-.343**	.190	-			
6) IAT anxiety	.022	-.232	.085	-.043	-.096	-		
7) IAT avoidance	.085	-.163	.187	-.181	-.156	.564**	-	
8) Resilience	-.285*	-.340**	.161	-.504**	-.239	.087	.176	-

* $p < .05$

** $p < .01$

Bootstrap results are based on 1000 bootstrap samples

Secondary trauma was significantly positively correlated with burnout $r = .429$, 95% BCa CI [.11, .64] $p = .00$, but was not significantly correlated with compassion satisfaction. Burnout was significantly negatively correlated with compassion satisfaction $r = -.648$, 95% BCa CI [-.76, -.51], $p = .00$. ECR-anxiety and ECR-avoidance scores were not significantly correlated, but IAT-anxiety and IAT-avoidance scores were significantly and positively correlated with each other: $r = .564$, 95% BCa CI [.32, .77], $p = .00$, consistent with Pepper's (2013) findings. As IAT-anxiety and IAT-avoidance scores failed to significantly correlate with any other variable, they were excluded from regression analyses and hypotheses are discussed below in relation to ECR-anxiety and ECR-avoidance scores. Hierarchical multiple regression analyses were conducted to assess the ability of ECR-anxiety, ECR-avoidance and BRS scores to predict each criterion variable separately.

Hypothesis 1: Associations between secondary trauma and attachment orientations.

Secondary trauma was significantly and positively correlated with ECR-anxiety *r* = .409, 95% BCa CI [.19, .65], *p* = .00, supporting hypothesis 1. Secondary trauma was not significantly correlated with ECR-avoidance.

Regression analyses

ECR-anxiety and ECR-avoidance were entered at Step 1, explaining 19.7% of the variance in secondary trauma scores. Following entry of BRS scores in Step 2 the overall model was significant and total variance explained by the model was 20.5%, *F*(3, 60) = 5.15, *p* <.01. Resilience scores explained an additional 0.8% of variance in secondary trauma, *R* squared change = .008, *F* change (1, 60) = .61, *p* = .44, indicating that addition of resilience scores did not significantly improve the model. In the final model, only ECR-anxiety significantly predicted secondary trauma (see Table 10).

Table 10

Hierarchical multiple regression analyses to test the effect of predictor variables on secondary trauma. Confidence intervals and standard errors based on 1000 bootstrap samples

	B	*SE*	95% BCa CI	*β*
Step 1				
Constant	15.15	2.17	10.92 – 20.23	
ECR-anxiety	1.78	.55	.71 – 2.83	.40**
ECR-avoidance	.55	.50	-.41 – 1.36	.12
Step 2				
Constant	18.00	5.02	8.68 – 28.99	
ECR-Anxiety	1.57	.68	.28 – 2.84	.36*
ECR-Avoidance	.49	.51	-.53 – 2.55	.11
Resilience	-.61	.92	-2.46 – .77	-.10

Note: BCa CI = Bootstrapped confidence interval. R^2 = .197 for Step 1 (p < .01); ΔR^2 = .008 for Step 2 (p = .44).

Hypothesis 2: Associations between burnout and attachment orientations.

Consistent with predictions, burnout was significantly positively correlated with ECR-anxiety r = .449, 95% BCa CI [.15, .66], p = .00 and ECR-avoidance r = .504, 95% BCa CI [.23, .73], p = .00.

Regression analyses

At Step 1, ECR-anxiety and ECR-avoidance explained 39.6% of the variance in burnout scores. Following entry of resilience scores the overall model was significant and the total variance explained by the model was 39.8%, $F(3, 60) = 13.23$, p <.01. Resilience scores explained an additional 0.2% of the variance in burnout, R squared change = .002, F change (1, 60) =.25, p = .62. In the final model, ECR-anxiety and ECR-avoidance significantly predicted burnout scores (see Table 11).

Table 11

Hierarchical multiple regression analyses to test the effect of predictor variables on burnout. Confidence intervals and standard errors based on 1000 bootstrap samples

	B	*SE*	95% BCa CI	*β*
Step 1				
Constant	14.97	1.32	12.70 – 17.79	
ECR-anxiety	1.36	.40	.57 – 1.98	.38**
ECR-avoidance	1.59	.42	.70 – 2.55	.44**
Step 2				
Constant	16.27	2.61	10.56 – 21.58	
ECR-Anxiety	1.26	.45	.51 – 1.92	.35**
ECR-Avoidance	1.59	.42	.70 – 2.55	.43**
Resilience	-.28	.58	-1.35 – .77	-.06

Note: BCa CI = Bootstrapped confidence interval. R^2 = .396 for Step 1; ΔR^2 = .002 for Step 2 (*p*s < .01).
** *p* < .01

Hypothesis 3: Associations between compassion satisfaction and attachment orientations.

Compassion satisfaction was significantly negatively correlated with ECR-avoidance *r* = -.343, 95% BCa CI [-.57, -.11], *p* = .01 but was not significantly correlated with ECR-anxiety. Thus hypothesis 3 was partially supported.

Regression analyses

At Step 1, ECR-anxiety and ECR-avoidance explained 12.3% of the variance in compassion satisfaction scores. Addition of resilience explained a further 1.1% and the overall model was significant, with 13.4% of the total variance accounted for, $F(3, 60) = 3.08$, $p < .05$. Addition of resilience scores did not significantly improve the model, *R*

squared change = .011, *F* change (1, 60)= .73, *p* = .40. In the final model, only ECR-avoidance scores significantly predicted compassion satisfaction (see Table 12).

Table 12

Hierarchical multiple regression analyses to test the effect of predictor variables on compassion satisfaction. Confidence intervals and standard errors based on 1000 bootstrap samples

	B	*SE*	95% BCa CI	*β*
Step 1				
Constant	44.09	1.96	40.23 – 47.11	
ECR-anxiety	.08	.56	-1.00 – 1.50	.02
ECR-avoidance	-1.57	.52	-2.65 – -.52	-.35**
Step 2				
Constant	40.89	3.61	32.65 – 47.23	
ECR-Anxiety	.32	.58	-.81 – 1.76	.07
ECR-Avoidance	-1.50	.53	-2.55 – -.44	-.34*
Resilience	-.69	.71	-.62 – 2.07	.12

Note: BCa CI = Bootstrapped confidence interval. R^2 = .123 for Step 1 (p < .05); ΔR^2 = .011 for Step 2 (p = .40).
* p < .05, ** p < .01

Hypothesis 4: Associations between attachment orientations, burnout, compassion fatigue, compassion satisfaction and resilience.

As predicted, secondary trauma (*r* = -.285. 95% BCa CI [-.55, .04], *p* = .03), burnout (*r* = -.340, 95% BCa CI [-.56, -.05], *p* = .01) and ECR-anxiety (*r* = -.504, 95% BCa CI [-.68, -.30], *p* = .00) were all significantly negatively correlated with resilience. Hypotheses relating to attachment avoidance and compassion satisfaction were not supported, as both of these constructs failed to significantly correlate with resilience.

Hypothesis 5: The mediating role of resilience.

Resilience failed to significantly predict burnout, secondary trauma or compassion satisfaction scores, therefore criteria for mediation analysis were not met and this analysis was not performed.

Hypothesis 6: Associations between implicit and self-reported attachment orientations

ECR-anxiety failed to correlate significantly with IAT-anxiety and ECR-avoidance did not correlate significantly with IAT-avoidance scores.

Hypothesis 7: Comparison of Time 1 and Time 2 secondary trauma, burnout, compassion satisfaction and resilience scores

The sampling distribution of the differences between Time 1 and Time 2 scores was assessed in order to ensure assumptions for paired-samples t-tests were met. Data were screened for errors and outliers and assessed for normality. Distributions of the difference scores were positively skewed therefore bootstrapping was used to ensure robustness.

Paired samples t-tests found no significant differences between Time 1 and Time 2 secondary trauma, burnout, compassion satisfaction and resilience scores: hypothesis 7 was supported (see Table 13). It should be noted however that the sample size was unfortunately limited by a low response rate and was therefore small (n = 22). Cronbach's alpha levels for the Time 2 secondary trauma and burnout Pro-QOL sub-scales were also low, meaning these results should be treated with caution.

Table 13

A *comparison of Time 1 and Time 2 ProQOL and BRS scores (n = 22)*

	Time 1		Time 2			*T* statistic
	M	*SD*	*M*	*SD*	α [a]	
ProQOL						
Secondary trauma	21.41	4.28	19.68	3.85	.64	1.86
Burnout	22.05	3.06	21.41	3.28	.46	1.35
Compassion satisfaction	40.64	4.66	39.77	4.73	.87	1.87
BRS	3.39	.91	3.65	.66	.88	-1.74

Note: [a] Cronbach's alpha for Time 2 measures. For Time 1 alpha values, see Table 7.

Discussion

This study explored associations between attachment orientation, compassion fatigue, compassion satisfaction and resilience in hospice and palliative care nursing staff. It also investigated associations between a well validated self-report measure of attachment and a novel implicit measure of attachment, and explored stability over time of compassion fatigue, compassion satisfaction and resilience. As IAT-anxiety and IAT-avoidance scores failed to significantly correlate with any of the criterion variables, these will be discussed separately.

The current results indicate significant, positive associations between attachment anxiety and secondary trauma, as well as with burnout. Attachment anxiety significantly predicted secondary trauma and burnout scores in this sample. Attachment avoidance was significantly positively related to burnout and predicted burnout scores in regression analyses. Attachment avoidance was significantly negatively correlated with compassion satisfaction, with higher attachment avoidance predicting lower compassion satisfaction scores.

These results may be explained in the context of existing theory and research. Figley's (2002) model contends that empathy is pivotal to the development of

compassion fatigue. Attachment avoidance has been empirically linked with lower empathy (Mikulincer et al., 2001) and with less willingness to help when others are suffering (Mikulincer et al., 2005). This suggests that individuals high in attachment avoidance may experience low empathic ability, as well as low levels of empathic concern (desire to help others in need) which are prerequisites to secondary trauma, meaning that they are less vulnerable to compassion fatigue than those low in attachment avoidance. Such individuals may still be vulnerable to burnout however, as seen in the current results, as burnout does not require the presence of empathy.

Previous research has also linked attachment anxiety with lower levels of empathy, but in contrast to attachment avoidance, attachment anxiety is linked with high levels of personal distress, which is typically not translated into helpful behaviour (Mikulincer et al., 2005). Figley (2002) proposed that residual compassion stress, a contributory factor in compassion fatigue, arises when the person one is trying to support continues to seek relief from their suffering. Perhaps hospice nursing staff high in attachment anxiety experience significant compassion stress, because they have been unable to provide appropriate help to their patients and so feel helpless in the face of patients' ongoing demands. This may in turn increase their vulnerability towards compassion fatigue.

The current findings support the hypothesis that attachment anxiety is strongly positively associated with burnout, in line with the majority of existing evidence (e.g., Ronen & Mikulincer, 2009; Pines, 2004; Maunder et al., 2006). Previous research relating to associations between attachment avoidance and burnout is more diverse, but the present results indicate that attachment avoidance is significantly positively associated with burnout among hospice and palliative care nursing staff.

Results relating to compassion satisfaction are consistent with those of Pardess et al. (2014), who proposed that individuals high in attachment avoidance maintain

interpersonal distance at work, preventing them from experiencing positive emotions that may facilitate compassion satisfaction. They also suggested that a desire to be close to others leads individuals high in attachment anxiety to engage in caring behaviours that may prevent negative associations with compassion satisfaction.

Current findings regarding resilience were mixed. As hypothesised, greater resilience was associated with lower burnout, secondary trauma and attachment anxiety, but resilience failed to significantly correlate with attachment avoidance or compassion satisfaction. Existing evidence relating to associations between attachment avoidance and resilience is contradictory (Karreman & Vingerhoets, 2012; Tosone et al., 2010), suggesting that this relationship is not straightforward. However, it should be noted that the relationship between attachment avoidance and resilience was negative (as predicted) and approached significance (r = -.239, 95% BCa CI [-.50, .04], p = .07). Given the sample size, this study may have been under-powered to detect a significant association between these constructs. The relationship between resilience and compassion satisfaction did not approach significance, suggesting absence of a significant association in this sample.

Despite the significant associations identified, the final regression models for secondary trauma, burnout and compassion satisfaction explained a small proportion of the variance in scores. This leaves a substantial proportion of variance unaccounted for, suggesting that there were additional variables contributing to the criterion variables that were not measured. Resilience contributed minimally to each of the final regression models and failed to significantly predict any of the criterion variables, meaning that resilience did not mediate the relationship between attachment orientation and compassion fatigue or compassion satisfaction. This contrasts with findings of Tosone et al. (2015) who observed that resilience mediated associations between attachment orientations and shared traumatic stress in their sample of social workers. Perhaps Tosone et al.'s use of different measures to assess attachment

orientation (the Adult Attachment Questionnaire; Simpson, Rholes, & Phillips, 1996) and resilience (the Connor-Davidson Resiliency Scale; Connor & Davidson, 2003) may explain these varied findings. Further research is required to identify alternative variables that may account for the considerable proportion of variance in scores unaccounted for in the present study.

Current findings suggest that the criterion variables were stable over time, in line with existing evidence (Boersma & Lindblom, 2009). However, reported levels of secondary trauma and burnout were in the low range in this sample. It would be interesting to investigate if individuals experiencing high levels of compassion fatigue display a similar, stable pattern. Resilience was also stable over time but given the relatively short interval between assessments (two months), research should explore the stability of resilience over longer time periods in order to draw firmer conclusions regarding classification of resilience as a state or trait.

Self-reported and implicitly assessed attachment scores were not significantly correlated in this sample. Research demonstrates that implicit and self-report measures are often divergent (Hofmann et al., 2005), therefore on its own, this finding is not unusual and could potentially suggest that the IATs and ECR are measuring different aspects of attachment. However, the attachment IATs failed to correlate significantly with any of the criterion or predictor variables, meaning that the IATs were not helpful in contributing to our understanding of compassion fatigue or compassion satisfaction in this sample. This may be explained by limitations of the IATs themselves. Perhaps the stimuli assessed generalised feelings towards attachment figures as opposed to attachment anxiety and attachment avoidance specifically. This hypothesis is supported by the significant positive correlation between the attachment anxiety and attachment avoidance IATs, both in the present study and in Pepper's (2013) research. One potential suggestion to overcome this difficulty involves use of images to convey attachment concepts, which may be more emotive than

individualised words that perhaps lack context. With this type of measure, it is also difficult to check that participants are thinking about the constructs in the intended manner. Furthermore, attachment styles were not primed, potentially meaning that mental representations of attachment figures were not accessible and therefore not captured by the IATs. Perhaps in future, use of attachment IATs could be preceded by a priming task, such as those used in previous empirical studies (e.g., Mikulincer & Shaver, 2001; Mikulincer, Gillath, & Shaver, 2002) designed to make these mental representations temporarily more accessible.

Clinical implications

The current results indicate that individuals high in attachment anxiety may be particularly at risk of developing compassion fatigue, as attachment anxiety was significantly associated with both sub-components (secondary trauma and burnout) in this sample. Conversely, findings suggest that individuals high in attachment avoidance may be at increased risk of developing burnout, but not compassion fatigue, as attachment avoidance was not significantly related to secondary trauma. Individuals high in attachment avoidance may also be particularly susceptible to low levels of compassion satisfaction at work. When viewed in the context of existing evidence highlighting the negative consequences of compassion fatigue (e.g., Figley, 1995; Pfifferling & Gilley, 2000), these findings indicate that it may be advantageous to identify vulnerable individuals, i.e. those high in attachment anxiety and/or attachment avoidance, so that they may be offered additional support. Although further research is required to explore the types of support that may be most useful, initial suggestions are proposed here.

Evidence suggests that strategies designed to boost attachment security can be effective in reducing the negative effects associated with attachment insecurity (Mikulincer & Shaver, 2007b). For example, Mikulincer et al. (2001) found that reading a story about a caring attachment figure providing support significantly increases

compassion and reduces personal distress in response to others' suffering. The authors replicated these findings using alternative means of temporarily enhancing attachment security, including subliminal exposure to proximity-related words, such as 'love' and 'support', and recalling autobiographical memories of receiving care. Furthermore, studies show that boosting attachment security using similar priming methods increases willingness to help others (Mikulincer, Shaver, Gillath, & Nitzberg, 2005). Although there is less evidence regarding the long-term effects of interventions designed to enhance attachment security, early investigations are promising. Carnelley and Rowe (2007) found that repeated priming of secure attachment produced positive changes in expectations regarding romantic partners' behaviour, increased self-liking and self-competency ratings and reduced attachment anxiety, two days after the final priming procedure.

More research is required to explore how priming of secure attachment could be usefully implemented in work settings but one potential avenue for further investigation concerns the role of supervisors in boosting attachment security. Mikulincer and Shaver (2007b) write that leaders in organisational settings can act as context-specific attachment figures. It is possible therefore, that establishment of good supervisory relationships could enable supervisors at work to act as a temporary secure base (Ainsworth, Blehar, Waters, & Wall, 1978) for employees. Research indicates that secure attachment style is associated with lower levels of burnout (e.g., Gama et al., 2014; Simmons, Gooty, Nelson, & Little, 2009). Pardess et al. (2014) experimentally demonstrated that a secure attachment priming exercise (asking participants to contemplate someone close to them), significantly reduced prospective ratings of burnout and secondary trauma and significantly increased prospective reports of compassion satisfaction, when compared with a neutral prime. Perhaps a secure relationship with a supervisor at work may facilitate reduced levels of burnout and secondary trauma and increased levels of compassion satisfaction in employees

who are high in attachment anxiety and/or attachment avoidance. In order to develop secure professional relationships, supervisors could be offered training in basic counselling skills such as warmth, genuineness and empathy (Rogers, 1957).

In this sample, attachment anxiety and attachment avoidance predicted higher levels of burnout, but contrary to hypotheses, resilience did not mediate this relationship. Existing research may offer insight into the mechanisms via which the observed associations between attachment orientation and burnout occur. Ronen and Mikulincer (2009) found that significant positive associations between attachment avoidance and burnout in their sample of private-sector employees was fully mediated by perceived organisational fairness. In the same study, the significant positive association between attachment anxiety and burnout was partially mediated by perceptions of team cohesion. These results suggest that the significant relationships between attachment avoidance and attachment anxiety with burnout observed in the current study, could be explained by different underlying mechanisms. This might imply that differential strategies are required to support individuals high in attachment anxiety compared with those high in attachment avoidance.

In light of Ronen and Mikulincer's (2009) observations, a potentially helpful strategy for individuals high in attachment avoidance could include offering a confidential and safe space for employees to air their grievances about perceptions of fairness at work. This might include group sessions, such as peer supervision or reflective practice, which may also enable problem-solving with colleagues, potentially facilitating resolution of perceived difficulties.

Attachment anxiety was significantly associated with higher levels of burnout and secondary trauma in the current sample. Evidence suggests that individuals high in attachment anxiety may inadvertently overwhelm others due to persistent requests for help and support (Tan, Zimmermann, & Rodin, 2005). Supervisors and line

managers may help anxiously attached employees by monitoring their requests for support and assisting them to reflect on the helpfulness of these requests. This could establish a platform from which to encourage the individual to develop their self-efficacy, with the ultimate objective of the employee learning to internalise the supervisor's compassionate approach to difficulties, thus enabling them to self-soothe at times when it may not be appropriate to seek help. This is speculative and further research is required to explore the mediating effects of available support (quantity and quality) on the relationship between attachment anxiety and compassion fatigue in this population.

Attachment anxiety is associated with hyper-activation of the attachment system, leading to efforts to self-regulate which may interfere with effective caregiving, contributing to compassion fatigue (Pardess et al., 2014). Emotional coping skills workshops could therefore be a useful option for such individuals. Through enhanced ability to self-regulate negative affect, it is possible that such employees may have increased capacity to offer compassionate and appropriate care to patients and their families. This may reduce experience of compassion fatigue through reducing residual compassion stress (Figley, 2002) and through fostering a sense of achievement, which is an important protective factor against burnout (Maslach, Schaufeli, & Leiter, 2001).

Resilience was significantly negatively associated with secondary trauma and burnout in this study. Potter et al. (2013) reported on an education program which aimed to educate oncology nurses about compassion fatigue and increase their resilience against it. A significant reduction in compassion fatigue scores was noted from pre- to post-intervention. Furthermore, this reduction persisted at three and six months post-intervention. Targeting resilience may therefore be a potential means of reducing compassion fatigue amongst palliative care nursing staff.

This research adds to the growing body of evidence which suggests that attachment orientation is influential in the development of compassion fatigue and compassion satisfaction amongst employees. This was the first study to explore this relationship in a sample of hospice and palliative care nursing staff, although other researchers have explored associations between attachment orientation and burnout or work stress in hospice nurses (Hawkins et al., 2007; Ostacoli et al., 2010; Gama et al., 2014). This adds support to the idea that attachment theory is a useful framework for understanding work-related variables (Harms, 2011).

Strengths and limitations

A strength of this study is that the researcher met with every participant face-to-face meaning that ambiguous questionnaire items could be discussed and explained, increasing the likelihood that participants were responding in the way intended by the measure, and reducing rates of missing data. Meeting participants in person also allowed an opportunity to discuss their work. Although a qualitative element was not included in the current study, it provided interesting insight into the work of hospice nursing staff and increased the researcher's understanding of the concepts under investigation. It should be noted however, that by completing the measures in the presence of the researcher, there may have been demand characteristics and potential for social desirability bias may have increased.

An additional strength concerns use of well validated and reliable self-report measures of attachment (ECR), compassion fatigue (Pro-QOL) and resilience (BRS). However, Bride, Radey, and Figley (2005) recommend use of more than one measure of compassion fatigue since no single measure is believed to capture every aspect of this construct. Due to low internal consistency of the Pro-QOL burnout sub-scale, it would have been useful to include an additional, reliable measure of burnout, such as the Maslach Burnout Inventory (Maslach & Jackson, 1981).

Various limitations of this research should be taken into account when interpreting the findings. Recruitment methods mean that there is likely to have been a strong selection bias. Nineteen hospices were initially approached but the current sample comprises nursing staff from only eight sites. Perhaps rates of compassion fatigue were highest in those sites for which consent for participation was not obtained. Average rates of compassion fatigue in this sample were in the low range, which may support this hypothesis. In addition, participants were asked to opt into the research, introducing further potential bias, although it is difficult to know in which direction this might occur. It may be that participants high in compassion fatigue would be less likely to volunteer as they may feel too burned out to take on additional tasks. Alternatively, the research may have felt particularly pertinent to individuals high in compassion fatigue, increasing the likelihood of volunteering.

There was a lack of diversity in this sample, in both gender and ethnicity, reducing generalisability of results. However, this may reflect the predominance of white British females within the nursing profession in the UK so it could be argued that this is representative of hospice and palliative care settings. Low numbers of unqualified staff in the present sample prevented comparisons with qualified staff. The sample size for this study was small, although with the current total of 64 participants, effect size of .18, three predictor variables and 5% significance, the actual power achieved was 0.8 (Faul et al., 2007).

Limitations of the IATs employed in this study, which failed to correlate significantly with any of the other variables, have been discussed above. Much more work on attachment-related IATs is required before we can begin to comprehend the underlying processes in this measure but as other authors using similar IATs report significant results (e.g., prediction of negative affect in the study by DeWitte et al., 2008), this may be a valuable direction for further research.

Finally, whilst significant associations have been identified, the current findings do not provide insight into the causal mechanisms underlying these relationships, as a cross-sectional design was employed. In order to address this limitation, use of experimental designs, such as that employed by Pardess et al. (2014), could further our understanding in this area.

Directions for future research

Existing evidence demonstrates significant associations between attachment orientation and burnout (e.g., Pines, 2004; Ronen & Mikulincer, 2009; Reizer, 2015), and an emerging evidence base indicates associations between attachment orientation and compassion fatigue/compassion satisfaction. Future research should focus on exploring the mechanisms that may account for these relationships. As adult attachment remains reasonably stable over time (Mikulincer & Shaver, 2007a; Tacón, 2006), individuals at heightened risk are likely to persist in their vulnerability towards compassion fatigue. Therefore, it is important to identify variables underpinning the relationship between attachment orientation and compassion fatigue so that appropriate interventions can be established.

Further development of implicit measures of attachment may also further our understanding of associations between attachment orientation and compassion fatigue. Whilst self-report measures offer a reliable and valuable insight into adult attachment patterns, use of implicit measures may contribute something unique to our understanding. For example, there is extensive evidence suggesting that the IAT is able to predict a range of behaviours, including social judgements and physiological responses (Greenwald, Poehlman, Uhlmann, & Banaji, 2009). It would be interesting to explore the potential of the IAT to predict attachment related behaviours, such as proximity or support seeking, in comparison to the ability of self-report measures.

A larger sample would increase power and generalisability of these results and may allow comparisons of qualified and unqualified nursing staff to be made. Maslach and Leiter's (1997) model of burnout proposes that perceived lack of control or authority in the workplace is a key contributor to burnout. It would be interesting to test if the increased authority and control which may come with a more senior role influences the relationship between attachment and burnout amongst hospice staff.

Finally, assessment of compassion fatigue relied on a single self-report measure in this study. Inclusion of a more objective measure, such as rates of absence from work through illness may yield interesting data and this is worthy of exploration in future research.

Conclusions

These findings contribute to the literature by providing evidence that suggests that attachment orientations are significantly associated with secondary trauma, burnout and compassion satisfaction in hospice and palliative care nursing staff. Resilience failed to significantly predict any of the criterion variables, suggesting that there are additional variables which can explain the observed associations. Future research should explore the mechanisms underlying the relationship between attachment orientation, secondary trauma, burnout and compassion satisfaction. An implicit measure of attachment orientation failed to contribute to the current findings but it is suggested that continued development of this implicit measure is a worthwhile avenue for further research.

The current findings have implications for clinical practice, including identification of those most at risk and offers of additional support through educational workshops, reflective practice groups and carefully attuned supervisory relationships. If such interventions are able to reduce rates of compassion fatigue, this could benefit

the wider team as well as individual staff members, and potentially reduce economic pressure on an already overstretched profession.

Appendix A – Study advertisement poster

UNIVERSITY OF Southampton

Researcher name: Miranda Allonby, Trainee Clinical Psychologist

ERGO Study ID number: 18140

An exploration of compassion fatigue amongst hospice and palliative care nursing staff

My name is Miranda Allonby and I am a Trainee Clinical Psychologist at the University of Southampton. I am requesting your participation in a study regarding compassion fatigue amongst nursing staff working within hospice and palliative care settings.

This will involve completion of several brief questionnaires and two short computer-based tasks which should take no more than 45 minutes in total. I will then ask you if I may contact you via email in around two months' time with a link to three further brief questionnaires.

I will be attending [*insert site name here*] on [*insert dates here*] and would be very grateful if you could spare the time to participate in this study.

All participants who complete this study will be entered into a prize draw with a chance to win £50, £25 or £10!

If you would like any further information about this research, please contact Miranda Allonby on ma1g13@soton.ac.uk

Appendix B – Demographic information form

Demographics questionnaire – version 3 (06/11/2015)

Study title: An investigation into factors which may contribute to compassion fatigue amongst hospice and palliative care nursing staff

Researcher name: Miranda Allonby

ERGO Study ID number: 18140

Please complete the following details:

NAME:

DATE OF BIRTH:

ETHNICITY:

JOB TITLE:

NUMBER OF YEARS OF PALLIATIVE CARE EXPERIENCE (please round up/down to the nearest year):

NUMBER OF CURRENT WEEKLY WORKING HOURS:

ESTIMATED NUMBER OF HOURS OF DIRECT PATIENT CONTACT PER WEEK

ARE YOU CURRENTLY IN A MARITAL OR LONG-TERM RELATIONSHIP? YES / NO

IS THERE ANYTHING YOU WOULD LIKE TO ADD WHICH YOU FEEL MAY BE RELEVANT TO THIS STUDY?

_____
_____
_____
_____
_____
_____
_____

Appendix C – Professional Quality of Life Scale (Version 5)

Professional Quality of Life Scale (ProQOL)

Compassion Satisfaction and Compassion Fatigue

(ProQOL) Version 5 (2009)

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=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

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 [work] 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 D – Experiences in Close Relationships scale

EXPERIENCES IN CLOSE RELATIONSHIPS

Instructions: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Write the number in the space provided, using the following rating scale:

Disagree strongly			Neutral/mixed			Agree strongly
1	2	3	4	5	6	7

____ 1. I prefer not to show a partner how I feel deep down.

____ 2. I worry about being abandoned.

____ 3. I am very comfort being close to romantic partners.

____ 4. I worry a lot about my relationships.

____ 5. Just when my partner starts to get close to me I find myself pulling away.

____ 6. I worry that romantic partners won't care about me as much as I care about them.

____ 7. I get uncomfortable when a romantic partner wants to be very close.

____ 8. I worry a fair amount about losing my partner.

____ 9. I don't feel comfortable opening up to romantic partners.

____ 10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.

____ 11. I want to get close to my partner, but I keep pulling back.

____ 12. I often want to merge completely with romantic partners, and this sometimes scares them away.

____ 13. I am nervous when partners get too close to me.

____ 14. I worry about being alone.

____ 15. I feel comfortable sharing my private thoughts and feelings with my partner.

____ 16. My desire to be very close sometimes scares people away.

____ 17. I try to avoid getting too close to my partner.

____ 18. I need a lot of reassurance that I am loved by my partner.

____ 19. I find it relatively easy to get close to my partner.

____ 20. Sometimes I feel that I force my partners to show more feeling, more commitment.

____ 21. I find it difficult to allow myself to depend on romantic partners.

____ 22. I do not often worry about being abandoned.

____ 23. I prefer not to be too close to romantic partners.

____ 24. If I can't get my partner to show interest in me, I get upset or angry.

____ 25. I tell my partner just about everything.

____ 26. I find that my partner(s) don't want to get as close as I would like.

____ 27. I usually discuss my problems and concerns with my partner.

____ 28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.

____ 29. I feel comfortable depending on romantic partners.

____ 30. I get frustrated when my partner is not around as much as I would like.

____ 31. I don't mind asking romantic partners for comfort, advice, or help.

____ 32. I get frustrated if romantic partners are not available when I need them.

____ 33. It helps to turn to my romantic partner in times of need.

____ 34. When romantic partners disapprove of me, I feel really bad about myself.

____ 35. I turn to my partner for many things, including comfort and reassurance.

____ 36. I resent it when my partner spends time away from me.

Brennan, K.A., Clark, C.L., & Shaver, P.R. (1998). Self-report measurement of adult attachment: An integrative overview. In In J.A. Simpson & W.S. Rholes (Eds.), Attachment theory and close relationships (pp. 46-76). New York: The Guildford Press.

Appendix E – The WHOTO

The WHOTO (Fraley & Davies, 1997)

Who is the person you most like to spend time with?

Who is the person you don't like to be away from?

Who is the person you want to be with when you are feeling upset or down?

Who is the person you would count on for advice?

Who is the person you would want to tell first if you achieved something good?

Who is the person you can always count on?

Appendix F – Attachment figure information form

Attachment figure information form

Please tell us the following information about _____

Date of birth:

Nickname:

Relationship to you (e.g. mother, best friend):

Job:

Hair colour:

Eye colour:

Favourite hobby:

Favourite sport:

Favourite music:

Favourite drink:

Car make:

Habit:

Now please tick alongside the FOUR items that most remind you of _____

Appendix G – The Brief Resilience Scale

BRIEF RESILIENCE SCALE

Please indicate the extent to which you agree with each of the following statements by using the following scale:

1 = strongly disagree

2 = disagree

3 = neutral

4 = agree

5 = strongly agree

____ 1. I tend to bounce back quickly after hard times.

____ 2. I have a hard time making it through stressful events.

____ 3. It does not take me long to recover from a stressful event.

____ 4. It is hard for me to snap back when something bad happens.

____ 5. I usually come through difficult times with little trouble.

____ 6. I tend to take a long time to get over set-backs in my life.

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International journal of behavioural medicine, 15(3)*, 194-200.

Appendix H – The Patient Health Questionnaire-4

PHQ-4

Over the last 2 weeks, how often have you been bothered by the following problems?

(Use " **X** " to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
Feeling nervous, anxious or on edge				
Not being able to stop or control worrying				
Little interest or pleasure in doing things				
Feeling down, depressed, or hopeless				

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.

Appendix I – Participant information form (Time 1)

UNIVERSITY OF Southampton

Participant Information Sheet – Time 1 (Version 3, 06/11/15)

Study title: An investigation into factors which may contribute to compassion fatigue amongst hospice and palliative care nursing staff

Researcher name: Miranda Allonby

ERGO Study ID number: 18140

Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.

What is the research about?

I am Miranda Allonby, a Trainee Clinical Psychologist at the University of Southampton. I am conducting research into compassion fatigue amongst hospice and palliative care nursing staff as part of my Doctoral research. Compassion fatigue is often described as "the cost of caring" (Figley, 1995) as it can occur when individuals invest significant levels of compassion and empathy into the care of others. Compassion fatigue is associated with negative consequences for both the individual and the wider team in which they work. For example, it can increase anxiety, feelings of helplessness, sleep disturbance and result in higher rates of sickness and absence from work. I am interested in exploring features which may make individuals more vulnerable to development of compassion fatigue so that in future, those most at risk could potentially be offered support which may prevent it.

Why have I been chosen?

I am seeking participants from amongst the nursing teams working within palliative care and hospice sites across the South of England.

What will happen to me if I take part?

If you choose to take part in this study, you will be asked to complete several brief questionnaires and two short computer-based tasks which should take no more than 45 minutes in total. If you agree, I will then contact you again around two months later, via email, letter or in person, with a request to complete three of the original questionnaire measures. These should take no more than 15 minutes to complete and at Time 1, I will ask you to identify which method of contact would be preferable to you at Time 2. The Time 1 measures need to be completed face-to-face as they include computer-based tasks for which the main researcher needs to be present.

One aspect of this research concerns the ways in which individuals relate to romantic partners (in current and past relationships). As part of the study, I will ask you to think about how you feel in romantic relationships and to provide some very basic details of someone with whom you have a close relationship (e.g. current partner). These details

might include hair colour, first name, profession, etc., but will not allow the person you are thinking of to be identified. All data that you provide will be anonymised.

Are there any benefits in my taking part?

Whilst there may not be any direct benefits to you in participating in this research, you will be contributing to an evidence base which could potentially help other nursing staff working in hospice and palliative care settings in the future. Palliative care staff may be at higher risk of developing compassion fatigue than nursing staff in other fields due to the highly emotive nature of their work.

Are there any risks involved?

This research will explore the ways in which individuals relate to romantic partners. Some people may find this uncomfortable due to the sensitive nature of the topic area. However, this questionnaire has been used extensively in different populations with no reported negative effects. There is no obligation to complete the research once you have started, and you may stop at any time should you feel distressed. If you do wish to stop and feel that you have any questions or issues that you would like to raise, you can speak to me at the time, or alternatively, email me at ma1g13@soton.ac.uk. If you would prefer to speak to someone else, you may contact my supervisor, Dr Lusia Stopa, via email at L.Stopa@soton.ac.uk

No other risks of participating in this research have been identified.

Will my participation be confidential?

All information gathered throughout this study will be kept strictly confidential. Data will be anonymised, stored securely in a locked cabinet and analysed using research codes so that individual participants cannot be identified from their data. Electronic data will be stored on a password protected computer. Publications produced as a result of this work will not contain any identifiable data.

What happens if I change my mind?

Participants have the right to withdraw at any point during the study without giving a reason for doing so. Participants will not be affected if they choose to withdraw and this decision will remain confidential.

What happens if something goes wrong?

If you have a concern or complaint regarding any aspect of this study, you can contact the Research Governance Office at Southampton University (Research Governance Office, George Thomas Building 37, Room 4079, University of Southampton, Highfield, Southampton, SO17 1BJ) via email (rgoinfo@soton.ac.uk) or by calling 02380 595058.

Where can I get more information?

If you would like any further information about this research, please contact the main researcher (Miranda Allonby) on ma1g13@soton.ac.uk.

Appendix J – Consent form (Time 1)

UNIVERSITY OF Southampton

CONSENT FORM – TIME 1 (Version 3, 06/11/2015)

Study title: An investigation into factors which may contribute to compassion fatigue amongst hospice and palliative care nursing staff

Researcher name: Miranda Allonby

ERGO Study ID number: 18140

Please initial the box(es) if you agree with the statement(s):

I have read and understood the information sheet (06/11/15/version 3) and have had the opportunity to ask questions about the study. ☐

I agree to take part in this research project and agree for my data to be used for the purpose of this study ☐

I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected ☐

Name of participant (print name)……...……

Signature of participant……

Date……...…….……

Appendix K – Debriefing form (Time 1)

UNIVERSITY OF Southampton

An investigation into factors which may contribute to compassion fatigue amongst hospice and palliative care nursing staff
Time 1 Debriefing Statement (Version 3, 06/11/15)

ERGO ID: 18140

The aim of this research is to explore factors that might increase the risk of compassion fatigue amongst hospice and palliative care nursing staff.

If we are able to identify factors that increase an individual's risk, we may be able to develop interventions targeted specifically at people who are most vulnerable. Your data will help our understanding of the relationship between individual risk factors and compassion fatigue. Once again results of this study will not include your name or any other identifying characteristics. The research did not use deception. You may have a copy of this summary if you wish.

As agreed, I will contact you again in around two months' time, via email, post or in person (you can choose whichever method is best for you), to ask if you would be willing to complete three further, very brief questionnaires. Upon completion of those questionnaires, a more detailed debriefing statement will be issued but if you choose not to continue to participate in this study, I will send the debriefing statement to you at that time.

Although individual results cannot be provided from this research, a summary of the overall findings will be provided upon request (please email Miranda Allonby at ma1g13@soton.ac.uk).

The following resources are recommended if you feel that you are suffering with compassion fatigue or burnout and would like some further information or support:

Overcoming compassion fatigue: A practical resilience workbook by Martha Teater and John Ludgate (2014).

Compassion fatigue in nursing: Healing professional quality of life by Vidette Todaro-Franceschi (2012).

http://www.supportline.org.uk/problems/stress.php contains useful information and contact details of agencies who can help support you in dealing with stress.

http://www.getselfhelp.co.uk contains many useful strategies and techniques for coping with a range of mental health difficulties, including worksheets and guidance to help learn skills such as mindfulness and relaxation.

Contact your Human Resources Department who may be able to signpost local support networks or contacts.

Alternatively, you could seek out a supervisor, Line Manager or mentor who understands the pressures of your work and may be able to support you to identify strategies to alleviate current stress.

If you have any further questions please contact me, Miranda Allonby, by emailing ma1g13@soton.ac.uk.

Thank you for your participation in this research.

Signature Date _____

Name: Miranda Allonby

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 3856, email fshs-rso@soton.ac.uk

Appendix L – Participant information form (Time 2)

UNIVERSITY OF Southampton

Participant Information Sheet – Time 2 (Version 3, 06/11/15)

Study title: An investigation into factors which may contribute to compassion fatigue amongst hospice and palliative care nursing staff

Researcher name: Miranda Allonby

ERGO Study ID number: 18140

Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.

What is the research about?

I am Miranda Allonby, a Trainee Clinical Psychologist at the University of Southampton. I am conducting research into compassion fatigue amongst hospice and palliative care nursing staff as part of my Doctoral research. Compassion fatigue is often described as "the cost of caring" (Figley, 1995) as it can occur when individuals invest significant levels of compassion and empathy into the care of others. Compassion fatigue is associated with negative consequences for both the individual and the wider team in which they work. For example, it can increase anxiety, feelings of helplessness, sleep disturbance and result in higher rates of sickness and absence from work. I am interested in exploring features which may make individuals more vulnerable to development of compassion fatigue so that in future, those most at risk could potentially be offered support which may prevent it.

Why have I been chosen?

I am seeking participants from amongst the nursing teams working within palliative care and hospice sites across the South of England. I am contacting you now as you have kindly completed the first part of this research, and at that time, agreed that I may contact you in approximately two months' time in order to request your participation in the second part of the study. At that time I asked for your preferred method of contact (via email, post or to meet again in person) and am therefore contacting you via your chosen method.

What will happen to me if I take part?

If you choose to take part in this study, you will be asked to complete three brief questionnaires, which should take no more than 15 minutes in total. All data that you provide will be anonymised, identifiable only by the research code which was assigned to you during the first part of the study.

Are there any benefits in my taking part?

Whilst there may not be any direct benefits to you in participating in this research, you will be contributing to an evidence base which could potentially help other nursing staff working in hospice and palliative care settings in the future. Palliative care staff may be at higher risk of developing compassion fatigue than nursing staff in other fields due to the highly emotive nature of their work.

Are there any risks involved?

No risks of participating in this research have been identified. However, there is no obligation to complete the research once you have started, and you may stop at any time. If you do wish to stop and feel that you have any questions or issues that you would like to raise, you can email me at ma1g13@soton.ac.uk. If you would prefer to speak to someone else, you may contact my supervisor, Dr Lusia Stopa, via email at L.Stopa@soton.ac.uk.

Will my participation be confidential?

All information gathered throughout this study will be kept strictly confidential. Data will be anonymised and analysed using research codes so that individual participants cannot be identified from their data. Electronic data will be stored on a password protected computer. Publications produced as a result of this work will not contain any identifiable data.

What happens if I change my mind?

Participants have the right to withdraw at any point during the study without giving a reason for doing so. Participants will not be affected if they choose to withdraw and this decision will remain confidential.

What happens if something goes wrong?

If you have a concern or complaint regarding any aspect of this study, you can contact the Research Governance Office at Southampton University (Research Governance Office, George Thomas Building 37, Room 4079, University of Southampton, Highfield, Southampton, SO17 1BJ) via email (rgoinfo@soton.ac.uk) or by calling 02380 595058.

Where can I get more information?

If you would like any further information about this research, please contact the main researcher (Miranda Allonby) on ma1g13@soton.ac.uk.

Appendix M – Consent form (Time 2)

UNIVERSITY OF Southampton

CONSENT FORM – TIME 2 (Version 3, 06/11/2015)

Study title: An investigation into factors which may contribute to compassion fatigue amongst hospice and palliative care nursing staff

Researcher name: Miranda Allonby

ERGO Study ID number: 18140

Please initial the box(es) if you agree with the statement(s):

I have read and understood the online information sheet (06/11/15/version 3) and have had the opportunity to ask questions about the study ☐

I agree to take part in this research project and agree for my data to be used for the purpose of this study ☐

I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected ☐

Name of participant (print name)……..…….……

Signature of participant……..……

Date……..…..……

Appendix N – Debriefing form (Time 2)

UNIVERSITY OF Southampton

An investigation into factors which may contribute to compassion fatigue amongst hospice and palliative care nursing staff

Time 2 Debriefing Statement (Version 3, 06/11/15)

ERGO ID: 18140

The aim of this research is to investigate factors that might contribute towards development of compassion fatigue amongst hospice and palliative care nursing staff. Specifically, this study aims to explore the effects of attachment style and resilience on compassion fatigue.

Attachment style is a term given to describe the ways in which we relate to others, particularly during times of distress. It can be thought of as our position on two separate dimensions: attachment anxiety and attachment avoidance.

Attachment anxiety refers to confidence in an attachment figure's (usually a parent in childhood and a romantic partner in adulthood) availability, attentiveness and ability to reassure us during times of emotional distress. Individuals low in attachment anxiety generally feel confident that their attachment figure will be available and willing to provide support when called upon.

Attachment avoidance refers to the comfort and ease with which a person is able to rely on an attachment figure for support during difficult times. People low in attachment avoidance are likely to feel comfortable in being close to their attachment figure and able to depend on them during times when they themselves feel vulnerable.

Resilience can be defined as the ability to regulate negative emotional reactions to stressful events and to find ways to adjust in the face of difficulties.

We predicted that high levels of attachment anxiety and avoidance, as described above, may increase an individual's risk of compassion fatigue. We also predicted that greater resilience may protect against compassion fatigue, so that those with high levels of resilience will be at lower risk.

Generally speaking, we all have a combination of these characteristics (attachment anxiety, attachment avoidance and resilience) throughout our lifetimes, dependent upon the situations and relationships we experience. However, if a certain attachment style is more strongly associated with compassion fatigue, this may assist us in future in terms of identifying individuals who are most at risk of its development. Furthermore, if resilience does help to protect people against compassion fatigue, we may be able to develop specific support and training programmes to build resilience, which could then be targeted at individuals most at risk.

This research also seeks to investigate the relative advantages and disadvantages of alternative methods of assessing attachment style. As part of this research, you have completed a questionnaire and two short computer-based tasks which are intended to assess attachment anxiety and avoidance. We predicted that these measures might

show different results as attachment is a very difficult concept to report. Attachment style is something we develop unconsciously and is often based on experiences from very early on in our lives. It may be that the questionnaire and computer-based tasks access different parts of our attachment style and this study is a preliminary investigation of this idea.

The final part of this study aimed to assess the stability of resilience and compassion fatigue over time. We predicted that resilience would remain largely stable between the two sessions that you attended. The stability of compassion fatigue over time has not yet been reported. This research aimed to explore this in order to improve our understanding of compassion fatigue so that we may continue to develop strategies to reduce the risk of its development.

Your data will help our understanding of factors that may contribute to compassion fatigue. Once again results of this study will not include your name or any other identifying characteristics. The research did not use deception. You may have a copy of this summary if you wish.

Although individual results cannot be provided from this research, a summary of the overall findings will be provided upon request (please email Miranda Allonby at ma1g13@soton.ac.uk).

- For your information, I again include a list of resources for participants who may feel that they are currently experiencing compassion fatigue and would like to seek support:

- *Overcoming compassion fatigue: A practical resilience workbook* by Martha Teater and John Ludgate (2014).

- *Compassion fatigue in nursing: Healing professional quality of life* by Vidette Todaro-Franceschi (2012).

- http://www.supportline.org.uk/problems/stress.php contains useful information and contact details of agencies who can help support you in dealing with stress.

- http://www.getselfhelp.co.uk contains many useful strategies and techniques for coping with a range of mental health difficulties, including worksheets and guidance to help learn skills such as mindfulness and relaxation.

- Contact your Human Resources Department who may be able to signpost local support networks or contacts.

- Alternatively, you could seek out a supervisor, Line Manager or mentor who understands the pressures of your work and may be able to support you to identify strategies to alleviate current stress.

If you have any further questions please contact me, Miranda Allonby, by emailing ma1g13@soton.ac.uk.

Thank you for your participation in this research.

Signature: Date:

Name: Miranda Allonby

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 3856, email fshs-rso@soton.ac.uk

Appendix O – University of Southampton ethical approval

ERGO [ergo@soton.ac.uk]

To: Allonby M.

17 November 2015 22:42

Submission Number 18140:

This email is to confirm that the amendment request to your ethics form (An exploration of the association between attachment style and compassion fatigue amongst hospice and palliative care nursing staff (Amendment 2)) has been approved by the Ethics Committee.

You can begin your research unless you are still awaiting specific Health and Safety approval (e.g. for a Genetic or Biological Materials Risk Assessment)

Comments

None

Click here to view your submission

ERGO : Ethics and Research Governance Online

http://www.ergo.soton.ac.uk

Appendix P – Research and Development approval for recruitment at two NHS sites

Mrs Miranda Allonby
Taunton and Somerset NHS Foundation Trust
Musgrove Park Hospital
Taunton
Somerset
TA1 5DA

26 November 2015

Dear Mrs Allonby

ID: **An exploration of the association between attachment style and compassion fatigue amongst hopsital and palliative care nursing staff**

EudraCT:

Thank you for submitting all the required documentation for Trust R&D approval. I write to inform you that your study has full R&D approval. Please find attached the Conditions of Trust R&D approval which you are obliged to adhere to.
Please note that according to the 70 day benchmark you should aim to recruit your first participant by 01 February 2016.
You are required to keep copies of all your essential documents relating to this study. Please download a copy of the relevant Investigator Site File template from the R&D website:

Your project is subject to R&D monitoring and you will be contacted by our office to arrange this.
Please note: A condition of approval is that any changes need to be timeously notified to the R&D office. This includes providing copies of:
. All NRES substantial amendments and favourable opinions;
. All Serious Adverse Events (SAEs);
. NRES Annual Progress Reports;
. Annual MHRA Safety Reports;
. NRES End of Study Declaration;
. Notifications of significant breaches of GCP or protocol

Please quote the above RHM No. On any correspondence with our office.

Should you, or any of your team, require training in any of the policies and procedures required to ensure compliance with the conditions of approval, please refer to the R&D Training website

for an up-to-date calendar of training events.

Yours sincerely

Research Governance Officer

Clinical Governance
R&D Department

Mrs Miranda Allonby
Taunton and Somerset NHS Foundation Trust
Musgrove Park Hospital
Taunton
Somerset
TA1 5DA

26 November 2015

Dear Mrs Allonby,

Letter of access for research.
An exploration of the association between attachment style and compassion fatigue amongst hospital and palliative care nursing staff

As an existing NHS employee you do not require an additional honorary research contract with this NHS organisation. We are satisfied that the research activities that you will undertake in this NHS organisation are commensurate with the activities you undertake for your employer. Your employer is responsible for ensuring such checks as are necessary have been carried out. This letter confirms your right of access to conduct research through for the purpose and on the terms and conditions set out below. This right of access commences on **26 November 2015** and ends on **31 July 2016** unless terminated earlier in accordance with the clauses below.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this NHS organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving permission to conduct the project.

You are considered to be a legal visitor premises. You are not entitled to any form of payment or access to other benefits provided by this organisation to employees and this letter does not give rise to any other relationship between you and this NHS organisation, in particular that of an employee.

While undertaking research through you will remain accountable to your employer **Taunton and Somerset NHS Foundation Trust** but you are required to follow the reasonable instructions of your nominated manager in this NHS organisation or those given on her/his behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by this NHS organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with policies and procedures, which are available to you upon request, and the Research Governance Framework.

You are required to co-operate with in discharging its duties under the Health and Safety at Work etc Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while on premises. Although you are not a contract holder, you must

observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of a contract holder and you must act appropriately, responsibly and professionally at all times.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice (http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf) and the Data Protection Act 1998. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

will not indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 1998. Any breach of the Data Protection Act 1998 may result in legal action against you and/or your substantive employer.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that this NHS organisation accepts no responsibility for damage to or loss of personal property.

We may terminate your right to attend at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of this NHS organisation or if you are convicted of any criminal offence. Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

If your circumstances change in relation to your health, criminal record, professional registration or any other aspect that may impact on your suitability to conduct research, or your role in research changes, you must inform the NHS organisation that employs you through its normal procedures. You must also inform your nominated manager in this NHS organisation.

I also enclose a copy of this letter for you to forward on to your employer's HR Department.

Yours sincerely,

Research Governance Officer – Divisions A&C

Appendix Q – Site specific Research and Development approval letters

26 January 2016

Miranda Allonby

Dear Miranda

Letter of access for research: An exploration of the association between attachment style and compassion fatigue amongst hospice and palliative care nursing staff

This letter confirms your right of access to conduct research at , including the Outreach Centres based at as part of your doctoral research into compassion fatigue. This right of access commences on **7th January 2016** and ends on **31 July 2016**. You do not require an additional honorary research contract with Your employer (Taunton and Somerset NHS Foundation Trust) is responsible for ensuring that all necessary checks have been carried out.

You are considered to be a legal visitor to this site, and as such must act in accordance with policies and procedures, which are available to you on request.

Whilst undertaking research at you will remain accountable to your employer, Taunton and Somerset NHS Foundation Trust, but you are required to follow the reasonable instructions of the management team in this organisation.

Yours sincerely,

Head of Education and Research

GG/JMB

14 July 2015

Miranda Allonby

Dear Miranda

Education and Research Committee has reviewed your request to undertake research into compassion fatigue at the hospice. We would be very happy for you to spend time researching here. Please keep up to date with the work you are doing and your findings.

Yours faithfully

Chair of Education and Research Committee

13th January 2016

Miranda Allonby

Dear Miranda

Letter of access for research: An exploration of the association between attachment style and compassion fatigue amongst hospice and palliative care nursing staff

This letter confirms your right of access to conduct research at as part of your doctoral research into compassion fatigue. This right of access commences on **18th January 2016** and ends on **31 July 2016**. As an exisiting NHS employee, you do not require an additional honorary research contract with this organisation. Your employer (Taunton and Somerset NHS Foundation Trust) is responsible for ensuring that all necessary checks have been carried out.

You are considered to be a legal visitor to this site, and as such must act in accordance with policies and procedures, which are available to you on request.

Whilst undertaking research at you will remain accountable to your employer, Taunton and Somerset NHS Foundation Trust, but you are required to follow the reasonable instructions of the management team in this organisation.

Yours sincerely

Director of Nursing & Patient Services

Miranda Allonby
Building 44a - Clinical Psychology
University of Southampton
University Road
Southampton
SO17 1BJ

05th February 2016

Dear Miranda

Letter of access for research: An exploration of the association between attachment style and compassion fatigue amongst hospice and palliative care nursing staff

This letter confirms your right of access to conduct research at as part of your doctoral research into compassion fatigue. This right of access commences on **5th February 2016** and ends on **31 July 2016**. As an exisiting NHS employee, you do not require an additional honorary research contract with this organisation. Your employer (Taunton and Somerset NHS Foundation Trust) is responsible for ensuring that all necessary checks have been carried out. Please ask your employer to complete the enclosed document and return to:

You are considered to be a legal visitor to this site, and as such must act in accordance with policies and procedures, which are available to you on request.

Whilst undertaking research at you will remain accountable to your employer, Taunton and Somerset NHS Foundation Trust, but you are required to follow the reasonable instructions of the management team in this organisation.

Yours sincerely,

Director of Patient and Family Services

Enc: Staff Information Form to be completed by Taunton and Somerset NHS Foundation Trust

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