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SELF-COMPASSION, APPRAISAL, STRESS, AND COPING IN TRAINEE CLINICAL PSYCHOLOGISTS

Section A: What is the prevalence of stress and distress in Trainee Clinical Psychologists?

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Section B: Does self-compassion mediate the relationship between threat appraisal and stress and anxiety in trainee clinical psychologists?

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My thanks to all those who took the time to participate in this research project. To my supervisor Monika and all the staff at Salomons, thank you for helping me achieve what seemed impossible. Thank you to my family and friends who supported me through this course. Finally, to my wife Natalie, thank you for your patience, support, and understanding none of this would be possible without you, my love to you always.

Summary of the MRP portfolio

Section A: Is a systematised literature review looking at the prevalence of stress, anxiety, psychological distress, and low self-esteem in trainees. Factors that influence these factors were also investigated. Following a literature search and quality assessment 14 articles were examined. Overall findings showed a small but significant number of trainees experienced high levels of stress, anxiety, self-esteem problems, and work adjustment problems across each of the samples. Factors such as appraisal and coping strategy, personality, and course structure and support were found to influence stress, anxiety, and work adjustment in trainees. Clinical implications suggested that consideration of implementing self-care strategies in course structure may be beneficial. Research implications identified that self-compassion may be a factor that influences stress and anxiety in trainees.

Part B: Presents a cross-sectional study investigating the relationship between self-compassion, appraisal, stress, anxiety, and coping in trainee clinical psychologists. Results were analysed using correlational, independent t-test, and mediation statistical analysis. It highlighted that self-compassion partially mediated the relationship between threat appraisal, anxiety and stress. Clinical implications of the results suggested that self-care strategies and teaching would be beneficial for trainees. Research implications identified that investigation is needed to ascertain the impact of stress and distress beyond training, as these findings may be normal and do not appear to impact on pass rates and employment.

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Major Research Project

Section A: What is the prevalence of stress and distress in Trainee Clinical Psychologists?

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Abstract

Evidence suggests that burnout and compassion fatigue is a common problem for clinical psychologists. Furthermore, research indicates that new and novice professionals are at higher risks of difficulties. Therefore, a systematised literature review was conducted to gather primary and secondary research to answer how prevalent stress, anxiety/psychological distress, and low self-esteem problems are within trainee clinical psychologists, and what factors influence this. Fourteen studies were found to be relevant to this topic. One study was excluded due to poor quality. The results indicated that a small but significant number of trainees sampled experience high levels of stress, anxiety, depression, distress, and low self-esteem. Factors such as stress appraisal, coping strategy, personality, and course structure and support influence trainee difficulties. Implications for research indicated that other factors such as self-compassion might be useful to investigate, as it has been shown to be a factor in anxiety and depression in clinical populations.

Keywords: *trainee clinical psychologist, stress, anxiety, coping, distress*

Introduction

Literature on distress in the workplace suggests work-based stress and mental health disorders are common. The Health and Safety Executive (HSE) (2017) figures report the estimated prevalence and incidence of stress, anxiety, and depression have remained stable at around 1,600 per 100,000 people per year. These figures suggest that professionals (welfare and medical) have the highest prevalence rates, with workload and lack of support being two main causes of stress (HSE, 2017). Research also shows that mental health disorders have become the leading cause of sickness absence in the UK, with health care workers disproportionately more likely to experience such conditions (Harvey, Laird, Henderson, & Hotopf, 2009). Indeed, the research suggests that working in healthcare may increase the risk of experiencing mental health difficulties. Cross-sectional surveys have found strong associations between health professionals and the risk of affective and stress disorders (Wieclaw, Agerbo, Mortensen, & Bonde, 2006) as well as depression and anxiety (Stansfeld et al., 2013; Stansfeld, Rasul, Head, & Singleton, 2011). Research in this area focuses on compassion fatigue, vicarious trauma or secondary traumatic stress, and burnout (Ray, Wong, White, & Heaslip, 2013; Sprang, Clark, & Whitt-Woosley, 2007), finding this more prevalent in mental health workers than other professions (Iacovides, Fountoulakis, Kaprinis, & Kaprinis, 2003; Paris & Hodge, 2010).

It may be that mental healthcare work exposes staff to factors that increase the risk of stress and distress, which impacts on their role. Factors such as personal trauma history, caseload, work/life satisfaction, negative self-beliefs, working conditions, caseload, financial problems, and type of client work have been found to contribute to compassion fatigue and burnout in healthcare workers (Ray, et. al. 2013; Sprang, et. al, 2007; Turgoose, & Maddox 2017). Additionally, research shows level of responsibility and unpredictability of the work results in high emotional investment that contributes to mental health difficulties in staff (Stansfeld et al., 2011). Furthermore, the prevalence rate of mental health difficulties is reported to be higher in mental health staff than other occupations (Walsh, & Walsh, 2001).

For example, burnout and depression have been shown to be conceptually linked and develop in tandem in mental health workers (Ahola, Hakanen, Perhoniemi, & Mutanen, 2014; Morse, Salyers, Rollines, Devita, & Pfahler, 2012; Walsh, & Walsh, 2001). Additionally, burnout has been shown to predict symptoms of depression, psychological ill-health, and life dissatisfaction (de-Beer, Pienaar, & Rothman Jr, 2016; Hakanen, & Schaufeli, 2012). Such patterns have been shown to impact on staff motivation, productivity, and health status (Bakker, & Costa, 2014; Harvey et al., 2009).

As part of front-line mental health services, Clinical Psychologists experience significant stress as part of their professional work with complex clients in stretched and challenging organisations. Within their role, increased distress due to factors such as occupational demands (e.g. high case load), depression, compassion fatigue, and burnout can impair the Clinical Psychologists professional role, which can impact on patient care (Smith & Moss, 2009). Recent research shows that in a sample of UK clinical psychologists, around two thirds had lived experience of mental health problems, with around half of those reluctant to disclose to colleagues or managers due to factors such as fear of negative judgement or impact on their career (Tay, Alcock, & Scior, 2018). This finding is in line with other studies that found Clinical Psychologists fail to seek support for mental health difficulties due to professional factors such as lack of time, difficulty finding support, and seeing such need as a professional threat (fearing they may become stigmatized) (Bearse, McMinn, Seegobin, & Free, 2013; Hannigan, Edwards, & Burnard, 2004). Research also suggests that new and younger clinical psychologists and therapists have a higher risk of experiencing psychological distress (Craig & Sprang, 2010; Volpe et al., 2014).

One question that arises from this evidence is how are Trainee Clinical Psychologists (trainees) affected by these difficulties, as their professional qualification requires them to work in such contexts. In their student and clinical role, trainees' inexperience and high pressure (due to demands of assessment and learning) may put them at risk of similar distress as clinical psychologists (Skovholt & Ronnestad, 2003). University students in general have

been shown to have higher prevalence rates of mental distress than the rest of the population, being less likely to seek support (Li, Dorstyn, & Denson, 2014). Furthermore, in a survey of mental health students, trainees were found to have higher ratings of stress (Galvin & Smith, 2015). Research also shows that educational bottlenecks, such as trainee clinical courses, are associated with reduced student wellbeing (Cruwys, Greenway, & Haslam, 2015). A recent survey of trainees found that around 67% of the sample had lived experience of mental health problems, with 29% having current experience at the time of the survey (Grice, Alcock, & Scior, 2018). Such evidence has resulted in discussion as to the benefit of making trainees aware of stress and distress in professionals, suggesting that seeking help for such difficulties could be normalised (Holttum, 2015). Given this evidence a key question can be asked, do trainees experience the same psychological difficulties as qualified Clinical Psychologists and other mental health professionals?

To answer this question, we need to consider several factors before searching the literature. Trainees are students who have been through a rigorous selection process that has a high pass rate into a profession that has one of the best retention rates across mental health professionals (Scior, Bradley, Potts, Woolf, & Williams, 2014). Furthermore, robust support such as supervision, reflective practice, and managers who assess and monitor trainees is another safeguard against psychological distress. These factors will have an impact on the trainees' stress and coping, which would need to be accounted for as they are not as consistently present in professional work. Furthermore, we need to consider how professional difficulties such as compassion fatigue, secondary traumatic stress, and burnout may manifest in trainees who are at the beginning of their professional career.

In reviewing models of compassion fatigue, we see that although symptoms have a rapid onset, prolonged exposure to trauma clients is a precursor (Sorrenson, Bolick, Wright, & Hamilton, 2017). It is unlikely that trainees will have prolonged exposure to such demanding clients, given the monitoring of their caseload and work demands, and thus making the risk of compassion fatigue nominal. Nevertheless, it may be that given the nature

and pressure of training, trainees are more at risk of the features of burnout: overwhelming exhaustion, feelings of cynicism and detachment, and a sense of infectiveness and/or lack of accomplishment (Maslach & Leiter, 2016). By using models of burnout, it is possible to identify potential symptoms or factors that would indicate trainee difficulty.

Recent models of burnout focus on imbalances of job stress that result in dysfunction like high occupational stress, anxiety/emotional strain, perception that individual resources are inadequate, and defensive coping, e.g. avoidance (Maslach & Leiter, 2016). The demands placed upon trainees in completing the Clinical Psychology course is likely to evoke stress in all of these areas. Therefore, to identify the levels of trainee impairment, the literature search needs to focus on ascertaining to what degree do trainees experience high or excessive stress, anxiety/psychological distress, and defensive (or maladaptive) coping strategies, as these are key signs of burnout.

Aims

In considering these factors this literature review aims to focus on the following questions:

- What is the prevalence of high or excessive stress, anxiety/psychological distress, or low self-esteem in trainees?
- If there is a prevalence of high or excessive distress, what factors influence the trainees' experience of these and how does this impact on their coping?

Method

To answer the review questions, a Systematized Review process was used (Grant & Booth, 2009). This type of review was chosen as it incorporates elements of a Systematic Review but is not as rigorous, due to time and manpower limitations.

Inclusion/Exclusion criteria

This review sought to identify primary or secondary research that related to trainee clinical or counselling psychologists and the prevalence of psychological distress. As clinical psychology is not unique to the UK international studies that used samples from American, Canada, and Australia were included, as they were considered comparable to UK courses. However, American and Canadian graduate courses also include training for academic and non-clinical pathways. Therefore, any research from these sources would need to be conducted on the clinical pathway only. The full inclusion-exclusion criteria can be seen in table 1.

Table 1: Inclusion and exclusion criteria for review

Inclusion criteria	Exclusion criteria
• Published in peer-reviewed journals • Recruitment of trainee clinical psychologists only • Focus on the impact of clinical training on mental or physical wellbeing	• Participants include other psychology professions, e.g. industrial • Outcomes/measures are not related to mental or physical wellbeing • The Clinical Course is not comparable to UK clinical course

Literature Search

Using Ovid and EBSCO, search terms (see below) were entered into four databases, PsycINFO, MEDLINE, CINAHL (Cumulative Index to Nursing & Allied Health Literature), and ERIC (Education Resources Information Centre) on the 15th December 2017. However, this search resulted in only five relevant studies returned, and so a second search using the same databases and search tools, was conducted using a broader search term on 12th January 2018. The combined results of both searches can be seen in the PRISMA diagram in figure 1.

Search terms

Based on the aims of the literature review, a mapped search for relevant Medical Subject Headings (MeSH) using the following terms: Clinical Psychology Trainee, Stress, and Burnout. This process generated the selection of the following search terms: clinical psychology trainee, clinical psychology graduate training, therapist trainee, academic stress, occupational stress, stress. Based on grouping relevant terms, the following Boolean strategy was used: (‘Clinical psychology trainee’ OR ‘Clinical psychology graduate training’ OR ‘therapist trainee’) AND (‘Academic stress’ OR ‘occupational stress’ OR ‘stress’).

For the second search, broader terms were developed based on Keywords from the five studies returned in the first search. The second search used the following Boolean strategy: (‘trainee clinical psychologist’ OR ‘trainee psychologist’) AND (‘stress’ OR ‘coping’ OR ‘anxiety’ OR ‘adaptation’).

Results

The search returned a total of 14 articles based on the inclusion/exclusion criteria, 13 of these were primary source and one secondary. Of the primary resource articles, eight of the papers used a UK trainee sample, three used a US sample, one used an Australian trainee sample, and one used a sample taken from UK, US, Canadian, and Australian trainees. The remaining study was a literature review that used a variety of studies, mainly using US and Australian samples. A summary of the studies is shown in table 2.

Figure 1: PRISMA diagram showing search results and selection

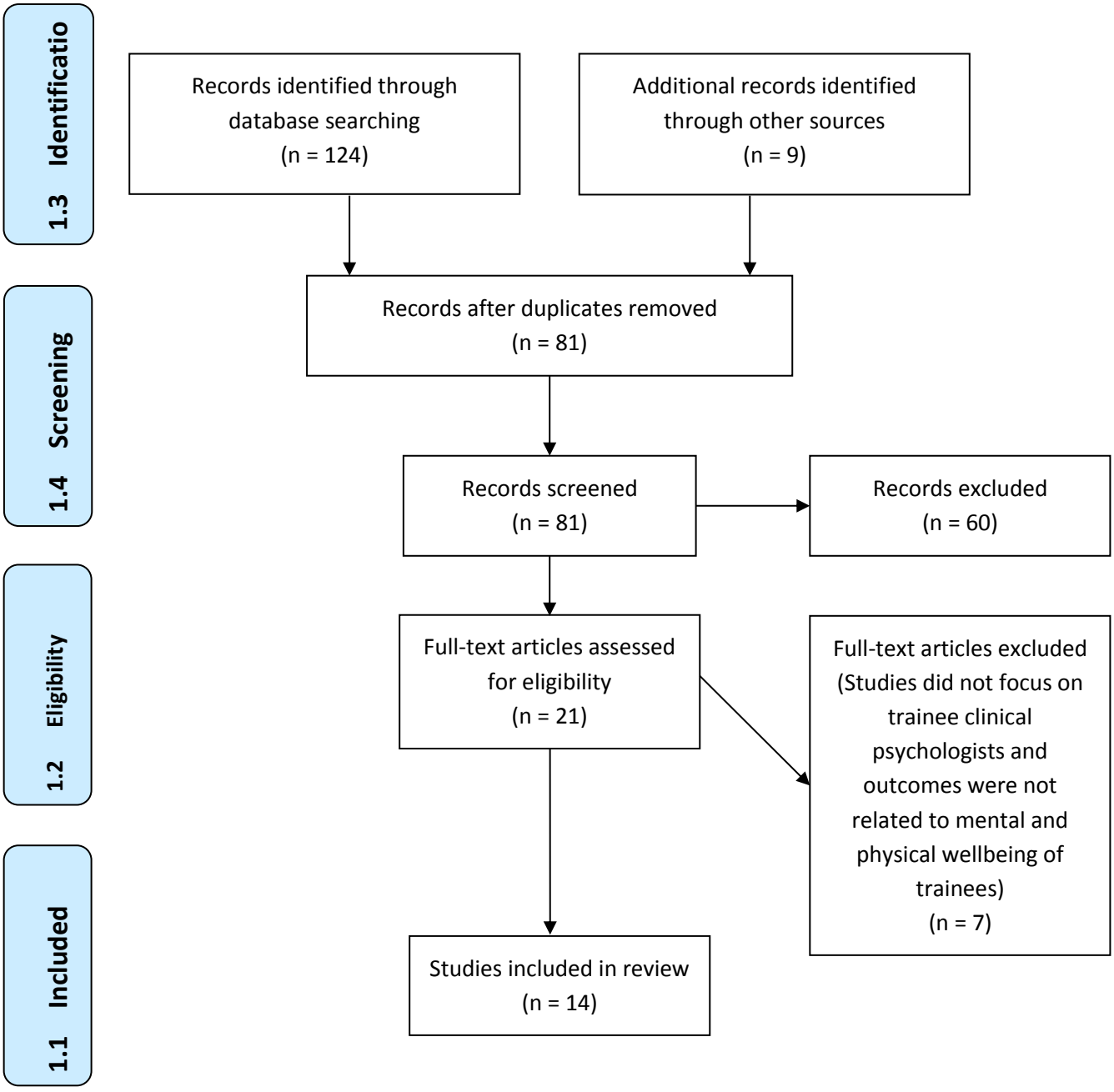

Table 2: Summary of Studies obtained through a literature search

Authors	Type of study/Sample	Measures	Main findings
Adams & Riggs (2008)	Cross-sectional survey design N 129 (37.7% response rate) (83.7% female) Trainee clinical and counselling psychologists US students	Trauma symptom inventory (TSI) Defence Style questionnaire Experience questionnaire (self-developed)	38.7% reported a history of personal trauma 74.3% reported some form of trauma work training 25% reported working with trauma clients with no formal training in trauma Trauma therapy experience ranged between 2 or more semesters 8 – 15% exceeded cut of the score for TSI 31% exceeded cut of the score for at least one TSI scale51.2% self-sacrificing defence, 7% maladaptive defence Trauma symptoms significantly related to defence style (moderated by trauma history and experience) Self-sacrificing defence style is a risk factor for vicarious trauma.
Brooks, Holttum, & Lavender (2002)	Cross-sectional 15 Randomly chosen UK training courses 639 potential participants N 364 (57%) 83% female 15% male 2% did not answer	Millon Index of Personality Styles (MIPS) Employee Assistance Program Inventory (EAPI) Author developed questionnaire around expectations Significant Others Scale (SOS)	The overall sample was well adjusted regarding personality 8% showed poor adjusted personality Percentage of the sample above cut off scores indicating problematic adaptation: Self-esteem 23% Anxiety 18% Depression 14% Substance abuse 30% 41% have at least 1 or more problems (6% had all 4)

			Poorly adjusted trainees were significantly different from adjusted for psychological problems and less satisfied (expectations) with the course Poor adjustment predicts poor adaptation and impact on life mediates the relationship
Cushway (1992)	Cross-sectional study N287 (76% return rate) across all UK courses (210 female 77 male) 124 year 1 130 year 2 33 year 3	Stress survey – author, developed Coping Questionnaire General Health Questionnaire 28 (GHQ)	Year 2 & 3 have higher stress levels than year 1 27% reported that the course was causing high stress (48% said moderate) Those who rated high stress were scored significantly higher on GHQ, somatic symptoms, anxiety/insomnia, and depression Separated/divorced had higher depression vs single/partners Participants above cut off for GHQ caseness have significantly more stress and more likely to use avoidant strategies Stress and GHQ positively correlated 59% of trainees show the prevalence of psychological symptoms
Hill, Wittkowski, Hodgkinson, Bell, & Hare (2016)	Cross-sectional design – Sample of third-year trainees only taken from one course (26 Participants (23 female three male). UK University	Repertory grid technique – designed by the authors	Found to have low self-esteem, anxiety, stress, unsettled, and lacking appropriate work-life balance. Felt that these were due to the training and would resolve upon completion. Personal and professional self-seen as similar, which suggests vulnerability to low self-esteem, anxiety, and depression in the face of negative feedback.
Humphreys, Crino, & Wilson (2017)	Cohort design – trainees from Australian clinical and forensic courses sampled at three time points during a placement (beginning, middle, and completion).	Clinical Skills Assessment Tool (CSAT) Depression Anxiety & Stress Scale (DASS)	A subgroup of trainees presenting with severe to extremely severe scores on DASS 25% subgroup that is within clinical boundaries for DASS

	T1 N 59 (46 female 13 male) T2 N 53 (42 female 11 male) T3 N 37 (32 female 5 male)	NEO-PI-R (personality) Coping Styles Questionnaire	and NEO-PI-R, which impacts on CSAT scores 27% of the sample endorsed response in the clinical or problematic range on at least one questionnaire Depression scale on DASS negatively correlated with CSAT Conscientiousness scores from NEO-PI-R positively correlated with CSAT
Kaeding et al. (2017)	Cross-sectional survey using an international sample from USA, Canada, UK, & Australia (highest responces from USA 62% and Austrailia 12%) 1,172 participants (17.7% male 82.3% female)	Demographic questionnaire developed by the authors Maslach Burnout Inventory (emotional exhaustion subscale only) Young Schema Questionnaire – short form Physical Health Questionnaire	49.2% of participants scored in the high burnout range The high burnout group had significantly higher rates of physical health symptoms (tiredness, neck/back pain) Unrelenting Standards was only the only schema that accurately predicted Burnout group (61.8% accuracy) Dependence, unrelenting standards, social isolation & insufficient self-control was 62.4% accurate a predicting burnout group
Kumary & Baker (2008)	Cross-sectional survey design N 109 (41% response rate) 87 female 21 male 63 full time 55 part time UK counselling psychology course	Counselling Psychology Trainee Stress Survey – author developed based on the Cushway 1992 paper General Health Questionnaire 12	High areas of stress are: finding time, funds, and suitable placements (group 1) and academic pressure and professional socialisation (group 2) – this relates to two main sources of stress 1= practical/ organisational and 2 = academic/professional training. Higher stress ratings for younger trainees for the placement subscale High stress correlated positively with poorer General Health and demographics
Kuyken, Peters, Power, & Lavender (1998)	Cross-sectional survey design 183 trainees (150 female, 33 male) across 1st and 2nd-year trainees recruited from 15 random UK courses	Developed their stress appraisal measure Ways of coping questionnaire Perceived stress scale EAPI	25% experienced difficulties with self-esteem, work adjustment, depression, & anxiety 42% men reported substance abuse problems with less approach coping Older trainees reported less control and high external

		Quality of life questionnaire	stressors Across years there was a sig diff for work adjustment and depression Appraisal of threat results in high avoidance coping. Partial support for Lazarus model
Kuyken, Peters, Power, Lavender, & Rabe-Kesketh (2000)	Mixed cohort design (year follow up from Kuyken et al., 1998) Sample taken from 15 random UK programmes Time 1 - 183 participants – 1st (105) and 2nd (78) years Time 2 – 167 (91.3% of first sample) (96) 2nd and (71) 3rd years.	10 Domains of EAPI – anxiety, depression, self-esteem problems, marital problems, family problems, external stressors, interpersonal conflict, work adjustment, substance abuse, and problem minimisation	Trainees adaptation is in the normal range of employed adults Over three years there is an increase in work adjustment problems, depression and interpersonal conflict (significantly between year 1 to 2) A significant number (25% of the sample at least one standard deviation above norms) have poorer adaptation on self-esteem, work adjustment, anxiety & depression. For anyone domain, 75% of the sample scored above one standard deviation and 37% at two standard deviations
Kuyken, Peters, Power, & Lavender (2003)	Mixed Longitudinal design Sample the same as the Kuyken, Peters, Power, Lavender, & Rabe-Kesketh (2000) but used additional measures and different analysis	Stress appraisal measure (threat & control) author-developed Ways of Coping Questionnaire Significant Others Scale Anxiety, depression, self-esteem, and work adjustment scales from EAPI	Appraisals of threat and lack of control predict worse psychological adaptation and impact negative coping strategies Escape and avoidance coping is correlated with problems with psychological adaptation Social support, supervisor support, and course support help trainees perceive stressors as controllable

Makadia, Sabin-Farrell, & Turpin (2015)	Cross-sectional survey 564 participants (57 males and 507 females) from various UK courses (33.3% response rate)	General Health Questionnaire – 12 Secondary Traumatic Stress Scale (STSS) Trauma and Attachment Belief Scale (TABS) Trauma Screening Questionnaire (TSQ) Self – report items developed by the authors around exposure to trauma work, stress and demographics	No correlation between exposure to trauma and psychological distress But there was a correlation between exposure to trauma and symptoms of trauma – supports a Secondary Traumatic Stress model Level of stress also impacted on trauma symptoms Greater perceived stress may result in higher trauma symptoms 27% of the sample above the cut-off for caseness on GHQ 20 trainees met the cut off for increased risk of PTSD on the TSQ
Myers, Sweeney, Popick, Wesley, Bordfeld, & Fingerhut (2012)	Cross-sectional survey design 488 participants from Graduate programmes across the US (84% female 16% male)	The author developed a demographics questionnaire Godin Leisure Time exercise questionnaire The multi-dimensional Scale of Perceived Social Support Emotion regulation questionnaire Mindfulness Practice Philadelphia Mindfulness Scale Perceived Stress Scale	Healthy sleep and greater levels of support reduces stress levels Mindfulness acceptance is related to stress Cognitive appraisal is related to stress (suppression was positively related to stress)

Pakenham & Stafford-Brown (2012)	Literature review but no clear methodology stated	No clear criteria for assessing the papers within the review	Clinical Psychology Trainees are vulnerable to elevated stress Undue stress can negatively impact trainees personal and professional functioning (resulting in less than optimal standards of care for clients) There is a dearth of studies on stress in this population and no published intervention studies, Incorporating self-care strategies into clinical psychology training is recommended Third-wave CBT stress management interventions have been efficacious in comparable populations.
Rummell (2015)	Cross-sectional 119 US doctoral students participated (mainly 1-4 years into training) 77.3% female, 18.5% male, 1.7% transgender, 2.5% did not report	Developed their measures based on DSM V classifications to measure anxiety and depression symptoms Inventory of College Students Recent Life Experiences Perceived stress scale (PSS)	Students early in programme more prone to work overload Graduate or financial situation most stressful aspect of their life Experience high levels of physical health symptoms 49.1% 3 or more symptoms of anxiety 39.2% 5 or more symptoms of depression 34.8% reported clinically significant symptoms of anxiety and depression Sig correlations for Phys health and mental health symptoms and amount of school-related tasks and anxiety Overall they experience high levels of physical and mental health symptoms

Assessment of quality

Four different tools were used to assess the quality of the 14 articles, to account for the different observational methodologies used by the primary resource research and literature review used in the secondary. Quality assessment tools for observational studies can be problematic, as they may lack rigour (da Costa, Cevallos, Altman, Rutjes, & Egger, 2011). To account for this problem, appraisal tools were selected based on Sanderson, Tatt, & Higgins (2007) guidelines. Therefore, the following tools were used: Appraisal tool for Cross-Sectional Studies (AXIS)(Downes, Brennan, Williams, & Dean, 2016) (see Appendix A), Mixed Methods Appraisal Tool (MMAT) (Pluye, et.al, 2011), Critical Appraisal Skills Programme (CASP) Systematic Review Checklist (CASP, 2017)(see Appendix B), and CASP Cohort Study Checklist (CASP, 2017)(see Appendix C). Each of these tools employs a checklist format, with guidelines on how to assess each section of the study. However, a limitation to these tools is that it requires the user to make subjective decisions based on their understanding of the study and the tools guidelines. Therefore, it may yield variations in overall assessment of quality based on the user.

Only one study was excluded from the review based on the quality assessment. The literature review by Pakenham & Stafford-Brown (2012) was found to have unclear or missing information based on the quality assessment. Therefore, it was not possible to have confidence in their findings and apply them to the questions of this review. Two of the studies were a follow up of an earlier study and use the same dataset (Kuyken, Peters, Power, Lavender, & Rabe-Heskety, 2000; Kuyken Peters, Power, & Lavender, 2003). However, the analysis performed on by the studies were conceptually different, one comparing scores between the two time samples (Kuyken et al., 2000) and the other conducting a pathway analysis of trainee stress and adaptation (Kuyken et al., 2003). Therefore, as each study provides different evidence for trainee stress and distress, both are included in the review. The remaining studies appeared to be of good quality and follow the guidelines that are set out in the assessment quality tools (see tables 3, 4 & 5), although there are some areas of weakness that will be discussed in the review.

Table 3: Mixed method quality assessment

		Hill, Wittkowski, Hodgkinson, Bell, & Hare, (2016)
Qualitative Issues	Are the sources of qualitative data relevant to the research question	Yes - clearly outlined the procedure and how it answers the research question
	Analysis of data relevant	Yes
	Are findings related to the context	Yes - they are discussed in relation to clinical training
	Have they considered how findings relate to researchers influence	This was not clearly done - a trainee collected the data, and potential bias around this was not discussed
Quantitative descriptive issues	Is the sampling strategy relevant to address the quantitative research question	Yes
	Is the sample representative of the population	Moderately so - it is a small sample size
	Are measures appropriate	Yes
	Is there an acceptable response rate	Moderately so - it is a small sample size
Mixed methods issues	Is the mixed methods research design relevant to the question/s	Yes
	Is the integration of qualitative and quantitative data relevant to address the research question	Yes - they are looking at constructs and how they relate to professional practice and identity
	Is appropriate consideration given to the limitations associated with this integration in a triangulation design	Unclear - several limitations were mentioned, but consideration of the limitations of the repertory grid technique was not discussed

Table 4: Quality assessment of cross-sectional studies using AXIS

	Adams & Riggs (2008)	Brooks et al. (2002)	Cushway (1992)	Kaeding et al. (2017)	Kumary & Baker (2008)	Kuyken et al. (1998)	Makadia et al. (2015)	Myers et al. (2012)	Rummell (2015)
Aims/Objectives clear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate design	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
sample size justified	No - there was no clear power calculation	Yes	Yes	No	Yes	Yes	Yes	No	No
Target population clearly identified	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample representative of the population	Don't Know - the sample was not compared to similar studies	Yes	Yes	Unclear as demographic information was not reported	Yes	Yes	Yes	Yes	Yes
Selection process appropriate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	Adams & Riggs (2008)	Brooks et al. (2002)	Cushway (1992)	Kaeding et al. (2017)	Kumary & Baker (2008)	Kuyken et al. (1998)	Makadia et al. (2015)	Myers et al. (2012)	Rummell (2015)
Measures appropriate for non-responders	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Were outcome variables/risk factors appropriate to aims	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Were outcome variables/risk factors measured appropriately	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Stats appropriate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clear methods section	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Basic data described	Yes	Yes	Yes	Not clearly - frequencies around sample were not clear	Yes	Yes	Yes	Yes	Yes

	Adams & Riggs (2008)	Brooks et al. (2002)	Cushway (1992)	Kaeding et al. (2017)	Kumary & Baker (2008)	Kuyken et al. (1998)	Makadia et al. (2015)	Myers et al. (2012)	Rummell (2015)
Response rate appropriate	37.70%	57%	76%	Not clearly reported due to the type of recruitment - snowballing	41%	60.20%	33.30%	Not clearly reported	Not reported clearly but authors indicated it was low
Information about non-responders	No - not possible given the methodology	No - not possible given the methodology	No - not possible given the methodology	No - not possible given the methodology	No - not possible given the methodology	No - not possible given the methodology	No - not possible given the methodology	No - not possible given the methodology	No - not possible given the methodology
Results internally consistent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
All results reported	Yes	Yes	Yes	No - information on frequencies of the sample were limited	Yes	Yes	Yes	No	Yes
Were conclusions justified by results	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	Adams & Riggs (2008)	Brooks et al. (2002)	Cushway (1992)	Kaeding et al. (2017)	Kumary & Baker (2008)	Kuyken et al. (1998)	Makadia et al. (2015)	Myers et al. (2012)	Rummell (2015)
Limitations discussed	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes
Declaration of interests noted	None noted	None noted	Yes	None noted	None noted	Yes	None noted	None noted	None noted
Ethical approval was given	Not mentioned	Not mentioned	Not mentioned	Yes	Yes	Yes	Yes	Yes	Yes

Table 5: Quality assessment of cohort studies using CASP cohort checklist

	Kuyken et al. (2003)	Kuyken et al. (2000)	Humphreys, Crino, & Wilson (2017)
Did the study address a clearly focused issue?	Yes	Yes	yes
Was the cohort recruited in an acceptable way?	Yes used 15 randomly selected courses	Yes used 15 randomly selected courses	Yes but it was a small limited sample
Was the exposure accurately measured to minimise bias?	Yes	Yes	Yes
Was the outcome accurately measured to minimise bias?	Yes	Yes	Yes
Have the authors identified important confounding factors?	Yes	Yes	Yes
Have they taken account of the confounding factors in the design/analysis?	Yes	Yes	Unclear - but this was mentioned in the discussion section
Was the follow up of subjects complete enough?	Yes	Yes	Yes
Was the follow up long enough?	Yes	Yes	Yes
Do you believe the results?	Yes	Yes	Yes
Can the results be applied to the local population?	Yes	Yes	With caution - small sample size
Do the results of the study fit with other available evidence?	Yes	Yes	Yes

Review

This review is structured in the form of answers in response to the questions identified from the introduction, with synthesis of the evidence at the end of each section. The overall findings and gaps in the evidence will be in the discussion section.

What is the prevalence of high or excessive stress, anxiety/psychological distress, or low self-esteem in trainees?

Levels of stress

There are a variety of models and definitions for stress that have been developed through research (Cohen, Kessler, Gordon, 1997). To assess stress within a population, a clear model and definition is needed so that appropriate measures and outcomes are investigated (Dewe, O'Driscoll, & Cooper, 2012; Kopp et al., 2019). The three dominant models are: the stimulus model that focuses on environmental stressors, the transactional model that focuses on psychological, affective, and environmental appraisal by the individual, and the stimulus-response model that assesses activation of specific physiological systems (Kopp et al., 2010). Within work-related stress, the transactional theory by Lazarus and Folkman (1984) has been the dominant model. It encompasses the bi-directional nature of stress between the individual and environment, and has been the most instrumental model in shaping stress and coping research (Biggs, Brough, & Drummond, 2017). Furthermore, based on this model several tools have been developed that allow researchers to measure elements of stress in individuals such as perceived stress (Cohen, Kamarck, & Mermelsein, 1983), cognitive appraisal (Peacock & Wong, 1990), and coping (Carver, 1997), with scores being easily interpretatable in relation to the transactional model. Therefore, this model is the most used and suitable for measuring work-related stress within research (Biggs et al., 2017).

The literature on trainee stress has limited references to models and definitions and uses a variety of measures to identify prevalence rates, making it difficult to compare and interpret levels of stress among trainees. Of the six studies that investigated stress, only one

used the transactional model as a way to understand and measure stress (Kuyken, Peters, Power, & Lavender, 1998). The other studies (Cushway, 1992; Humphreys, Crino, & Wilson, 2017; Kumary & Baker, 2008; Myers, Sweeny, Popick, Wesley, Bordfeld, & Fingerhut, 2012; Rummell, 2015) did not report using a model or operational definition of stress. Therefore, the studies use different tools to measure stress within trainees, such as author-developed questionnaires (Cushway, 1992; Humphreys, Crino, & Wilson, 2017 Kumary, & Baker, 2008), the perceived stress scale (PSS) (Kuyken et al., 1998; Myers, et al., 2012; Rummell, 2015), and the Depression Anxiety & Stress Scale (DASS) (Humphreys, Crino, & Wilson, 2017). Each of these measures uses a different approach to conceptualise and measure stress, which makes comparison of findings problematic as they may not be equivalent or have the same validity. The DASS uses items that tap into characteristics of depression and anxiety (Gomez, 2013), while the PSS uses appraisal of perceived stress by the individual (Cohen, Kamarck, & Mermelsein, 1983), while the two author-developed measures used focus groups to identify stressors from training. Furthermore, the time frame for measuring stress is also different across these measures, the DASS uses a two week timeframe whereas the PSS uses a month and the author-developed questionnaires just asked trainees to rate if they have experienced a stressor and its intensity. Due to these conceptual and methodological differences across these stress measures, comparison of stress prevalence across these studies will be done separately first and then summarised at the end of this section.

The two studies that used self-developed questionnaires, found varying levels and prevalence of stress among clinical (Cushway, 1992) and counselling (Kumary, & Baker, 2008) trainees. Both studies found trainees experienced similar stressors such as course structure, workload, poor supervision, and poor work-life balance. However, the rating of high stress levels was different, with 27% of Cushway's (1992) sample reporting high levels of stress compared to 53% of Kumary & Baker's (2008) sample. Across the two studies different demographic variables were associated with high stress. In the clinical sample 2nd and 3rd year trainees had higher stress ratings than 1st years (Cushway, 1992), but in the

counselling sample female and younger trainees reported higher levels of stress (Kumary & Baker, 2008). Interpretation and comparison of these studies should be done cautiously, as there are key differences between the samples. Cushway's (1992) sample accounted for 76% of the trainee population compared to 41% for Kumary & Baker (2008). Also, Cushway's (1992) sample is dated, with the trainee population being much higher and in different context with professional pressures, which makes generalising findings to current trainees problematic. As the questionnaires were not normed, and is specific to trainees only, it is not possible to classify these findings as abnormal or excessive for trainees. Furthermore, the specificity of the measure to trainees makes comparison to other populations impossible, so we cannot identify if the prevalence rate is similar or higher than other professionals.

The three studies that used the PSS also found high levels of stress in their samples but due to lack of population comparison it is unclear if this is excessive. There is also mixed findings with regards to factors associated with stress. One study did not report the mean and standard deviation of the PSS (Myers et al., 2012), reporting statistical comparisons for demographic factors and stress only. Nevertheless, the two remaining studies reported high levels of perceived stress among a sample of Canadian (Rummell, 2015), and UK (Kuyken et al., 1998) trainees. Across the three studies different factors were found to be associated with high stress such as sexual minority students (Rummell, 2015), unmarried and older students, and students with an unfavourable cost of living to income rate (Myers et al., 2012). In contrast to the other studies Kuyken, Peters, Power, & Lavender (1998) appeared to find no significant differences between stress and demographic variables in UK trainees. However, their results did indicate a bimodal distribution with regards to stress, suggesting there may be a sub-group of students experiencing greater stress than others. As the PSS has no cut-off or clinical classifications for stress, higher scores mean higher stress only. Therefore, to determine excessive stress, researchers need to compare group means to other populations. Only one study compared trainees' scores to a normative data set, finding that trainees report relatively high levels of perceived stress (Kuyken et al., 1998). However, no comparison data

is provided and it is mentioned only in the discussion section, limiting the generalisability of this finding. Overall, the evidence from the two studies that reported the PSS scores shows high stress in a sample of Canadian and UK trainee. However, both studies have a limited sample of trainees, which limits generalisability of the findings. Although Kuyken et al (1998) report a 60.2% response rate they only sampled from 15 Universities out of 24 that were running doctoral training. Furthermore, the lack of comparison to a normative sample, such as one developed for the PSS by Cohen & Janicki-Deverts (2012), prevents us from establishing if the stress levels reported in trainees is indeed abnormal or excessive.

The study that used the DASS also found high stress levels in Australian trainees during their placement (Humphreys et al., 2017), which is a similar finding to the other studies. The mean trainee stress scale on the DASS was statistically significantly higher than the normative sample of the DASS, but not to a sample of first year university students (Humphreys et al., 2017). Therefore, this level of stress may be normal for university level individuals and not excessive. However, within the sample between 4 -11% of trainees rated their stress as severe to extreme, but due to the studies low participant number this equates to between 4 – 6 trainees. As mentioned previously, the stress scale from the DASS is based on characteristics of anxiety and depression within the scale. It could be argued that it does not measure stress directly and is influenced by experiences of depressive and anxious states. Therefore, the combination of low participant numbers and confounding measurement factors, limit the inferences of trainee stress.

Overall the samples across the six studies show that trainees report high stress levels during training. However, it is not clear if this stress is excessive or greater than comparative populations and professions such as University students or junior doctors. Furthermore, the generalisability of the findings across these studies is limited, as the sample size across the studies is generally low and may not be representative due to confounding variables such as responder bias. There is also little evidence that other factors may impact or influence stress in trainees. The studies that investigated demographic variables found mixed or no significant

correlations between stress and other factors. It may be that the differences in measures, or time of sampling, contributed to this mixed finding.

Anxiety/psychological distress

Anxiety and psychological distress are two broad psychological constructs, and as a result several tools were employed to measure them across the literature. Although psychological distress is a nebulous term, within the trainee literature the following areas were measured: depression, general psychiatric morbidity and mental wellbeing, burnout, and traumatic stress. Although there are similarities, as well as differences, across these constructs, the tools used to measure them employ distinct subscales. Therefore each construct will be looked at individually before synthesis of the evidence.

Anxiety and Depression

Five of the studies in this review measured anxiety and depression in trainees using a range of measures, resulting in mixed findings. Three of the studies used the Employee Assistance Programme Inventory (EAPI) to measure psychological adaptation in trainees, which includes scales for anxiety and depression. These studies defined problematic, or high, anxiety or depression as scores that are one standard deviation above the normative sample of the EAPI. Based on this criteria, the studies found that between 18% (Brooks, Holttum, & Lavendar, 2002) and 25% (Kuyken et al, 1998, Kuyken et al., 2000) of the sample reported problematic anxiety and 14% (Brooks et al., 2002) and 25% (Kuyken et al, 1998, Kuyken et al., 2000) for depression. One of these studies (Kuyken et al., 2000) was a one year follow up of the Kuyken et al., (1998) sample. An individual analysis of trainee scores across the two time points found that 76% of trainees who were above the cut-off at time one continued to be above it at time 2 for at least one subscale of the EAPI (Kuyken et al., 2000), although this is not specifically for the anxiety subscale. These findings would suggest that there is a small sample of trainees who experience elevated anxiety and depression during training, in comparison to EAPI normative data, which persists across the three years.

In a study on Candian trainees, using an author developed questionnaire using the DSM 5 criteria as a basis for its items, researchers found signficant levels of anxiety and depressive symptoms. Across the sample, 49.11% and 39.29% of the sample reported experiencing three or more symptoms for anxiety and depression respectively (Rummell, 2015). These levels were claimed to be higher than the general and a medical student population, although it is not clear how this difference was established. Nevertheless, these findings suggest that trainees experience symptoms of anxiety and depression during training.

In contrast to these prevlance rates of anxiety and depression, a study on Australian trainees found much lower rates among their sample. Using the DASS to measure anxiety and depression across three time points during a trainee placement, between 3 – 8% of the sample reported severe to extreme levels of anxiety (Hymphreys et al., 2017). However, as stated previously, the low participant numbers in this study limit the conclusions that can be drawn from this fininding.

Psychiatric morbidity & mental well-being

The studies measuring psychiatric morbidity/mental well-being employed the General Health Questionnaire (GHQ), finding similar prevalence rates. The GHQ is a tool that detects short-term psychiatric disorders, what they term ”caseness”, in the general population. In UK clinical (Cushway, 1992) and counselling (Kumary & Baker, 2008) trainee samples the prevalence of caseness rates is reported at 59% and 49% respectively. In a more recent cross-sectional study by Makadia, Sabin-Farrell, & Turpin (2017) they found in a national sample of 564 UK trainees, representing 33.3% of the trainee population at a single time point, 27% scored above the cut-off for caseness. These rates have been shown to be higher than for medical students, Junior House Officers, and civil servants (Cushway, 1992) as well as for other mental health professionals (Makadia et al., 2017). However, these findings are based not based on statistical analysis, which limits the conclusions that can be drawn.

Traumatic stress

Two studies focused on traumatic stress in trainees using a UK sample (Makadia et al., 2017) and a US sample in Texas only (Adams & Riggs, 2008), reporting similar results. Within the UK sample, 20 trainees (3.55% of the sample) were found to exceed the cut-off score of the Trauma Screening Questionnaire, indicating an elevated risk of PTSD (Makadia et al., 2017). Among the two studies the overall trainee samples did not report any signs of trauma symptoms on the Traumatic Symptom Inventory (STI) (Adams, & Riggs, 2008) or the Secondary Traumatic Symptom Scale (STSS) and Trauma and Attachment Belief Scale (TABS) (Makadia et al., 2017). However, individual analysis of TSI scores showed 15% of the US trainee sample exceeded the cut-off score for caseness on all subscales, and 31% of the sample scored above the cut-off score for at least one subscale on the TSI (Adams, & Riggs, 2008). Within the UK sample, there was no association between trauma work and distress; however, exposure to trauma work predicted trauma symptoms in trainees (Makadia et al., 2017). Overall, neither study found any significant vicarious trauma or secondary traumatic stress within their samples. However, it is notable that the US sample had a very low participant rate and was conducted in only one state. The UK sample was taken from all 32 Universities running the Doctorate course, but only accounted for 33.3% of the available population.

Burnout

Within the literature, only one study measured burnout directly in an international sample of trainees (including Australian, American, Canadian, and UK students). Using the Emotional Exhaustion subscale of the Maslach Burnout Inventory (MBI) to investigate schemas in high and low burnout groups, Kaeding et al., (2017) found that 49.2% of their sample scored in the high burnout range, with those in the high burnout group experiencing significantly more physical health symptoms. Although the authors compared this prevalence rate to other studies such as Cushway (1992) and Brooks et al., (2002), concluding that they

were similar, this was not a statistical comparison. Furthermore, lack of comparisons to other populations, e.g. normative samples, limits interpretation of severity of prevalence to other mental health professionals.

Based on the evidence, there is little we are able to surmise due to the way the measure was used. The establishments of the groups was based on arbitrary cut-off points from the MBI manual, which has since been stopped (due to lack of empirical support) in favour of developing burnout profiles (Leiter & Maslach, 2016). Therefore, it is not clear if trainees do experience high levels of burnout or emotional exhaustion.

Summary

The findings within the literature on trainee anxiety and psychological distress are equivocal. Across the studies a small, but consistent, percentage of trainee samples show high levels of anxiety, depression, poor mental well-being, and burnout. Furthermore, although there were no indications of secondary traumatic stress or vicarious trauma in trainees, around a third of the sample experienced caseness levels of symptoms associated with secondary trauma. However, lack of robust comparisons to other populations and professions limit the conclusions that can be made. It may be that these levels are perfectly normal for students or trainees and do not represent excessive or problematic difficulties. Furthermore, the different measures used have resulted in different prevalence rates, which are further confounded by sample size, sampling time, and responder bias. Therefore, the main conclusion that can be drawn is that trainees do experience varying levels of anxiety and psychological distress, but it is not clear if this is problematic or abnormal in comparison to other professions.

Self-esteem

The concept of self-esteem has been described as a personal evaluation made by the individual about themselves in relation to their worth, value, importance, or capabilities (Amirazodi, & Amirazodi, 2011). However, as with any psychological construct, this definition incorporates broad interpretations that may focus on different subjective factors that

may make up the concept of self-esteem. Measurement of self-esteem is problematic as there are various definitions and measures that have been used but few have been robustly validated (Heatherton & Wyland, 2003). A key problem for measuring self-esteem is that it is easily biased by self-report biases, e.g. wanting to be perceived positively. Therefore, any measure of self-esteem must be constructed carefully with a clear understanding around the issues and potential for bias.

The four studies that measured self-esteem found that a small proportion of the sample reported problems with self-esteem; although, none of them used specific definitions or measures. Three of the four studies use the self-esteem problem subscale from the EAPI (Brooks et al., 2002; Kuyken et al., 1998, Kuyken et al., 2000). The other used a repertory grid to investigate trainee constructs of their personal and professional development in a sample of third-year trainees in a single course (Hill, Wittkowski, Hodgkinson, Bell, & Hare, 2016). Both Brooks et al. (2002) and Kuyken et al. (1998) found that 25% of the trainee sample score above the cut-off scores on the self-esteem problems on the EAPI. The prevalence rate for self-esteem problems was found to be present a year later in the Kuyken et al., (1998) sample (Kuyken et al., 2000). Additionally, in a study that investigated trainees' construal of their personal and professional development, a sample of third-year trainees rated their current and ideal self as significantly different, which suggested low self-esteem (Hill, Wittkowski, Hodgkinson, Bell, & Hare, 2016).

Overall, the literature suggests that a small sample of trainees experience low self-esteem. However, none of the studies use a robust definition, measure, or methodology to examine self-esteem. Therefore, it is not clear what these findings mean, given that psychological constructs are often unclear as to what the factors are that make up the construct (Fried, 2017). Given the transition of trainees' role and experience, it may be common and normal that trainees' question themselves and their abilities, given their role as reflective practitioners. The literature also fails to compare trainee self-esteem to other populations, further limiting any robust conclusions on their findings. As a consequence of

this, it is only possible to conclude that trainees may experience some form of low self-esteem, but it is not clear if this is problematic or abnormal.

What factors impact on the trainees' experience of these difficulties and how does this impact on their coping?

The literature on trainee stress and distress shows a consistent finding that a small portion of the sample experience high stress and psychological distress. However, it is not clear if this is excessive or problematic in comparison to other professions or populations. This section is concerned with factors that have been shown in the literature to be associated with high stress and psychological distress in trainees.

Cognitive appraisal and coping strategy

Two of the studies found that appraisal of threat and coping strategy was associated to the trainees' experience of stress and adaptation. Using a author developed appraisal questionnaire and the ways of coping questionnaire, Kuyken et al. (1998) found that appraisals of threat around perceived course stressors are associated with greater avoidance coping, with these two factors predicting a significant amount of the variance in psychological adaptation on the EAPI (work adjustment problems, self-esteem problems, anxiety, and depression). Support from supervisors, the course staff, and a confidante also mediated perceived stress by providing a buffer to help manage stress through less avoidance coping and improving self-esteem, with these factors predicting much of the variance in psychological adaptation (Kuyken et al., 1998). The same measures were used in follow up study on the sample in Kuyken et al. (1998) study a year later. Pathway analysis of the scores at time one and two found appraisals of threat and lack of control significantly predict worse psychological adaptation (anxiety, depression, self-esteem problems, and work adjustment problems) over the three-year course. Threat appraisal was directly associated with psychological adaptation but also indirectly as it was significantly associated to avoidance coping, while appraisal of control was only indirectly linked to psychological adaptation

through increasing avoidance coping (Kuyken et al. 2003). Only home-based support, and not supervisor or course support, was found to moderate psychological adaptation by decreasing avoidance coping, unlike the earlier study (Kuyken et al. 2003). However, they did find that all three support systems are associated with reduced work adjustment problems through less avoidance coping and greater appraisals of control (Kuyken et al. 2003).

Trainee appraisal of their personal and professional self has also been shown to potentially increase the risk of vulnerability to anxiety, depression, and low self-esteem. Using the repertory grid technique researchers found trainees saw their current self significantly different from their ideal self, suggesting low self-esteem (Hill et al., 2016). Furthermore, trainees were found to rate themselves as possessing low intellectual and operational ability and considered their current and professional self as similar, which was hypothesised to increase trainees vulnerability to stress, anxiety, depression and self-esteem (Hill et al., 2016). Trainees also saw their professional self similar to their personal self, which Hill et al. (2016) concluded would increase the risk of anxiety and depression in the face of negative appraisals from the course, supervisors, or peers.

Although conceptually different from coping strategies defence mechanisms are based on the psychological process as individuals will employ them in response to stressful situations in order to cope (Cramer, 1998). Therefore, it is useful to include defence mechanisms in this section. One study found evidence that maladaptive defence mechanisms are associated to the experience of trauma symptoms in trainees (Adams & Riggs, 2008). Using the Defense Style Questionnaire and the TSI they found 7% of their sample of US trainees (in Texas only) employed maladaptive defence styles, which was related to higher ratings of impaired self-reference and dissociation on the TSI (Adams & Riggs, 2008). However, self-sacrificing defence, which is felt to be a mature mechanism, was used by half of the sample, but this had a higher chance of trauma symptoms than the adaptive defence, suggesting that self-sacrificing places trainees at risk of high stress and trauma symptoms (Adams & Riggs, 2008).

In general, the evidence indicates that appraisal and coping strategies impact on trainees' experience of stress and psychological distress. However, in real terms this is an association rather than causation. The evidence suggests that, for the most part, only a minority of trainees experience high stress and distress when sampled, meaning that this may just be a normal process during training. Furthermore, labelling constructs such as appraisal and coping as adaptive or maladaptive is not always useful, as any type of appraisal or coping strategy can be viewed as positive or negative when used in different ways (Dewe et al., 2012). Therefore, it may be that this area needs further investigation to ascertain how coping and appraisal may influence stress and distress in trainees.

Personality

Two studies measured personality directly, one using the Millon Index of Personality Styles (MIPS) (Brooks et al., 2002) and the other using the NEO Personality Index Revised (NEO-PI-R) (Humphreys et al., 2017). Another study investigated how early maladaptive schema's are associated to vulnerability to burnout in trainees (Keading et al., 2017) that is relevant to evidence within this section. Across these three studies evidence suggests that personality factors may influence trainee stress and distress.

In the study by Brooks et al., (2002) personality factors were found to predict poor psychological adaptation. They found that 8% of the sample scored in the maladjusted range for personality factors, and that when compared to the rest of the sample they had significantly poorer scores for self-esteem, work adjustment, depression, anxiety, stressors, and interpersonal problems (Brooks et al., 2002). Furthermore, within the sample personality was found to be a significant predictor for anxiety, depression and work adjustment scores. However, it should be noted that personality only accounted for between 19 – 40% of the variance in the scores. Therefore, personality is only a minor to moderate factor that is associated to psychological distress.

Personality factors were also found to predict trainee learning and competency across placement (Humphreys et al., 2017). When compared across three time points, the conscientiousness scale of the NEO-PI-R and the depression scale of the DASS were found to predict trainee scores on the Clinical Skills Assessment Tool (CSAT) at the end of the placement (Humphreys et al., 2017). The variance explained by these scales ranged between 23% to 28%. However, it should be noted that although there was a positive correlation between conscientiousness and CSAT, personality alone was not able to significantly predict the trainees' end of placement CSAT score. This finding is similar to Brooks et. al., (2002) suggesting that personality is associated with depression and competency, but it is a contributory factor in a complicated process.

In a similar way as personality factors, early maladaptive schemas (EMS) have been shown to predict high and low burnout in trainees (Kaeding et al., 2017). Using a discriminant function analysis to see if early maladaptive schemas (EMS) could predict trainee classification into high or low burnout groups, EMS were better than chance at predicting burnout group (Kaeding et al., 2017). Researchers also found that the unrelenting standards EMS significantly predicted burnout group with 61.8% accuracy, rising to 62.4% when dependence, social isolation, and insufficient control EMS were included (Kaeding et al., 2017). The researchers felt these findings suggest that EMS activation factor in the presence of burnout in trainees.

The evidence suggests that personality factors are associated with trainee distress and learning. However, personality as a construct is a complicated area of individual psychology. Previous ideas about personality traits being fixed have been argued against, with concepts such as free trait theory complicating the construct of personality and its influence in individual motivations and behaviour (Little, 2008). Therefore, it is likely that the influence of personality on trainee distress is likely to be more complicated than these associations suggest.

Course

Course factors such as trainee satisfaction, course support, course structure and teaching, supervision, and even placements have been associated with trainee stress and distress. Eight of the studies employed a measure of trainee perception of the course they are on, using cross-sectional (Adams & Riggs, 2008; Brooks et al., 2002; Cushway, 1992; Kuyken et al., 1998; Makadia et al., 2012; Rummell, 2015), cohort (Kuyken et al., 2003), and mixed (Hill et al., 2016) methodologies.

The year of study has been linked to the experience stress in trainees, with the second and third years having higher levels (Cushway, 1992). Additionally, course structure, workload, and poor supervision are among the top-rated stressors by trainees, suggesting that elements of the course may be responsible for the high levels of stress experienced by them (Cushway, 1992). However, this evidence is based on subjective perceptions made by individual trainees, with frequency analysis used to identify commonly rated stressors. This strategy is likely to fail to identify the variety of stressors experienced by trainees, requiring caution in drawing conclusions from the data. Furthermore, within the literature this finding has not been robustly replicated. Using a similar methodology, Kumary & Baker (2008) failed to find any significant association between year of study and trainee stress. Moreover, one study found contradictory evidence that trainees early on in the course are more vulnerable to work overload, finding that hours spent on coursework was negatively correlated to physical health symptoms (Rummell, 2015). Therefore, it is not clear in what way, if any, year of study is associated with trainee distress.

It may be that rather than year of study, the type of placement the trainee is on across the three years is associated to distress. Across the UK courses trainees the first year of training is usually an adult mental health placement, with the second and third years involving placements with learning disabilities (LD), child and adolescent mental health (CAMHS), and older adult services. The literature indicates that trainees report less control of stressors,

greater work adjustment difficulty, and more interpersonal conflicts across LD, CAMHS, and older adult placements in comparison to the adult mental health placement (Kuyken et al., 1998). However, this finding does not take into account factors such as work load and academic pressure, which increases across the three years and is likely to contribute to trainee stress and lack of control. Nevertheless, in the same study it was found that dissatisfaction with supervisor support while on placement significantly predicted some of the variance in work adjustment and self-esteem problems in trainees (Kuyken et al., 1998). Therefore, it may be that problems on placement, rather than type of placement, may be a significant factor in trainee distress.

Across the literature, the doctorate courses themselves have been associated with trainee distress. In their initial study Kuyken et al. (1998) found that course support predicted the variance in self-esteem and work adjustment problems in the trainee sample. Additionally, in a follow up study Kuyken at al. (2003) found that emotional support from a supervisor moderated the effect of work adjustment problems and that emotional support from the course moderated appraisals of control, with these two factors mediating work adjustment problems at time one and two. Both these studies suggest that support from the course and supervisors may mediate the trainees' experience of stress and adaptation, perhaps through changing their appraisal of threat or control. However, trainee perception of course teaching was found to be related to trainees' trauma experiences. Adams & Riggs (2008) found that trainee reported deficits in trauma training were associated with greater symptoms of stress as measured by the STSS. Similarly, Makadia et al. (2017) also found that levels of stress of clinical work and quality of trauma training are associated to trauma symptoms, with trainees seeing a greater number of clients with trauma having higher levels of trauma symptoms themselves.

In a similar vein, the trainees' expectation and perception of the doctorate course has also been linked with their experience of difficulty and stress. Brooks et al. (2002) found that trainees whose personality was identified as poorly adjusted were less satisfied with aspects of the course such as supervision, clinical work, and impact of training in their life.

Furthermore, when personality factors were controlled for, trainees' ratings of how the course impacted on their life significantly predicted anxiety and depression scores (Brooks et al., 2002). Additionally, Brooks et al. (2002) also found that dissatisfaction with clinical teaching, supervision, course-based support, and impact of training on their life predicted poorer work adjustment in trainees.

Overall the results appear to be mixed with regards to how aspects of the doctoral course influence trainee stress. There is evidence that some aspects of the course can be both a positive and negative influence, such as supervisor and course support. Other factors such as trainee expectation can also influence stress and distress in trainees. However, the subjective nature of the measures and the fact that much of the data is from a single time point limit the generalisability of the findings. Additionally, the responder bias may be a factor in these findings, as trainees will construe much of their distress as a direct response to course demands (Hill et al. 2016).

Discussion

The findings from the literature on trainee stress and distress is largely equivocal with limited generalisability. Across the research there were clear findings within the samples that a large proportion of trainees report high stress. Nevertheless, lack of comparrisons to other populations, and the limits of sample size and lack of follow up or cohort studies means it is not clear if this level of stress is excessive and present throughout training. Another consistent finding is that a small percentage of each of the samples reported trainees who experienced high, or caseness, levels of anxiety, depression, psychiatric morbidity, and low self-esteem. Whether this finding is consistent or robust enough to be labelled a sub-group, a term used within the literature, remains unclear. Factors such as limited sample size, lack of comparison to other populations, response bias, and no robust follow-up or cohort studies would suggest these findings are not generalisable to trainees as a whole. The use of concepts such as psychological adaptation and self-esteem further limit the interpretations that can be made, as

these are subjective concepts that are changeable in their meanings depending on the measure and individual under study.

In regards to factors that influence stress and distress in trainees, the literature is equally mixed. Trainee appraisal and coping strategy have been associated with stress and distress, but this is not a surprising finding given models of stress. What is not clear is if these factors are problematic, as labelling appraisals and coping strategies as adaptive or maladaptive depends on the situation and the impact on the individual, which is not accounted for in the literature. Personality has also been found to be associated with trainee distress and poor adaptation. However, personality as a concept is complex and varied construct and the literature may not account for current ideas of free-trait theory and its impact on motivation and behaviour (Little, 2008). Furthermore, as the findings around stress and distress are not clear, it is uncertain as to what impact personality really has on trainees during training. Finally, course factors have also been shown to be associated to trainee stress and distress, but they are contradictory at times and subjective. The literature shows that factors such as supervision and course support can be both protective and problematic for trainees. Furthermore, trainee expectation of the course is also a contributory factor. But it is unclear what the impact is on the trainee as a whole, because subjective factors can bias responses to trainee experience. Therefore, based on the overall findings it is reasonable to ask what is the impact of these factors on trainees as a whole?

The annual figures that report trainee passing, employment, and retention rates would indicate this impact is minimal. In 2017 the national non-completion rate was 0.79%, with 95.5% of trainees taking up positions in the NHS (Leeds Clearing House, 2017). It also may be that such stress and difficulties are a normal part of professional training for clinical psychologists (Cruwys, Greenway, & Haslam, 2015; Skovholt & Ronnestad, 2003) and may be a temporary state (Hill et al., 2016). Although it is clear qualified clinical psychologists experience varying levels of impairment, the factors that relate to these problems are often organizational rather than due to individual factors such as personality (Hannigan et al., 2004;

Smith & Moss, 2009). The context of the NHS at present is mercurial, with limited funding, diminished workforce, and increasing pressure on patient access. Furthermore, working with people in distress, managing risk, and having to report effective outcomes adds to an organizational environment that is highly stressful. Therefore, it may be that the literature needs to focus on these factors and how they influence trainees rather than subjective factors such as personality or appraisal.

What may be more pertinent is how trainees' use self-care strategies to manage stress within their professional role and from the organisation. As Hollttum (2015) suggests, we may need to help trainees understand their stress and how it can be managed. Furthermore, there is a growing movement within clinical psychology and trainees who are starting to open up about lived experience of mental health difficulties. Previously this was a taboo subject, with many qualified professionals opting to keep such topics private (Charlemagne-Odle, Harmon, & Maltby, 2014). In considering this fact, it may be that the levels of stress and distress in the literature is a normal baseline for trainees, and that a more open and supportive environment where self-care skills can be discussed without fear of stigma would indeed be useful.

Although the literature is quite consistent and clear about trainee difficulties, the paucity of articles and the above considerations, suggest further research is needed. There is a clear link between self-compassion, mental health, and resilience (MacBeth & Bumley, 2012) and the role of self compassion in physical and mental well-being (Hall, Row, Wuensch, & Godley, 2013). There is also a growing literature on how elements of self-compassion, such as mindfulness, can help reduced burnout in qualified trainees (DiBeneditto & Swadling, 2014), improve compassion and self-care in trainees (Boellinghaus, Jones, & Hutton, 2013), and reduce depression, stress, and emotional regulation difficulties (Finlay-Jones, Kane, & Rees, 2017). However, only one study looked specifically at self-care practices such as mindfulness in trainees, finding that such practices account for 43.8% of the variance of

perceived stress (Myers et al., 2012). Therefore, more evidence is needed around how self-compassion impacts on stress within trainees.

One of the main limitations of the literature is the limited time-frame of the samples and level of bias. As common with all cross-sectional designs, the question of stability over time and participation bias limits the generalizability of the findings. Although three studies used a cohort design to measure stability over time, one used such short time frames (Humphreys et al., 2017) we aren't able to gauge how stable these findings are, and the other two (Kuyken et al., 2000; Kuyken et al., 2003) use the same sample followed up one year later, again questioning how stable these findings really are. Therefore, a further area for future research would be to expand on the cohort designs across the three years but also post qualification. Another reason for this would be to allow consistency of measures, as each of the studies in the literature used a variety of measures to investigate one variable, as in the case of stress there was an array of author developed and standardized measures used each with a different focus on how stress could be defined and measured. Such sampling across years/cohorts and post qualification may allow us to evaluate how stable these difficulties are and the impact of them post qualification.

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Section B: Does self-compassion mediate the relationship between threat appraisal and stress and anxiety in trainee clinical psychologists?

Word Count

7,434 (297)

Abstract

Evidence indicates that a small but significant number of trainees experience high levels of stress and anxiety during training. These difficulties are influenced by factors such as cognitive appraisal, coping strategy, and course structure. However, to date there does not appear to be any study investigating the role of self-compassion in trainee stress and anxiety. Based on the literature it was hypothesised that self-compassion would be related to stress, anxiety, and coping strategy but also it would mediate the relationship between appraisal, stress, and anxiety. Using a qualitative cross-sectional study a sample of 188 trainees recruited from 29 Universities completed an online survey measuring stress, anxiety, appraisal, coping, and self-compassion. The results were consistent with previous findings, indicating a sub-group of trainees with high levels of stress and anxiety. Self-compassion was found to be correlated with all measures and partially mediated the relationship with appraisal, stress, and anxiety.

Introduction

Workplace stress, depression, and anxiety problems are becoming increasingly prevalent in mental health workers (Harvey, Laird, Henderson, & Hotopf, 2009). In a review of the literature, Morse, Salyers, Rollins, Monroe-Devita, & Pfahler (2012) found the prevalence rate for burnout in mental health staff ranged between 21-67%, which impacts on organisational function, i.e. high staff turnover, and the care given to patients. At present the NHS has many factors such as staff shortages, increasing waiting times, and increasing demand for services with limited funding that increase the stress on the workforce. As part of the front line services, clinical psychologists have been shown to be at risk of such difficulties. Around 40% of clinical psychologists are reported to experience "caseness" levels of psychological distress (Hannigan, Edwards, & Burnard, 2004). Such difficulties, or what has been called impairments, has an impact on the quality of therapy and care given to patients, but also lead to the use of maladaptive coping, e.g. substance misuse, by clinical psychologists (Smith & Moss, 2009). Additionally, factors such as lack of awareness of impairment or lack of time can prevent psychologists accessing suitable support (Smith & Moss, 2009).

As with clinical psychologists, trainee clinical psychologists (trainees) have a clinical role in front line services, as well as a student role, and have also been shown to experience high levels of stress and psychiatric "caseness" (Cushway, 1992). Despite the paucity of literature in this area, a consistent finding in trainee samples is that a small percentage experience high stress, anxiety, depression, self-esteem problems, and work adjustment difficulties that has been shown to be stable over time and may become more pronounced and prevalent across the three years of training (Kuyken, Peters, Power, Lavender, & Rabe-Hesketh, 2000; Kuyken, Peters, Power, & Lavender, 2003). Investigations around the variables that influence trainee difficulties/impairment have focused on various areas that

relate to the transactional model (Lazarus & Folkman, 1984), which is frequently used to examine stress and distress in populations (Biggs, Brough, & Drummond, 2017). The model has two overall processes, cognitive appraisal and coping (Biggs et al., 2017). Cognitive appraisal is based on the transactional relationship between the individual and the demands of the environment using primary and secondary appraisals (Lazarus & Folkman, 1984). Primary appraisal concerns the impact on the individual's well-being, which can be benign or positive, irrelevant, or stressful (indicating potential harm/loss, threat, or challenge to the individual). Secondary appraisal refers to the individuals potential for coping and control through self-efficacy, situational variables (support), or previous coping styles. The coping process is how the individual deals with the stress and is broken down into two approaches, problem-focused (management of the situation/stressor) and emotion-focused (management of the emotional content). It is important to note that neither problem nor emotion-focused coping are deemed to be adaptive or maladaptive; instead, it is how the coping strategy fits in relation to the stressful situation (Biggs et al., 2017). The literature suggests that factors such as appraisal and coping (Kuyken et al., 2003), trainee personality (Brooks, Holttum, & Lavender, 2002; Humphreys, Crino, & Wilson, 2017), support from home or a supervisor/course (Kuyken et al., 1998, 2003), course workload (Cushway, 1992; Hill, Wittkowski, Hodgkinson, Bell, & Hare, 2016; Kumary & Baker, 2008), impact of the course on trainees' personal life (Hill et al., 2016), and disparity between trainee expectation or satisfaction with the course (Brooks et al., 2002; Hill et al., 2016; Rummell, 2015) are related to trainee distress/impairment. However, only one study investigated how self-care practices in trainees impacts on distress, finding that practices such as acceptance (within a mindfulness framework) were significantly related to perceived stress (Myers et al., 2012).

There is a growing body of evidence that shows providing trainees with skills such as mindfulness can help them manage the distress they experience during training. In using self-compassion practices, such as mindfulness, trainee stress, depression, and emotional regulation difficulties have been shown to reduce (Finlay-Jones, Kane, & Rees, 2017).

Furthermore, specific training for trainees in loving-kindness meditation has been shown to improve self-compassion and self-care in trainees (Boellinghaus, Jones, & Hutton, 2013). Mindfulness has also been shown to moderate burnout in qualified psychologists (DiBenedetto & Swadling, 2014). Despite these findings, there appears to be no research into how self-compassion relates to the experience of distress/impairment of trainees during training. This gap in the literature possibly omits an important variable as evidence suggests self-compassion is an influential factor when investigating links between distress and resilience (MacBeth & Gumley, 2012). There is a burgeoning evidence base that indicates self-compassion is linked to distress, appraisal, coping, and self-esteem factors. Leary, Tate, Adams, Allen, & Hancock (2007) found that components of self-compassion attenuate the reaction of an individual during times of stress. Such components have also helped individuals reframe cognitive appraisals during times of stress to become more balanced, reducing stress (Allen & Leary, 2010). Furthermore, self-compassion has been linked with reduced stress and increased coping in students (Hall, Row, Wuensch, & Godley, 2013), as well as helping moderate self-esteem factors in young adults (Neff & McGehee, 2010). Such factors overlap with the factors found to influence trainee stress and distress, suggesting that self-compassion may be an important variable to investigate.

Aims

In considering the above evidence, this research aimed to investigate the relationship between self-compassion and trainee stress and impairment. Given the current evidence base, this study will look at the relationship between self-compassion and perceived stress, anxiety, appraisal, and coping in trainees who are currently completing the doctoral course. These factors fit within the transactional model of stress and would suggest that self-compassion would be part, or involved with, both primary and secondary appraisals. As these appraisals occur in parallel (Biggs et al., 2017), it is likely that the relationship with self-compassion and appraisal will be one of mediation, given the evidence of the Leary et al. (2007) study. Furthermore, given the influence of appraisal on levels of stress and copiong in trainees

(Kuyken et al., 1998, 2003) it is likely that self-compassion will also be related to their levels of stress and coping.

Hypothesis

Based on these aims the following hypotheses will be tested:

H1. Participants who score high on measures of self-compassion will score low on measures of stress and anxiety, while participants with low self-compassion and resilience scores will score high on measures of stress and anxiety.

H2. Participants who score high on measures of self-compassion scale will score low on measures of threat and uncontrollability appraisal but score high on measures of challenge and self-control appraisal.

H3. Participants who score high on measures of self-compassion will score high on adaptive coping subscales, whereas participants who score low measures of self-compassion will score high on measures of maladaptive coping.

H4. Participants who score high on measures of self-compassion will have significantly lower scores of perceived stress and anxiety compared to participants who score low on measures of self-compassion.

H5. Self-compassion will mediate the relationship between anxiety, perceived stress, and cognitive appraisal.

Method

Design

A cross-sectional design was used, as this is the most appropriate method to investigate variable relationships with an population (Barker, Pistrang, & Elliott, 2002).

To be included in the study participants needed to be enrolled in a clinical psychology doctorate course in the UK. At the time of sampling, 30 Universities were offering a doctoral course in clinical psychology that had been approved by the Health and Care Professions Council and British Psychological Society. However, based on ethical grounds the course that approved this study was excluded, as it was felt that as the researcher was currently part of this course, it presented a potential conflict of interest. Therefore, only 29 Universities were for sampling.

A power calculation using GPower (Faul, Erdfelder, Lang, & Buchner, 2007) was used to estimate the number of participants that would be needed to detect a relationship. Within this calculation, the effect size was held at 0.4, as research in this area is limited it was felt that keeping the effect size small would maximise the potential for finding an effect. The error rates were set at levels that are regularly used within research (Type A at 0.05 and Type B at 0.95). Based on these limits, it was calculated that a minimum of 70 participants would be needed for statistical analysis.

Participants

In total 197 participants responded to the online questionnaire. However, nine were discarded due to incomplete data on at least one of the measures. Therefore, 188 participants were used for the final analysis. At the time of sample the total population of trainees across the 29 courses was 1,681. Accordingly, this meant that the study sample represented only 11% of the population. The sample demographics can be seen in table 6.

Table 6: Sample demographics

Total sample	188
Male	14
Female	174
Year	
1	52
2	70
3	66
Age mean (standard deviation)	29.39 (3.68)

The following demographic variables were excluded: ethnicity, course, relationship status, and income, as these have not been found to influence trainee stress or impairment within the literature. Furthermore, it was felt that such factors were not relevant to the main research aims of this study, and thus excluded from the demographic questionnaire.

Measures

The transactional stress model by Lazarus and Folkman (1984) was used to define stress and conceptualise its measurement. Within this model, individual appraisals of a

situation can influence coping and levels of stress. Therefore, measurement of stress should include type of appraisal (primary and secondary) and coping strategy. Based on this model the following measures were assessed as reliable and valid to use in this study.

Stress

The Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983) is a global measure of stress, developed from the transactional stress model (see Appendix D). It is a 10-item questionnaire where the participant rates how stressful they have felt over the last month, using a 5-point Likert scale rating. A recent review of the psychometric properties of the PSS indicated a reliability of α = >0.7, with a test-retest of r = >0.7 (Lee, 2012).

Stress Appraisal

The Stress Appraisal Measure (SAM) (Peacock, & Wong, 1990) is a measure of primary and secondary cognitive appraisal relating to a stressful event (see Appendix E). Primary appraisal has three subscales: threat (relating to the potential for harm or loss in the future), challenge (relating to perceived potential for benefit or growth from the situation), and centrality (relating to what the individual feels is at stake). Secondary appraisal concerns only perceptions of control and measures to what degree an individual appraises the situation as controllable by self, others, or if it is uncontrollable. For the mediation analysis only appraisals of threat were used, as this has been shown to have a strong relationship to stress and coping in trainees (Kuyken et al., 1998, 2003). In a recent review of cognitive appraisal measures, Carpenter (2016) reported the internal consistencies of the 7 subscales of the SAM as: threat α = .65 – .75, challenge α = .66 – .79, control self α = .84 – .87, control other α = .84 – .85, and uncontrollable α = .51 – .82.

Coping

The Brief COPE scale (Carver, 1997) was chosen to measure trainee coping (see Appendix F), as it is frequently used to measure of ways of coping in research (Kato, 2013). It is a 28-item self-report questionnaire using a 4-point Likert scale. The questionnaire uses answers to the questions to develop scale scores across 14 domains of ways of coping in response to stress. For this study, only nine of the domains were used in the online survey. Although the coping process of the transactional model (Lazarus & Folkman, 1984) uses problem and emotion focus as a way of categorising coping, this study categorises coping as either adaptive or maladaptive. This decision has been based on the current literature on trainee stress that identified strategies such as avoidance and substance abuse as linked with stress and impairment (Kuyken et al., 1998; 2003). Based on the descriptions by Carver (1997) the following subscales were felt to represent adaptive coping: active coping, planning, positive reframing, using emotional support, and using instrumental support, and these strategies were considered maladaptive coping, substance use, behavioural disengagement, and self-blame. Based on the normative sampling by Carver (1997) the reliability of each of these subscales were: active coping (α .68), Planning (α = .73), positive reframing (α = .64), acceptance (α = .57), using emotional support (α = .71), using instrumental support (α = .64), substance use (α = .9), behavioural disengagement (α = .65), and self blame (α = .69).

Anxiety

The GAD-7 (Spitzer, Kroenke, Williams, & Lowe, 2006) was chosen to measure anxiety (see Appendix G). It is a is a brief measure of assessing generalised anxiety disorder and is commonly used in clinical settings as both an outcome measure and a tool to assess severity, providing clinical cut-off scores. Participants are asked to rate how bothered they have been over the last week by anxiety symptoms, using a 4-point Likert scale rating. It has a Cronbach alpha of 0.92, with a test-retest correlation of r = 0.83.

Self-compassion

The Brief Self-Compassion Scale (Raes, Pommier, Neff, & Van Gucht, 2011) was chosen to measures trainee self-compassion (see Appendix H). It is a 12-item self-report questionnaire, where participants rate how often they behave in a stated manner using a 5-point Likert scale. The reliability of the total score of short-form ($\alpha = 0.87$) is similar to the Long-Form ($\alpha = 0.9$), as well as the total scores from both the short and long form being highly correlated ($r = 0.98$) in an English normative sample (Raes et al., 2011). Although the Brief Self-Compassion scale can be analysed using separated subscales, based on the different domains of self-compassion, these were not used in the analysis as they were not as reliable as the long form scales.

Demographics

At the beginning of the online questionnaire participants were asked to give their age, year of study, and gender.

Procedure

An email was sent to course directors of the 29 Universities that currently run an approved doctoral course in Clinical Psychology (see Appendix I). This email requested that they send the participant information sheet (see Appendix J) via email to all the trainees currently on the doctoral program. Within the participant information sheet was a URL to the online survey on Qualitrics for participants to take part in the study. At the start of the online survey participants were given the same information from the participant information sheet and then asked to respond either yes or no to a series of questions to gain consent for participation. If they answered no to any of these questions they were not included in the study. Once they agreed to take part, participants then completed the questionnaires in the following order: brief compassion scale, PSS, GAD-7, Brief COPE, and SAM. This order was the same for every participant. At the end of the survey, participants were given a debrief about the purpose of the study and given the option to be informed of the overall findings of the study. Sampling ran from August 2017 to March 2018, eight months in total. The

Individuals who participated in the study were given the option to be entered into a prize draw to win a £30 Amazon voucher.

Ethical Approval

The Salmonos Ethics Panel granted approval to conduct this study on the 27th July 2017 (see Appendix K).

Statistical analysis

The raw data was analysed using SPSS version 24. Frequency analysis of the data showed a normal distribution for all measures. A Pearson correlational analysis was used to analyse the first three hypotheses. Hypothesis four was investigated using an independent samples t-test. Finally, hypothesis five was investigated using mediation analysis, following the suggested model by Preacher & Hayes (2008).

Results

The means and standard deviations for all the measures can be seen in table 7. Trainee scores on the PSS suggest that perceived stress is high within this sample of trainees. Visual comparison to Cohen & Janicki-Deverts (2012) normative PSS sample show that this sample has a higher perceived stress score than 25-34-year-old Americans who score 17.46 (SD 7.31) (which encompasses the mean age of this sample) and advanced degree students, who score of 14.65 (SD 7.14). Using the mean and standard deviation of this samples PSS score, two cut-off scores were generated to investigate what percentage of trainees were scoring one and two deviations above the sample mean, as a way of estimating high and extreme cases of stress. In total 24 trainees (12%) scored two standard deviations above the mean (31.55), and 30 trainees (15%) scored one standard deviation above the mean (25.08). When perceived stress is examined across year of study there is no visual difference in ratings, suggesting all years have similar levels of perceived stress (see table 8).

On measures of anxiety, this sample scores within the mild range, based on the GAD-7 cut-off scores. However, individual analysis showed that eight participants were above the cut-off for severe anxiety, with another 20 participants falling in the moderately severe range. Combined, these figures account for 14.8% of the sample, suggesting that at the time of sampling they were experiencing elevated levels of anxiety in comparison to the rest of the sample. Over the three year groups, third year trainees report higher anxiety levels.

Overall this sample of trainees reported using adaptive coping strategies more frequently, with the most common being active coping, planning, and emotional support. The most common maladaptive coping strategy used was self-blame, with 52 participants responding that they employed this *a little bit*. Substance use was not used regularly, and was reported to be employed *a little bit* to a *medium amount*. From individual analysis, 13 of the trainees indicated they frequently used substance use as a strategy, around 7% of the sample. When these scores are examined across year of study (see table 8 & 9), we see little variation from the sample mean scores. However, there is a slight increase in the substance use strategy by second and third-year trainees, although this is nominal.

The mean score for appraisal suggests that in general trainees appraise potentially stressful situations as challenging, likely to impact on their wellbeing, and controllable. The highest rated appraisal was for centrality, which involves appraising a situation as likely to impact on their wellbeing, and was rated by trainees to be *moderately* to *considerably* relevant in their appraisal of stressful situations. They also rated such situations are either controllable by themselves or others in some way, as well as *moderately* threatening (believing there will be a negative outcome). However, challenge appraisals, relating to if they feel the situation will have a positive impact on them, were appraised as *slightly* or *moderately* related to them, suggesting they feel that the situation will not benefit them. The appraisal scores also indicate that few trainees would appraise a situation as completely uncontrollable by anyone. Individual score analysis showed 17% (32 trainees) of the sample appraised potentially stressful situations as *considerably* threatening, with 12% (23) appraising it as *extremely*

threatening. Again this suggests that a portion of the sample report high treat appraisal in response to potentially stressful situations. Across the three years, we see that there are broadly similar ratings that follow the pattern of the overall means. However, first-year threat and challenge appraisals are minimally higher than the second and third years. Also, appraisals of centrality were rated slightly lower in the third year, suggesting they feel there is less of a threat to their wellbeing.

The mean self-compassion score for this sample is relatively high; based on a visual comparison to the mean score from an American normative sample (reporting a mean of 36 and SD 7.33) (Raes, et. al., 2011). This difference suggests that self-compassion is a common trait among this sample of trainees. There is little variation of self-compassion scores across years, suggesting that this is a common trait across trainees for this sample.

Table 7: Means and standard deviations of measures

	Mean	Std. Deviation
Perceived Stress	18.61	6.47
Anxiety	5.71	4.24
Self-Compassion	37.55	7.33
Appraisal		
Threat	12.48	2.99
Challenge	11.95	3.31
Centrality	15.23	3.75
Control by Self	13.44	2.87
Control By others	13.49	3.51
Uncontrollable	7.89	3.15
Coping		
Active Cope	6.61	1.32
Emotional Support	6.21	1.75
Instrumental Support	5.87	1.75
Positive Reframe	4.68	1.50
Planning	6.46	1.25
Substance Abuse	3.03	1.32
Behavioural Disengagement	2.77	0.97
Self-Blame	4.85	1.16

Table 8: Appraisal, anxiety, self-compassion, and stress means across the three years

		Self Compassion	Perceived Stress	Anxiety	Threat Appraisal	Challenge Appraisal	Centrality Appraisal	Controllable by Self	Controllable by Others	Uncontrollable
Year 1 (N = 52)	Mean	37.4808	18.5577	5.4231	13.0577	11.4231	15.2692	13.25	13.7115	8.2885
	Std. Deviation	8.08894	6.47291	4.55186	2.87254	3.13329	3.04937	2.94974	3.18905	3.30381
Year 2 (N = 70)	Mean	37.7429	18.4143	5.2143	12.3714	12.1286	15.4857	13.6143	13.6714	7.7429
	Std. Deviation	7.24856	6.24266	3.7023	2.67664	3.2029	4.00269	2.41549	3.65435	2.84216
Year 3 (N = 66)	Mean	37.4091	18.8788	6.4697	12.1515	12.1818	14.9545	13.4242	13.1364	7.7576
	Std. Deviation	8.46164	6.80614	4.4832	3.36609	3.56439	4.00166	3.26784	3.63693	3.37894
Overall (N = 188)	Mean	37.5532	18.617	5.7128	12.484	11.9521	15.2394	13.4468	13.4947	7.8989
	Std. Deviation	7.88299	6.47679	4.24421	2.9946	3.31466	3.75039	2.87388	3.51695	3.15981

Table 9: Coping means across the three years

		Active Coping	Substance Use	Emotional Support	Behavioural Disengagement	Positive Reframing	Instrumental Support	Planning	Self Blame
Year 1 (N = 52)	Mean	6.5769	2.9423	6.2885	2.8654	4.4231	6.0769	6.4038	4.8846
	Std. Deviation	1.27335	1.17846	1.71883	0.99072	1.64908	1.85606	1.27202	1.33804
Year 2 (N = 70)	Mean	6.5714	3.0714	6.5143	2.6429	4.8857	5.8714	6.4714	4.8
	Std. Deviation	1.3995	1.5163	1.74242	0.76207	1.36777	1.78497	1.29348	1.04396
Year 3 (N = 66)	Mean	6.697	3.0758	5.8333	2.8485	4.6818	5.7121	6.5	4.8788
	Std. Deviation	1.28865	1.23177	1.75046	1.14007	1.52072	1.65264	1.21845	1.15712
Overall (N = 188)	Mean	6.617	3.0372	6.2128	2.7766	4.6862	5.8723	6.4628	4.8511
	Std. Deviation	1.32121	1.32588	1.75428	0.97184	1.50664	1.75648	1.25545	1.16507

An initial analysis of distribution and outlier detection was done before any statistical analysis. Using a range of +/- 2 to identify overly skewed distributions, as suggested by Gravetter & Wallnau (2013), none of the measures appeared to be skewed, suggesting a normal distribution. Therefore, analysis of the hypothesis was conducted using standard parametric statistical tests.

A bivariate correlational analysis was conducted using Pearson's correlation for the first three hypotheses, to investigate the relationship between self-compassion and appraisal, stress, anxiety, and coping. Before the analysis was conducted, each of the variables was analysed for outliers, linearity, and homoscedastic within SPSS. Using Mahalanobis distance to check for outliers, four cases were found to be above the significant cut-off point and were not included in any further analysis. Linearity and homoscedasticity was done using a visual check of scatter plots for each variable. We will consider each hypothesis in turn.

Hypothesis 1

The relationship between trainees' scores on the Brief Self-Compassion Scale, Perceived Stress Scale, and GAD-7 was significantly correlated (see table 10 below). The relationship was negative, indicating that the greater levels of self-compassion are associated with lower levels of stress and anxiety in trainees. Furthermore, within this analysis, we can see that perceived stress and anxiety are also significantly correlated, which is an expected finding based on the current literature on trainees (Humphreys et al., 2017; Kuyken et al., 1998, 2003; Rummell, 2015).

Table 10: Correlation between Self-compassion, perceived stress and anxiety

	Self Compassion	Perceived Stress	Anxiety
Self Compassion	1	-.607**	-.525**
Perceived Stress	-.607**	1	.686**
Anxiety	-.525**	.686**	1

** *Correlation is significant at the 0.01 level (1-tailed)*

Hypothesis 2

Analysis of the relationship between self-compassion and appraisal partly supported the second hypothesis (see table 11). The correlational analysis showed that self-compassion was negatively correlated with appraisals of threat and uncontrollability but also centrality appraisals. It also showed a positive correlation between self-compassion and appraisals of control by self and others but not challenge. This finding indicates that higher levels of self-compassion are related to fewer appraisals of threat, uncontrollability, and value/stake judgments. It is also related to more appraisals of controllability by self and others, but not for appraisals of potential growth or reward.

Hypothesis 3

Analysis of self-compassion and coping strategy largely support the hypothesis (see table 12). There was a small significant positive correlation between self-compassion and what has been labelled adaptive coping strategies: active coping, planning, positive reframing, emotional support, and instrumental support. With regards to maladaptive coping strategies, there was a small but significant negative correlation between self-compassion and behavioural disengagement and self-blame. There was no significant correlation between self-compassion and substance use, although it was a negative relationship. This result suggests that adaptive coping strategies are more frequently used by trainees with higher levels of self-compassion, while maladaptive strategies are less frequently employed.

Table 11: Correlation between Self-compassion and appraisal

	Self Compassion	Threat appraisal	Challenge appraisal	Centrality appraisal	Controllable by self	Controlled by others	Uncontrollable
Self Compassion	1	-.321**	0.093	-.214**	.367**	.280**	-.216**
Threat appraisal	-.321**	1	-0.099	.390**	-.251**	-.145*	.398**
Challenge appraisal	0.093	-0.099	1	.337**	.516**	.326**	-0.115
Centrality appraisal	-.214**	.390**	.337**	1	.133*	-.135*	.140*
Controllable by self	.367**	-.251**	.516**	.133*	1	.393**	-.241**
Controlled by others	.280**	-.145*	.326**	-.135*	.393**	1	-.179**
Uncontrollable	-.216**	.398**	-0.115	.140*	-.241**	-.179**	1

** Correlation is significant at the 0.01 level (1-tailed)

* Correlation is significant at the 0.05 level (1-tailed).

Table 12: Correlational analysis of Self-Compassion and coping strategy

	Self-Compassion	Active Coping	Substance abuse	Emotional Support	Instrumental Support	Disengagement	Positive reframing	Planning	Self Blaming
Self-Compassion	1	.245**	-0.042	.142*	.163*	-.336**	.394**	.231**	-.160*
Active coping	.245**	1	-.152*	.141*	.288**	-.380**	.249**	.687**	0.06
Substance abuse	-0.042	-.152*	1	-0.083	-.168*	-0.057	.129*	-.160*	.182**
Emotional Support	.142*	.141*	-0.083	1	.673**	-.148*	0.011	.147*	-0.048
Instrumental Support	.163*	.288**	-.168*	.673**	1	-.201**	.163*	.276**	-0.022
Disengagement	-.336**	-.380**	-0.057	-.148*	-.201**	1	-.200**	-.318**	0.068
Positive reframing	.394**	.249**	.129*	0.011	.163*	-.200**	1	.350**	.501**
Planning	.231**	.687**	-.160*	.147*	.276**	-.318**	.350**	1	0.102
Self Blaming	-.160*	0.06	.182**	-0.048	-0.022	0.068	.501**	0.102	1

** Correlation is significant at the 0.01 level (1-tailed)

* Correlation is significant at the 0.05 level (1-tailed).

Hypothesis 4

Although a linear relationship has been determined within hypothesis 1, further analysis was planned to investigate this relationship further. Using a median split process, self-compassion scores were recoded into a new variable of high self-compassion (scores ranging from 12 to 38.4, just below the median) and low self-esteem (scores ranging from 38.5 to 60, the highest possible score), coding them as one and two respectively (see table 13 for means and standard deviations). Although there has been some concern regarding the use of this technique (dichotomizing continuous variables), as it may lead to reduced power and increased type I error (Dawson & Weiss, 2012; MaCallum, Zhang, Preacher, & Rucker, 2002), recent investigation of these claims suggests that this type of analysis is not as compromising as once thought (Iacobucci, Posavac, Kardes, Schneider, & Popovich, 2015). Furthermore, the current statistical analysis indicates that traits of self-compassion interact, in some way, with anxiety and perceived stress. Identification of groups and how they are dissimilar provide further evidence of how this relationship interacts.

Table 13: Self-compassion group means (standard deviations)

	Perceived Stress	Anxiety
High Self-compassion	21.52 (5.5)	3.73 (2.89)
Low Self-compassion	15.41 (5.75)	7.45 (4.38)

Following the median split, the two groups, high and low self-compassion, were compared using an independent t-test to ascertain if they had significantly different levels of anxiety and perceived stress. When the group means were compared on perceived stress levels, there was a significant difference, $t(182) = 7.36$, $p < .001$, indicating that the low self-compassion group had higher levels of perceived stress. Comparison between self-compassion group and anxiety was also significantly different, $t(182) = 6.79$, $p < .001$, denoting that the low self-compassion group had higher levels of anxiety. This finding supports the hypothesised relationship.

Hypothesis 5

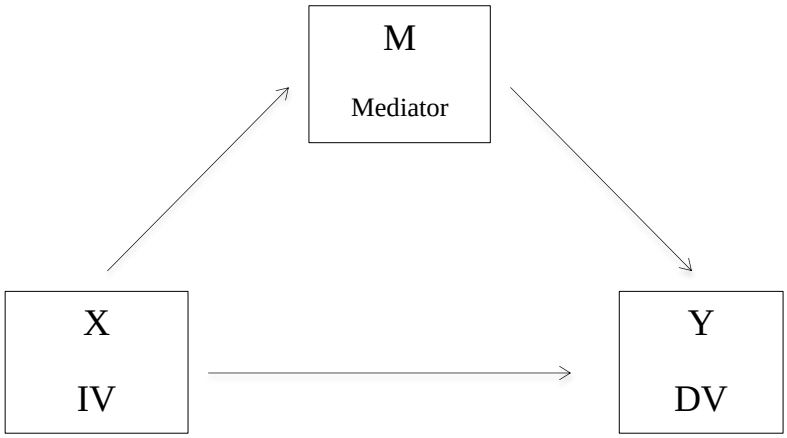
One of the most common methods used to investigate mediation analysis is the causal steps strategy (Baron & Kenny, 1986). This method outlines the following criteria that need to be met to demonstrate a simple variable mediation (see figure 2):

- The independent variable significantly accounts for variation in the mediator variable,
- The independent variable significantly accounts for variation in the dependent variable (direct path),
- The mediating variable significantly accounts for variation in the dependent variable when controlled for the independent variable, and
- The direct effect is lessened, or no longer significant when the mediator variable is entered simultaneously with the independent variable as a predictor.

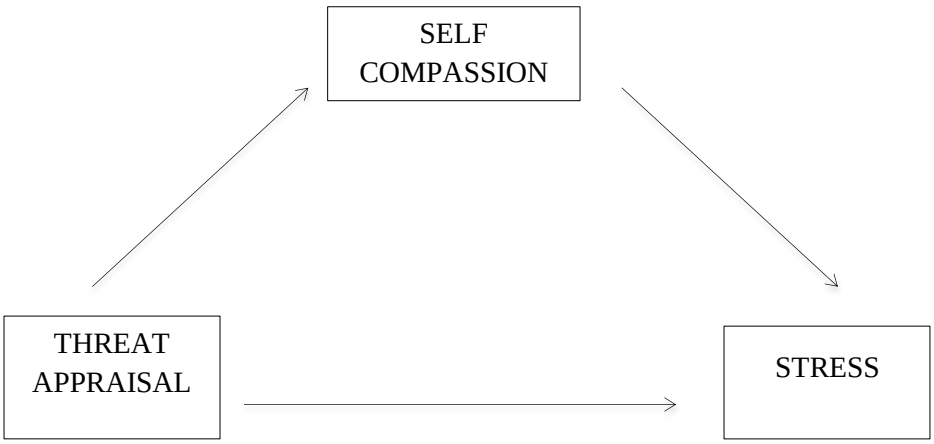
However, this process has been criticised as it inflates type I errors and reduces experimental power (MacKinnon et al., 2002; Preacher & Hayes, 2008). Instead, it has been suggested that analysis should be conducted on the indirect effect (path X → M → Y, see figure 2) using a robust method such as bootstrapping (MacKinnon, Fairchild, & Fritz, 2007; Preacher & Hayes, 2004, 2008). Therefore, to investigate if self-compassion mediates the relationship between threat appraisal, anxiety, and perceived stress this method was used. The data was analysed using the PROCESS method (Hayes, 2018) that was run in SPSS version 24. This approach runs a linear regression analysis on the variables and conducts a bootstrapping analysis on the indirect path.

Figure 2: Mediation models

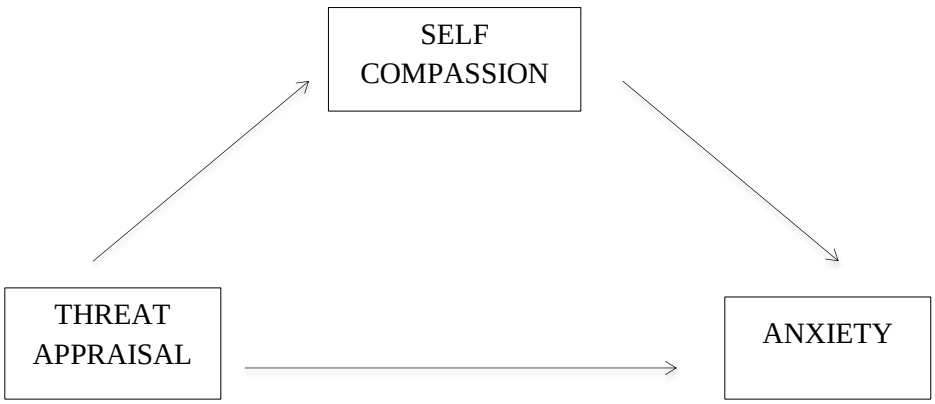
simple mediation model



Mediation model for Self-compassion, appraisal and stress



Mediation model for appraisal, self-compassion and anxiety



In the first mediation analysis, threat appraisal was entered as the independent variable (X), perceived stress was entered as the dependent variable (Y), and self-compassion was entered as the mediator (M) (see fig 2 for mediation model). The regression analysis results indicated that threat appraisal was a significant predictor of self-compassion, b = .84, t (182) = - 4.56. p < .001, as well as a significant predictor of perceived stress, b = .67, t (182) = 4.37, p < .001, accounting for 9% of the variance (R^2 = .94). Self-compassion was found to significantly predict perceived stress, b = -.47, t (182) = 7.06, p <.001, which reduced the coefficient between threat appraisal and perceived stress (although it remained significant), b = .28, t (182) = 2.06, p = .04. This model, with self-compassion added as a predictor, now accounted for 38% (R^2 = .38) of the variance in perceived stress. The indirect effect was tested using a bootstrap estimation approach with 5000 samples. The results showed that the indirect coefficient was significant, b = .395, 95% CI [2.09, 0.59], p = .05. These results show self-compassion partially mediates the relationship between threat appraisal and perceived stress.

In the second mediation analysis, the dependent variable (Y) was changed to anxiety, with all other parameters the same. The coefficient between threat appraisal and self-compassion is the same as in the first mediation analysis. Threat appraisal was a significant predictor for anxiety, b = .47, t (182) = 4.75, p < .001, and accounted for 33% of the variance (R^2 = .33). Self-compassion was also found to be a predictor of anxiety, b = - .25, t (182) = - 7.12, p < .001. In the regression model, self-compassion and threat appraisal now accounted for 55% (R^2 = .552) of the variance in anxiety. Within this model threat appraisal was still a significant predictor of stress but the overall coefficient was reduced, b = .25, t (182) = 2.8, p < .01. The indirect effect was tested using a bootstrap estimation approach with 5000 samples. The results showed that the indirect coefficient was significant, b = .21, 95% CI [.11, .33], p = .05. These results indicate that self-compassion partially mediates the relationship between threat appraisal and anxiety.

Discussion

The results of this study are similar to that of the findings of other studies that investigated trainee stress and impairment. Perceived stress among this sample of trainees was similar to levels found in a sample of Canadian trainees (Rummell, 2015), and higher than a comparative UK trainee sample (Kuyken et al., 1998). In comparison to other populations, this sample reported higher stress than a similar age and occupation cohort, which is consistent with other trainee studies (Cushway, 1992, Kumary & Baker, 2008; Kuyken et al., 1998; Rummell, 2015). It was also found that stress across training years was broadly similar, suggesting that level and intensity of stress is constant across the three years. However, there have been mixed results in studies comparing year of study and stress. Cushway (1992) found that in a UK sample second and third-year trainees experienced higher stress than first years. However, this was not replicated in Kuyken, Peters, Power, & Lavender (1998) UK study. One factor that may be involved in this inconsistent finding is the time of sampling or completing the questionnaire. At different time points across the year, trainees will have different stressors and pressures acting upon them, e.g. starting the course or a new placement and handing in assignments. This confounding variable is difficult to control for, as each course has different examination methods and assignment dates, and as such, it may be that the nature of cross-sectional designs will be unable to account for such change, producing different results across studies. Therefore, such factors may have equally skewed levels of stress recorded in this sample. Nevertheless, this study is in line with the consistent finding in the literature that in trainee samples stress is reported to be high, and that a small part of the sample experiences high levels of stress.

In this sample of trainees, anxiety was not reported to be problematic, although there is a number of trainees that were in the clinical range. Across the three years, the means and standard deviations were similar, suggesting that anxiety levels did not change across the year groups. However, 14.8% of the sample scores in the clinical range for anxiety, suggesting that a portion of sample were experiencing moderately severe to extremely severe anxiety. This finding is consistent with other studies measuring trainee anxiety (Brooks et al., 2002; Humphreys et al., 2017; Kuyken et al., 2000), which show as a cohort trainees appear to have relatively normal levels of anxiety,

although indvidual anlysis indicates the presence of high levels of anxiety in a small part of the sample that is stable over time (Kuyken et al., 2003). Anxiety and stress have been shown to co-occur, especially within burnout in clinical psychologists (Smith & Moss, 2009), and so it may be that some trainees are experiencing symptoms of burnout. However, recently there has been a move to acknowledge and accept trainees lived experience of mental health difficulties (Charlemagne-Odle, Harmon, & Maltby, 2014; Kemp, 2017). It may be that lived experience is a factor in the presence of high anxiety. Rummell (2015) found that using DSM-V criteria, a high proportion of trainees were experiencing high levels of anxiety symptoms. This explanation is not to say that it impedes or stops trainees from engaging and excelling within the profession, but it may indicate that this kind of anxiety level is normal.

The results from the Brief COPE suggest that within this sample, trainees employ adaptive strategies more frequently than maladaptive. The most common coping strategies are active coping and planning, which are both problem-focused approaches, aimed at dealing with the situation causing the difficulty. The only emotion-focused coping strategy measured was emotional support, which was the third highest strategy. This finding is similar to that found in Kuyken et al. (1998, 2003) where support from a confidant was related to psychological adaptation of trainees. With regards to the maladaptive strategies, self-blame was the most prevalent and substance abuse the least. Unlike other studies, substance use was not widely employed by trainees in this study. Although around 7% of the sample indicated that they did use this strategy regularly, but due to limitations of the measure it is not clear what this means and includes a high degree of subjectivity in response. The self-blame strategy involves criticising or blaming one-self for stress or difficulties. Trainees have been shown to rate their personal and professional selves as similar, implying that negative feedback could be taken at a personal and professional level, making them vulnerable to anxiety or depression (Hill et al., 2016). This finding may be a factor in the common use of self-blame in this sample.

Results from the SAM show that in general trainees appraise potentially stressful situations as moderately impacting on their wellbeing. This finding may be linked to the higher levels of self-blame, as well as supporting the idea that trainees relate their personal and professional selves as

similar (Hill et al., 2016). It is also noted that appraisals of challenge, how likely a potentially stressful situation will be positive for the individual, are only slightly accepted by trainees. It may be that trainees feel that potential stressful situations are unlikely to help them develop, or that the may feel they don't currently have adequate resources to cope. As suggested by Holttum (2015), trainees may not understand that their experiences are completely normal and that strategies can help them progress, and thus feel that they will not benefit from the situation. Perhaps a contradictory finding to this point is that, in general, trainees felt that potential situations were controllable by themselves or others. This result would suggest that they feel that either their resources are suitable to manage or they feel others may help, which provides an additional explanation for the common use of emotional and instrumental support. However, this still would not explain why trainees felt stressful situations would not help them develop or be positive in some way. The SAM results also indicate that in general trainees rated stressful situations as moderately threatening (likely to cause negative outcomes). Although this is not a particularly high rating, the high controllability appraisals (self and other) may partially help to moderate this. It has been shown that appraisals of threat are moderated by appraisals of control (Kuyken et al., 1998, 2003), which may go to explain why the threat results are not excessively high. However, it should be noted that within the sample around 12% (23 participants) rated stressful situations as considerably negative, rising to 17% when the range is broadened to extremely threatening appraisals. To the authors' knowledge, this is the only study that used a validated tool that was designed specifically to measure primary and secondary appraisal, based on Lazarus & Folkman (1984) transactional model. Although Kuyken et al. (1998, 2003) used a measure of appraisal, this was developed by them and has not been widely used as a measure. Furthermore, comparisons between the SAM and Kuyken et al's measure would not be practical as the focus of the measure is different, SAM proposes a scenario/memory driven approach while Kuyken et al use a direct self-report measure.

Following on from appraisal, the results also indicated that self-compassion is high in this sample of trainees, compared to a normative sample. Given that clinical psychologists often have significant exposure to key aspects of self-compassion, such as mindfulness, or other related third

wave cognitive behavioural therapies, such as Acceptance and Commitment Therapy, this may not be a surprising finding. It has been shown that acceptance, within a mindfulness framework, was related to trainees perceived stress (Myers et al., 2012). It may be that such traits as mindfulness and self-compassion enable trainees to manage such high stress and anxiety and pass the doctorate course, the Leeds Clearing House (2018) report that the non-completion rate is less than 1%. The relationship of self-compassion to the other variables was largely found to be as hypothesised. There was a strong linear relationship between stress and anxiety, indicating that trainees with higher scores of self-compassion correlated with lower stress and anxiety levels. Furthermore, when trainees were split into high and low self-compassion groups, these groups differed significantly in their overall mean scores of stress and anxiety, with the low self-compassion group experiencing higher levels of distress. These associations strongly suggest a relationship between self-compassion and levels of distress in trainees. This finding is similar to Bergen-Cico & Cheon (2013) who found that mindfulness and self-compassion influenced trait anxiety.

As well as anxiety and stress, there was also a significant linear relationship between self-compassion and appraisal. As predicted, the greater the levels of self-compassion the lower trainees would rate appraisals as negatively affecting them. Also, higher self-compassion was related to greater appraisals of control in relation to potentially stressful situations. However, an unexpected finding was that self-compassion was not related to appraisals of challenge. We may have expected that individuals with high self-compassion would appraise stressful events as potentially beneficial for them in the long run. As the brief compassion-scale is not suitable to investigate subscales of self-compassion, given the minimal items for each domain, it may be that a specific domain such as common humanity (seeing the problem or difficulty as a common in others) may be correlated while other domains are not. Overall, it may not be surprising to find that self-compassion influences appraisal; as mentioned in the introduction there is robust evidence that self-compassion can impact on cognitive appraisal (Allen & Leary, 2010; Gilbert & Procter, 2006).

As with the other findings, the predictions around self-compassion and coping are also supported. Higher levels of self-compassion were significantly correlated with greater frequency of

using adaptive coping strategies, and lesser frequency of using maladaptive strategies. As shown in the literature, greater levels of self-compassion are associated with greater use of self-care and helpful coping strategies (Allen & Leary, 2010; Boellinghaus et al., 2013).

Additionally, the results of the study show that self-compassion is a significant predictor of stress and anxiety. Furthermore, it partially mediates the relationship between appraisal and stress/anxiety. What is interesting about this finding is that self-compassion accounts for 19% more of the variation in stress and anxiety than appraisal alone. This finding would suggest that aspects of self-compassion may play a major role in reducing, or managing, trainees' experience of stress and anxiety, although this relationship would need further investigation. As the literature is starting to demonstrate, interventions for trainees that focus on aspects of self-compassion have a positive impact on their self-care, emotional regulation, and wellbeing (Boellinghaus et al., 2013; Finlay-Jones et al., 2017). Such interventions may be tapping into this mediated pathway and having a positive influence on the transactional process.

Clinical Implications

There is a danger that these results and others like it may not account for other contextual factors. Although we would want professional training to be a positive experience, the nature of it is one of challenge and development, which will naturally result in some stress and discomfort for novices (Burgess, Rhodes, & Wilson, 2013; Skovholt & Ronnestad, 2003). Furthermore, the trials of getting onto clinical training are highly stressful (Cruwys, Greenway, & Haslam, 2015), resulting in trainees accepting courses that may not be their primary choice, leading to dissatisfaction that can influence stress and anxiety (Brooks et al., 2002). Furthermore, the difficult context of the NHS means that trainees are likely to be placed for clinical experience in teams that are struggling and underfunded, adding to stress and anxiety. It may also be that given the limited resources, trainees may need to take on more complex clients due to the fact that there are limited resources that clients can access. This may mean that trainees will be exposed to pressure around risk management and case coordination, which has been linked to increased stress (Ray, et. al. 2013; Sprang, et. al, 2007;

Turgoose, & Maddox 2017). But despite these factors, the pass and employment rate of trainees is exceptionally high, as shown by the Leeds Clearing House (2017) figures. So one could reasonably ask, why does this matter then?

One possible answer to this may be that it can impact on the trainee within their qualified career. Impairment and burnout in qualified clinical psychologists are reported to be high (Smith & Moss, 2009), which is comparable to the small number of trainees who are experiencing high stress and anxiety across samples. However, currently, there is no evidence to substantiate this link. Nevertheless, it may be that Holttum (2015) is correct in asserting that trainees should be made aware of the potential negative impact of working within mental health as a professional. Furthermore, in considering the evidence of the positive impact shown in studies that provide trainees with skills in self-compassion and mindfulness, it may be that self-care strategies need to be made a required aspect of all courses.

In considering the above factors, the answer to the question why this matters, is that stress and impairment are prevalent in the mental health profession (Walsh & Walsh, 2001). Furthermore, these difficulties have a real impact on clinician health, organisational activity, and patient care (Smith & Moss, 2009; Sprang, Clark, & Whitt-Woosley, 2007). Therefore, any factor that is shown to influence distress in a positive way, such as self-compassion, would be useful to learn early on in a professional career. That way trainees and newly qualified professionals will be able to better manage occupational stress, with the hopeful effect of reducing the current levels of impairment.

Research Implications

To the authors' knowledge, this is the first study that has investigated the role of self-compassion in trainee appraisal, stress and anxiety. Therefore, future research would be needed to ascertain how robust this finding is, but also to explore how the different aspects of self-compassion impact on trainee distress. Self-compassion consists of specific tenants such as self-kindness, common humanity, mindfulness, and disengagement. As this study was limited to the short measure of self-compassion future investigations with the longer version may allow multivariate meditational analysis

to examine what facets of self-compassion are the most important in trainee stress. Additionally, within the UK there has been a variant of self-compassion developed by Paul Gilbert, namely compassion-focused therapy (Gilbert, 2010), which may be another avenue for investigation with regards to intervening in trainee stress and distress. Methods such as mindfulness but also techniques such as the compassion chair, could be taught to trainees as forms of self-care strategy. Studies would then be able to look at how such skills impact on their well-being.

As stated previously, the process of training is likely to always involve a degree of discomfort and self-discovery for trainees, but is it possible for courses to lessen this experience? There are already a number of processes and structures in place to help relieve trainee stress. Furthermore, the selection process allows courses to screen for suitable candidates with great success, with evidence that there are predictive factors that can be used effectively (Scior et al., 2014). However, the pressure to succeed and pass the course may prevent trainees from speaking up when they are experiencing stress or impairment. Therefore, it may be that course could begin to set up groups, such as the lived experience groups (Charlemagne-Odle, Harmon, & Maltby, 2014; Kemp, 2017), to provide a safe environment where trainees can share and acknowledge the difficulties of training. Within this forum trainees could share experiences and strategies that have helped and begin to normalise the experiences they are having, as recommended by Holttum (2015).

Although focusing on trainee skills is one avenue, a relatively unknown facet of trainee difficulty is how their levels of stress or distress impact on their early and later career. Studies in trainees have indicated that they feel their stress and anxiety will resolve upon completion of the doctorate course (Hill et al., 2016), however evidence of professional impairment would hint that this may not be the case (Smith & Moss, 2009). Therefore, a longitudinal study may be useful in developing how trainee distress affects their early professional functioning and self-care practices.

Limitations

Several factors limit the generalizability of the findings of this study. Firstly, as with all observational studies correlation is not causation. Although we are able to identify a significant

relationship between self-compassion, appraisal, anxiety, and stress we are not able to say that it is a causal relationship. Furthermore, although models such as the transactional model (Lazarus & Folkman, 1982) provide us with a framework for understanding these relationships the variation accounted for by the measures used in this study is not even close to 50%, indicating that this is not the whole picture.

In addition to the limitation of methodology, the sample size also limits the scope of the findings. This study used a 29 Universities that currently run a doctoral course, making the total number of potential participants at 1,681. In considering the sample size of this study, on 11% of this population participated in the study. Therefore, it is not possible to generalise the findings of this study to the wider trainee population. Furthermore, responder bias is likely to impact on the findings of this study. It is likely that this sample represents the 11% of trainees who have been directly affected by stress and impairment and so are motivated to take part, or conversely are unwilling to take part for fear of how their responses will be seen. These confounding variables may result in a degree of sampling bias that further limits the generalisability of the findings.

Aside from the limitations of the sample size, there are also limitations with some of the measures used. Subjective measures have been criticised for the uncontrolled bias in recording, which in turn can result in skewed interpretations that disagree with objective accounts. Furthermore, construction of several of the measures, such as the Brief Cope, use different methodologies and modelling to generate an overall score that introduces a variety of interpretations by the participant. Such measurement error is difficult to account for in the analysis and is likely to generate variations in the overall results, further limiting our interpretation.

Conclusion

Overall the main focus of this study was to investigate the relationship of self-compassion with perceived stress, anxiety, and appraisal in trainees. Although the sample was limited, the findings were similar to a number of studies that have previously investigated stress, anxiety, coping, and appraisal. In summary, the study found that there are high levels of stress and anxiety in the sample

and that individual analysis suggests a sub-group of trainees who experience elevated levels of distress. Trainees used adaptive coping strategies with greater frequency than maladaptive, with these strategies mainly being problem focused. Self-compassion was found to mediate the relationship between appraisal, stress, and anxiety.

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Section C: Appendix of supporting materials

APPENDIX A

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APPENDIX B: CASP SYSTEMATIC REVIEW CHECKLIST
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APPENDIX C: CASP COHORT STUDY CHECKLIST
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APPENDIX D

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APPENDIX H

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APPENDIX I

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APPENDIX J
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APPENDIX K – ETHICS PANEL OUTCOME
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