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The relationships between self-compassion, attachment and interpersonal problems in patients with mixed anxiety and depression

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Doctorate in Clinical Psychology

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May 2016
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Acknowledgements

Firstly I would like to thank all the participants who gave up their time to take part in this project. I am also incredibly grateful to the Angus Psychological Therapies Team, who supported this project from the beginning and worked so hard to recruit participants. Without them this thesis would not have been possible – many thanks to you all.

I am also extremely grateful to my academic supervisors Dr Stella Chan and Professor Matthias Schwannauer, and my clinical supervisor Professor Kevin Power, for all their expert guidance, help and encouragement throughout this thesis.

On a personal note, I would like to say massive thanks to my parents and brother (and wider family) for continuing to take an interest in what I am doing and for all their unconditional love and support along the way; I could not have done this without them. Thanks also to my lovely friends who have done such a great job in supporting me, and distracting me when needed!

Finally, I would like to give the biggest thanks to my husband, who has been there for me no matter what; encourages me, puts up with me, and keeps me sane. Gavin – thank you for everything.
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Total word count excluding references, tables and figures: 17,697
Abstract

**Background:** There has been growing interest and research into the construct of self-compassion. Self-compassion has been positively associated with psychological well-being, and negatively associated with a range of psychological difficulties. The origins of self-compassion have been linked to early attachment experiences, with poor attachment relationships proposed to result in an inability to self-soothe and take a compassionate stance towards the self. Whilst research in nonclinical populations provides some initial support for these hypotheses, there is a lack of research conducted in clinical populations.

Given a large effect size has been found for the association between self-compassion and psychological difficulties, this suggests it may be an important target for therapeutic change. There is a growing evidence-base for the use of compassion-focused therapies, with research suggesting they are effective in reducing mood symptomology. However, less is known about the impact of these therapies on levels of self-compassion, or whether reductions in mood symptomology occur as a causal effect of increased self-compassion. In addition, other ‘third wave’ therapies may also indirectly increase self-compassion.

**Aims:** The research aims were two-fold. The first aim was to conduct a systematic literature review to evaluate the effectiveness of compassion-focused and mindfulness-based interventions in increasing levels of self-compassion. The second aim was to examine the role of self-compassion and its relationships with attachment and interpersonal problems in adults attending a primary care psychological therapies service. Specifically, self-compassion and interpersonal problems were hypothesised as potential mediators between insecure attachment and anxiety and depression.

**Method:** To address the first research aim, a systematic search was conducted to identify studies that utilised a compassion and/or mindfulness-based intervention with a clinical population, and included self-compassion as an outcome measure. To address the second research aim, a cross-sectional, quantitative study was conducted. Participants ($N=74$; 60% female, mean age = 40 years) attending a primary care psychological therapies service completed four self-report questionnaires assessing self-compassion, attachment, interpersonal problems and anxiety and depression.
**Results:** The findings of the systematic review suggested that self-compassion can be increased through both compassion-focused and mindfulness-based interventions. However, methodological weaknesses across studies highlighted that further research is needed and definitive conclusions cannot be drawn. The results of the empirical study indicated that low self-compassion, attachment avoidance and high levels of interpersonal problems were all associated with increased emotional distress. Furthermore, self-compassion mediated the relationship between attachment avoidance and emotional distress and anxiety. Interpersonal problems was not a significant mediator.

**Conclusions:** Taken collectively, the findings here suggest that self-compassion may be an important target in psychological therapy. In addition, results of the mediation analysis indicated that low self-compassion can be a pathway to overall emotional distress and anxiety for individuals with attachment avoidance. This provides support for the theory that self-compassion is linked to early attachment experiences.
SYSTEMATIC REVIEW

The effectiveness of compassion-focused and/or mindfulness-based psychological interventions in improving self-compassion in clinical populations: a systematic review

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This review has been written in accordance with Journal of Affective Disorders
(see Appendix A)
Abstract

*Background:* There has been growing interest in the development of interventions that aim to enhance self-compassion. In a recent meta-analysis, a large effect size was found for the association between self-compassion and psychological difficulties, suggesting it may be an important target for therapeutic change. The present systematic literature review aimed to evaluate the effectiveness of compassion-focused and mindfulness-based interventions in increasing levels of self-compassion.

*Method:* Four databases were searched to identify studies that utilised a compassion and/or mindfulness-based intervention with a clinical population, and included self-compassion as an outcome measure.

*Results:* Twelve studies met the inclusion and exclusion criteria, of which half included control or comparison groups, including four randomised controlled trials. Six studies examined compassion-based therapies, five were mindfulness-based therapies, and one included elements of both mindfulness and compassion (Acceptance and Commitment Therapy). Quality of studies was mixed; main weaknesses were lack of adequate comparison groups and low study numbers. Ten studies reported increases in self-compassion post-intervention. These included studies that utilised compassion and mindfulness-based interventions.

*Limitations:* There was a wide variety of presenting problems and interventions, thus limiting comparisons across studies, and a statistical meta-analysis was not possible.

*Conclusions:* The findings of the review suggest that compassion-focused and mindfulness-based interventions are effective in improving self-compassion. It could not be concluded whether improvements in self-compassion are related to changes in clinical symptoms. Further well-designed studies are required before definitive conclusions can be drawn.

Keywords: Self-compassion, Compassion, Mindfulness, ACT, Review, Clinical
Highlights:

- Twelve compassion and/or mindfulness-based clinical intervention studies were reviewed
- Results suggest self-compassion can be improved through therapeutic intervention
- Limitations included lack of comparison groups and small sample sizes
- Further research addressing methodological weaknesses of studies is required
1. Introduction

1.1. Self-compassion
Self-compassion has been described as one’s attitude towards and relationship with the self (Neff, 2003a). Neff proposes that self-compassion consists of three components: self-kindness (being kind to the self during times of difficulty), common humanity (recognising that difficulties are part of life and shared by others) and mindful acceptance (being aware of and accepting painful thoughts and feelings). Gilbert (2010) explains compassion in terms of the interaction between three types of neurophysiological emotion regulation systems: threat, soothing and incentive seeking (Depue & Morrone-Strupinsky, 2005). According to Gilbert (2005, 2010) the threat system detects threat and is closely linked to negative emotions such as anxiety, anger and disgust. The incentive-seeking system serves to motivate, excite and drive. Finally, the soothing system is proposed to be linked to the human attachment system and serves to manage distress and promote bonding. The three affective systems are believed to balance each other and allow for the regulation and management of emotions (Gilbert, 2010). Within this model, self-compassion is therefore understood as the ability to soothe the self with kindness and non-judgemental understanding when presented with threat or negative affect.

1.2. Self-compassion and psychopathology
Although different models of compassion exist, they share a commonality in predicting a link between self-compassion and positive psychological wellbeing and functioning. In support of this, research has indicated that self-compassion is linked to greater life satisfaction, social connectedness and emotional intelligence (Neff, 2003a), with further research suggesting individuals with higher levels of self-compassion tend to be more extraverted and agreeable, show greater optimism, happiness, curiosity, and positive affect, are less neurotic, and report lower negative affect (Neff et al., 2007). Furthermore, higher levels of self-compassion have been linked to lower levels of anxiety, depression, rumination, shame and self-criticism (Neff, 2003a; Neff & McGehee, 2010; Raes, 2010). Finally, a recent meta-analysis indicated a large effect-size for the association between higher levels of self-compassion and lower levels of psychopathology (MacBeth & Gumley, 2012).

1.3. Self-compassion and psychotherapeutic interventions
Given the recognised link between self-compassion and psychopathology, it would seem reasonable to assume that improvements in self-compassion will lead to reductions in
psychopathology. It should be noted however that such causation has not been directly established. Nevertheless, there has been growing interest in the development of psychotherapeutic interventions that aim to enhance self-compassion. Compassion-focused Therapy (CFT; Gilbert, 2005, 2009) was developed specifically with this aim in mind. However, other therapeutic approaches, such as ACT, DBT and mindfulness-based interventions, also indirectly foster taking a compassionate approach to the self, suggesting that these therapies may share common features with CFT. In addition, ACT, DBT and CFT all include elements of mindfulness practice, thereby overlapping with the core component of mindfulness-based interventions. It therefore follows that these interventions could be considered to be trans-theoretical. That is, they share common features, whilst also drawing upon their own unique processes. The similarities and differences between these approaches will now be discussed further.

1.3.1. Self-compassion and mindfulness

Mindfulness is generally defined as being in the present moment, taking a non-judgmental and accepting stance towards the self and experiences (Kabat-Zinn, 2013). Two established mindfulness-based interventions, Mindfulness-based Cognitive Therapy (MBCT; Segal et al., 2013) and Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn, 2013), have been found to be effective in improving physical and psychological functioning for a wide range of clinical and nonclinical populations (e.g. Chiesa & Serretti, 2009; Hofmann et al., 2010).

Self-compassion has been closely linked to mindfulness. In Neff’s (2003) conceptualisation of self-compassion, mindfulness forms one of the three core components, and is seen as necessary for the other two components (self-kindness and common humanity) to arise. Alternatively, self-compassion may be an outcome of practising mindfulness rather than a component of it. There is some evidence that MBCT and MBSR programmes lead to increases in self-compassion (Birnie et al., 2010; Kuyken et al., 2010; Lee & Bang, 2010; Shapiro et al., 2005; Shapiro et al., 2007). In addition, improved self-compassion has been found to mediate the treatment effects of MBCT on recurrent depression (Kuyken et al., 2010), and the treatment effects of MBSR on stress levels in health care professionals (Shapiro et al., 2005).

Although both MBCT and MBSR have been found to lead to increased self-compassion, neither directly teach self-compassionate skills beyond mindfulness teaching. As such, Neff and Germer (2013) developed the Mindful self-compassion (MSC) programme, with the
primary intention to teach participants ways to increase self-compassion, although mindfulness skills are also taught as a secondary aim. Results from a pilot study and randomised controlled trial (RCT) indicated that the MSC programme was effective in improving self-compassion in a nonclinical population (Neff & Germer, 2013). However, MSC has not yet been applied or evaluated within clinical populations.

1.3.2. Compassion-focused therapy and Compassionate-mind training

Gilbert (2005, 2009) proposed CFT as a way of applying a compassion model to psychotherapy. CFT was developed for individuals with chronic mental health problems, particularly for those experiencing high levels of shame and self-criticism, with the aim to aid the development of self-compassion through enhancing the ability to self-soothe and regulate emotions (Gilbert, 2009). Gilbert describes CFT as an integrated therapy, drawing on different therapeutic models, and social, developmental, evolutionary and Buddhist psychology. Compassionate-mind training (CMT) is a core component of CFT. The model of CMT highlights the key aspects and attributes of compassion (care for well-being, sensitivity, sympathy, distress tolerance, empathy and non-judgement), and the skills training that is required to develop them. These skills include compassionate attention training, compassionate reasoning, compassionate behaviour, compassionate imagery, compassionate feeling and compassionate sensation.

Despite the correlations demonstrated between self-compassion and psychopathology, there is still a scarcity of empirical research investigating CFT/CMT as a psychotherapeutic intervention. This was highlighted in a recent systematic review regarding the effectiveness of CFT/CMT (Leaviss & Uttley, 2015): 14 studies were included in the review, of which only three were RCTs (Braehler et al., 2013; Kelly et al., 2010; Shapira & Mongrain, 2010). In addition, four involved non-clinical populations (Kelly et al., 2010; Kelly et al., 2009; Shapira & Mongrain, 2010; McEwan & Gilbert, unpublished data), including two of the three RCTs. There was also a lack of comparison group and small sample sizes across the majority of studies. In addition, the CFT/CMT interventions varied in terms of duration and delivery, from short self-help based interventions with no therapist input, to 32 hours of therapist led CMT. Nevertheless, Leaviss and Uttley (2015) concluded that, despite the clear methodological weaknesses of the included studies, there is preliminary support for the effectiveness of CFT/CMT as an intervention for mood disorders, although clearly further high quality trials are necessary before more definitive conclusions can be drawn.
Of particular interest for the current review is that only eight of the papers reviewed by Leaviss and Uttley (2015) assessed changes in self-compassion following intervention. Hence, no robust conclusions can be drawn about the impact of CFT/CMT on levels of self-compassion, or whether reductions in mood symptomology occur as a causal effect of increased self-compassion. Of the eight studies that did assess self-compassion, one did not report whether changes in self-compassion were observed (Kelly et al., 2010), six reported improvements in self-compassion (Beaumont et al., 2012; Braehler et al., 2013; Gilbert & Irons, 2004; Gilbert & Procter, 2006; Mayhew & Gilbert, 2008) including one unpublished study (McEwan & Gilbert, unpublished data), and one reported no changes in self-compassion (Laithwaite et al., 2009). However, it is noteworthy that three of the studies did not use a standardised measure of self-compassion, and instead changes in self-compassion were based on diary ratings (Gilbert & Irons, 2004; Gilbert & Procter, 2006) or semi-structured interview (Braehler et al., 2013), thus limiting the validity of the findings.

1.3.4. Acceptance and Commitment Therapy (ACT) and Dialectical Behaviour Therapy (DBT)

Whilst CFT/CMT was developed specifically to teach self-compassionate skills, other ‘third wave’ behaviour therapies, namely DBT and ACT, share common features with compassion-focused and mindfulness-based interventions, and therefore may also indirectly cultivate self-compassion. That is, both ACT and DBT teach mindfulness skills, and share the aim of promoting a compassionate approach to the self and problems.

It has been suggested that there is an overlap between the theory and goals of ACT and conceptualisation of self-compassion (Neff & Tirch, 2013). The aim of ACT is to increase psychological flexibility through six core processes: acceptance, cognitive diffusion, present moment awareness, self as context, values and committed action (Hayes et al., 1999). Dahl et al. (2009) describe how these processes affect compassion for the self and others. They suggest that self-compassion involves being willing to experience difficult emotions, being mindful and observing distressing or shaming thoughts without allowing them to dominate behaviour, and to use self-kindness and self-validation to engage with life’s pursuits, thus linking to Neff’s (2003a) three central components of self-compassion: self-kindness, mindful acceptance and common humanity. ACT has a growing evidence base for various conditions including anxiety disorders, depression, psychosis and chronic pain (Hacker et al., 2016; Öst, 2014; Powers et al., 2009; Swain et al., 2013). In addition, there is some tentative
evidence that ACT increases mindfulness (Forman et al., 2007) and self-compassion (Yadavaia et al., 2014).

DBT was developed originally for patients with Borderline Personality Disorder (BPD; Linehan et al., 1991). The aim in DBT is to aid the acceptance of thoughts, desires and behaviours of patients, alongside encouraging change through the teaching of specific skills to help patients regulate their emotions and modulate unhelpful behaviours (Linehan et al., 1999). The skills are taught in four modules: mindfulness, interpersonal effectiveness, emotion regulation and distress tolerance. Adopting a compassionate approach to the self is interwoven throughout the modules, with the aim of helping the individual to learn to self-soothe and develop inner-compassion (Linehan, 1993). Whilst there have been a number of empirical studies supporting the efficacy of DBT for treating BPD (Valentine et al., 2015), the underlying mechanisms of change have remained relatively unknown. Some initial research indicates that DBT training leads to increased mindfulness (Perroud et al., 2012). Surprisingly however, to date there appears to be no research exploring changes in self-compassion following DBT.

It is also important to note that the above therapies were not designed to target the same presenting problems. Therefore, given that they share the common features of fostering self-compassion, it may be that low self-compassion is a transdiagnostic feature across various presenting problems. As such, targeting self-compassion in therapy could be a useful transdiagnostic approach.

1.5. Summary and review aims

Given the established link between self-compassion and psychopathology it is not surprising that there is a growing body of psychological interventions aimed at improving self-compassion. Although research in this area is in early stages, particularly within clinical populations, there is some initial support for the effectiveness of compassion-focused interventions in terms of symptom improvement. What is less clear is the impact these interventions have on levels of self-compassion. In addition, other established therapeutic interventions including mindfulness-based interventions, ACT and DBT, share commonalities with compassion-focused interventions, and therefore may also directly or indirectly lead to changes in levels of self-compassion. Understanding whether these approaches lead to changes in self-compassion could provide useful information about self-compassion as a mechanism of change in psychological interventions, and whether focusing
on improving self-compassion is an important therapeutic target. It may also provide useful information about whether self-compassion is transdiagnostic.

Therefore, the aim of the current review is to examine whether compassion-focused and mindfulness-based interventions improve self-compassion in adults experiencing clinical levels of mental health problems. For the purpose of this review, the following interventions are of interest due to their implicit or explicit focus on teaching self-compassion skills and/or mindfulness skills: CFT/CMT, MBCT, MBSR, ACT and DBT.

The main questions to be answered are:

1) Do compassion-focused therapies improve levels of self-compassion in those experiencing mental health problems?
2) Do mindfulness-based therapies improve levels of self-compassion in those experiencing mental health problems?
3) Do therapies that include elements of compassion and mindfulness training improve levels of self-compassion in those experiencing mental health problems?

2. Method

The review was conducted following the guidance for undertaking systematic reviews detailed by the Centre of Reviews and Dissemination (CRD; 2009). A protocol for the review was submitted to the PROSPERO International prospective register of systematic reviews.

2.1. Literature search strategy

Studies for the systematic review were identified by searching for articles published in peer-reviewed journals. The following four electronic databases were searched up to the end of November 2015:

- PsycINFO (from 1906)
- Medline (from 1946)
- Embase (from 1947)
- CINAHL (from 1937)
The literature search combined the following keywords: ‘compassion focused therapy*’ or ‘compassionate mind training’ or ‘mindful self-compassion’ or (‘mindfulness based’ or ‘MBCT’ or ‘MBSR’ or ‘acceptance and commitment therapy*’ or ‘ACT’ or ‘dialectical behaviour* therapy*’ or ‘DBT’ and ‘self-compassion’). The literature search identified 492 studies.

2.2. Inclusion and exclusion criteria
Although there has been growing research into psychological approaches that aim to improve self-compassion, initial searches indicated that this has not been widely researched in clinical populations, hence criteria for the current review were kept relatively inclusive.

2.2.1. Study design
To enable maximum breadth of the review, intervention studies published in English were included if they were RCTs, non-RCTs, single-case studies, case series, or within-subjects, repeated measures, published in a peer-reviewed journal. Qualitative studies were excluded.

2.2.2. Population
Studies were included if they involved adults over the age of 18 years with a clinical or subclinical mental health problem assessed by clinical diagnosis or by a validated assessment measure. Given the recent meta-analysis by MacBeth and Gumley (2012) indicated a strong linkage between self-compassion and general psychopathology, no restrictions were placed on type of disorder.

2.2.3. Interventions
Whilst specific compassion-based therapies have been developed to target self-compassion, other ‘third wave’ behavioural interventions, including ACT, DBT and mindfulness-based therapies, share a common factor of promoting a compassionate approach to the self and problems (e.g. Hayes, 2004). Therefore studies were included if the intervention was compassion based (CMT, CFT or MSC), mindfulness-based (MBCT or MBSR), or an intervention that indirectly targets self-compassion and mindfulness (ACT or DBT).

2.2.4. Outcome measure
As this review aimed to examine whether levels of self-compassion change following a psychotherapeutic intervention, only studies that included an outcome measure of self-compassion were included.
To summarise, the 492 studies identified through the literature search were checked against the following criteria:

2.2.5. **Inclusion criteria**

- Written in English
- Published in a peer-reviewed journal
- Adult participants (aged ≥ 18) with a clinical or subclinical mental health problem assessed by clinical diagnosis or by a validated assessment measure
- Design: RCTs, non-RCTs, single-case studies, case series, or within-subjects, repeated measures.
- Intervention: CMT, CFT, MSC, DBT, ACT, MBCT or MBSR

2.2.6. **Exclusion criteria**

- Published in non-peer-reviewed sources such as book chapters and unpublished thesis
- Review articles
- No outcome measure of self-compassion
- Mental health problem without clinical diagnosis or assessment by a validated measure
- Qualitative studies

2.3. **Additional searches**

Twelve studies were identified as meeting the above criteria for this review. The reference lists of these studies were screened for any additional studies, along with the reference lists of two recent reviews (Leaviss & Uttley, 2015; MacBeth & Gumley, 2012). An additional search was conducted based on two key authors in the field of self-compassion – Kirsten Neff and Paul Gilbert. The lists of published articles on relevant websites (www.self-compassion.org and www.compassionatemind.co.uk) were also searched. No further papers were identified from these additional searches. Figure 1 provides a detailed breakdown of the literature search procedure.
2.4. Data extraction and quality criteria of included studies

2.4.1. Data extraction

Data for all of the included papers was extracted using a standardised template developed by the author (see Appendix B). The data extracted included study and participant characteristics, treatment conditions and treatment outcomes.

2.4.2. Quality criteria

Many quality assessment tools developed for use in systematic reviews are aimed at the evaluation of RCTs, including those developed by the Scottish Intercollegiate Guidelines Network (SIGN, 2014) and the CRD (2009). However, as the current review expected heterogeneity among study design, the author consulted a review of 60 quality assessment tools for evaluating non-randomised intervention studies (Deeks et al., 2003). This review
concluded that six tools were suitable for purpose, including the checklist for measuring study quality developed by Downs and Black (1998). This was considered the most relevant checklist for the current review. However, it is widely recognised that whilst many tools exist for assessing the methodological quality of papers, no single approach is appropriate for all systematic reviews. The Cochrane Handbook for Systematic Reviews of Interventions (Higgins & Green, 2011) recommends that existing rating tools should be adapted, or new tools created, in order to answer the specific review question. The Downs and Black (1998) checklist was therefore adapted to suit the aims of the current review, taking into consideration the changes made by Cahill et al. (2010) for assessing practice-based research on psychological therapies.

The final checklist for assessing the methodological quality of the studies included in the current review consisted of 27 items covering four areas: ‘reporting’ (11 items), ‘external validity’ (4 items), ‘internal reliability of measurement and treatment’ (5 items) and ‘internal reliability of confounding variables/selection bias’ (7 items). Each item was rated as ‘yes’ (1 point), ‘no’ (0 points) or ‘unable to determine’ (0 points) based on whether the paper had addressed the item appropriately (see Appendix C). This allowed a total score for each study to be calculated, out of a maximum 27 points. Data extraction and the rating of the studies was initially completed by the first author of this review. A Psychology PhD student independently reviewed six of the studies (50%). Initial agreement between raters was 84%. All differences between raters were thoroughly discussed and amended appropriately.

3. Results

Twelve studies were deemed eligible for this review, meeting inclusion and exclusion criteria. The reasons for exclusion of 22 studies that were excluded after full review are summarised in Appendix D. The primary reason for exclusion was lack of self-compassion outcome measure.

3.1. Study characteristics

The main characteristics and findings of the studies included in the review are summarised in Table 1.
3.1.1. Study design and treatment conditions

Of the twelve studies included in the review, there were four RCTs, two non-randomised controlled trials, three within-subjects, and three case series/single case studies. Interventions included ACT (one study), MBSR (one study), MBCT (four studies) and CFT/CMT (six studies). Table 2 outlines the key details of the interventions used in each study. Of the six CFT/CMT studies, one described the treatment as “CBT+CFT” (CBT: Cognitive Behavioural Therapy) and one described it as “EMDR+CFT” (EMDR: Eye Movement Desensitisation and Reprocessing). No DBT studies were identified that met inclusion/exclusion criteria. The interventions varied in terms of format and duration: eight involved a group format and five involved individual treatment. All studies involved the delivery of therapy, with the exception of one which involved a self-help intervention with no therapist contact. Treatment duration varied, with the self-help intervention lasting 3 weeks, individual treatment ranging from 8 to 12 sessions, and group treatment ranging from a single workshop of six hours to 20 sessions. One study did not report the number of sessions.

3.1.2. Sample characteristics

All studies recruited adult participants with clinical or subclinical mental health problems. Five studies assessed participants according to the relevant DSM criteria, through the use of clinical interview and/or standardised self-report measures. Three studies used self-report measures and/or clinical interview, one study relied on GP diagnosis and three studies did not describe assessment of diagnosis. The investigated conditions were anxiety disorders (n=5), including social anxiety (n=2); Post-Traumatic Stress Disorder (PTSD)/trauma symptoms (n=2) and perinatal anxiety (n=1); depression (n=2); mixed anxiety and depression (n=1); psychosis (n=2); binge eating disorder (BED; n=1) and “high psychological distress”, assessed by a score of 10 or higher on the General Health Questionnaire, (n=1). The majority (n=10) of interventions were conducted in community or clinical outpatient settings. One study involved inpatients in a secure forensic setting, and one study was a self-help intervention, completed by participants at home. The total sample size included in this review was 465. The range across all studies was 1 – 114 (mean = 39). Across the 11 studies that reported gender, three included only males, and one included only females. Of the remaining seven studies, the average percentage of females was 67%.
3.1.3. **Comparison and control groups**

Six studies did not utilise a control or comparison group. Of the six remaining studies, two used waiting list controls and four used active treatment controls, namely CBT, aerobic exercise (AE) and maintenance anti-depressant medication (mADM).

3.1.4. **Outcome measures**

In order to assess levels of self-compassion, all studies used the Self-compassion Scale (SCS), or SCS-Short Form (SCS-SF), developed by Neff (2003a), which has been validated for use in adult populations. Studies also used other valid and reliable outcome measures to assess mood symptomology. Full details of outcome measures used are presented in appendix E.
<table>
<thead>
<tr>
<th>Authors, year</th>
<th>Design</th>
<th>Population: diagnosis/presenting problem (assessment tool)</th>
<th>Intervention and control/comparison (N)</th>
<th>Mean age (years) at baseline (SD); % female</th>
<th>Self-compassion measure</th>
<th>Assessment points</th>
<th>Main self-compassion outcome and effect size</th>
<th>Other key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaumont et al. (2012)</td>
<td>Non-RCT</td>
<td>Requiring treatment after trauma (not reported)</td>
<td>CBT + CMT (16) vs. CBT (16)</td>
<td>Not reported</td>
<td>SCS</td>
<td>Pre- and post-intervention</td>
<td>Both interventions led to significant increase in SC; CBT+CMT group had higher levels of SC post-therapy compared to the CBT only group. Fear of SC moderated the benefits of the intervention: those with lower fear ratings benefitted more than those with higher fear ratings.</td>
<td>Effect size n/a</td>
</tr>
<tr>
<td>Beaumont and Martin (2013)</td>
<td>Single case study</td>
<td>Trauma related phobic symptoms (HADS, IES-R, DES-11)</td>
<td>EMDR + CMT (1)</td>
<td>58</td>
<td>SCS-SF</td>
<td>Pre-, mid-, post-treatment and 9 month follow-up</td>
<td>SC moved from ‘low’ range pre-treatment to ‘high’ range post-treatment; maintained at 9-month follow-up</td>
<td>Effect size n/a</td>
</tr>
<tr>
<td>Study Authors</td>
<td>Study Design</td>
<td>Group Details</td>
<td>Intervention Details</td>
<td>Pre- and post-treatment and 2-4 week follow-up.</td>
<td>Effect size</td>
<td>Notes</td>
<td></td>
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<tr>
<td>Boersma et al. (2015)</td>
<td>Single case series</td>
<td>Social Phobia (fulfilling DSM-IV criteria as measured by the SPSQ)</td>
<td>CFT (6) Age range 20-32 years; mean not reported</td>
<td>83% 5 out of 6 participants showed significant improvements in SC post-treatment</td>
<td>n/a</td>
<td>3 participants’ social anxiety scores reduced post-treatment</td>
<td></td>
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</tr>
<tr>
<td>Goodman et al. (2014)</td>
<td>Within-subjects</td>
<td>Pregnant women with elevated anxiety symptoms (self-report questionnaires and clinical interview)</td>
<td>CALM pregnancy programme based on MBCT (24) No control</td>
<td>Pre- and 1 week post-intervention</td>
<td>100%</td>
<td>Intervention led to significant increases in SC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jazaieri et al. (2012)</td>
<td>RCT</td>
<td>Social Anxiety Disorder (fulfilling DSM-IV criteria assessed by structured clinical interview)</td>
<td>MBSR (31) vs. AE (25) Untreated control (29)</td>
<td>MBSR: 32.9 (8.83) 61% MBSR and AE led to significant improvements in SC</td>
<td>Not reported</td>
<td>Significant improvements in anxiety, worry and depression; significant increase in mindfulness</td>
<td></td>
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</tr>
<tr>
<td>Kelly and Carter (2015)</td>
<td>RCT</td>
<td>Binge Eating Disorders (meeting DSM-5 criteria assessed by self-report questionnaire and interview)</td>
<td>CFT-based self-help intervention (15) vs. CBT based self-help intervention (13) vs. WL control (13)</td>
<td>MBSR and AE led to significant improvements in SC Compared to untreated controls, AE showed significant improvement in SC</td>
<td>Not reported</td>
<td>Both groups showed significant increases in self-esteem, social integration and satisfaction with life and reductions in social anxiety and depression post-intervention and at follow-up.</td>
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</tbody>
</table>

SCS: Social Cognition Scale

CFT: Cognitive Behavioral Therapy

MBCT: Mindfulness-Based Cognitive Therapy

MBSR: Mindfulness-Based Stress Reduction

AE: Activity Engagement

WL: Waitlist
<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Participants</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuyken et al. (2010)</td>
<td>RCT</td>
<td>Recurrent depression (3+ previous episodes meeting DSM-IV criteria assessed from medical records and screening interviews)</td>
<td>MBCT (52) vs. mADM (62)</td>
<td>MBCT: 50 (10.64); 79% vs. mADM: 49 (11.84); 76%</td>
<td>Pre- and 1 month post-intervention MBCT group showed significant increase in SC. MBCT group had significantly greater improvements in SC and mindfulness compared to mADM group. Cohen’s $d = .50$ (medium effect size) SC and mindfulness mediated the effect of MBCT on depressive symptoms.</td>
</tr>
<tr>
<td>Laithwaite et al. (2009)</td>
<td>Within-subjects</td>
<td>Schizophrenia, schizo-affective disorder or bi-polar affective disorder (not reported)</td>
<td>CMT (18)</td>
<td>No control</td>
<td>Pre-, mid-, post-intervention and 6-week follow-up No significant changes in SC $r = .22$ (small to medium effect size) Significant improvements in depression, self-esteem, shame, social comparison and general psychopathology</td>
</tr>
<tr>
<td>Mayhew and Gilbert (2008)</td>
<td>Case series design</td>
<td>Schizophrenia (not reported)</td>
<td>CMT (3)</td>
<td>No control</td>
<td>Pre- and post-intervention One out of three participants showed decreases in depression, anxiety, eating disorder pathology, eating concerns and weight concerns compared to other conditions.</td>
</tr>
<tr>
<td>Study</td>
<td>Study Design</td>
<td>Sample Characteristics</td>
<td>Intervention</td>
<td>pre- and post-intervention SC</td>
<td>Intervention Design</td>
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<tr>
<td>Radford <em>et al.</em> (2012)</td>
<td>Within-subjects</td>
<td>Vulnerable to depressive relapse, mild-moderate symptoms of anxiety, depression or CFS (GP)</td>
<td>MBCT (17)</td>
<td>48 (8) SCS 71%</td>
<td>No control</td>
</tr>
<tr>
<td>Schoenberg and Speckens (2014)</td>
<td>Non-RCT</td>
<td>Depression (meeting DSM-IV criteria as assessed by consultant psychiatrist)</td>
<td>MBCT (26) vs. WL (25)</td>
<td>MBCT: 47.8 (12.1); 77% WL: 51.2 (8.5); 48%</td>
<td>MBCT led to significant improvements in SC</td>
</tr>
<tr>
<td>Yadavaia <em>et al.</em> (2014)</td>
<td>RCT</td>
<td>Undergraduates with low SC and high psychological distress (assessed by scores on SCS and GHQ)</td>
<td>ACT (30) vs. WL (43)</td>
<td>ACT: 19.9 (4.05); 70% WL: 20.83 (4.61); 77%</td>
<td>ACT led to significant increases in SC. The ACT group showed greater improvements in SC compared to waiting list control.</td>
</tr>
</tbody>
</table>
SC: self-compassion; RCT: randomised controlled trial; CBT: cognitive behavioural therapy; CFT: compassion-focused therapy; CMT: compassionate mind training; MBCT: mindfulness-based cognitive therapy, MBSR: mindfulness-based stress reduction; ACT: acceptance and commitment therapy; CALM: coping with anxiety through living mindfully; WL: waiting list; SCS: self-compassion scale; SCS-SF: self-compassion scale short form; GHQ: general health questionnaire; OCD: obsessive compulsive disorder; SPSQ: Social Phobia Screening Questionnaire, mADM: maintenance anti-depressant medication
Table 2: Summary of interventions

<table>
<thead>
<tr>
<th>Authors, year</th>
<th>Key components of treatment</th>
<th>Format</th>
<th>Length</th>
<th>Follow-up period post intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compassion-based interventions</strong></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Beaumont et al. (2012)</td>
<td>CMT: compassionate imagery, letter writing, grounding work (+ CBT)</td>
<td>Individual</td>
<td>Not specified</td>
<td>None</td>
</tr>
<tr>
<td>Beaumont and Martin (2013)</td>
<td>CMT: compassionate imagery, letter writing, mindful breathing (+ EMDR)</td>
<td>Individual</td>
<td>8 sessions</td>
<td>9 months</td>
</tr>
<tr>
<td>Boersma et al. (2015)</td>
<td>CFT: compassionate imagery, thoughts, and letter writing, mindful breathing, values</td>
<td>Individual</td>
<td>8 weekly sessions of 1 hour</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Kelly and Carter (2015)</td>
<td>CFT: SC imagery exercises, SC letter writing, compassionate self-talk</td>
<td>Individual</td>
<td>3 weeks following a self-help contact</td>
<td>None</td>
</tr>
<tr>
<td>Laithwaite et al. (2009)</td>
<td>CMT: understanding compassion and the ‘ideal friend’; compassionate letter writing</td>
<td>Group</td>
<td>2 sessions per week for 10 weeks (20 sessions total)</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Mayhew and Gilbert (2008)</td>
<td>CMT: discussions about SC, generating feelings of warmth, compassionate imagery, re-evaluating critical thoughts</td>
<td>Individual</td>
<td>12 sessions of 1 hour</td>
<td>6 months</td>
</tr>
<tr>
<td><strong>Mindfulness-based interventions</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Kuyken et al. (2010)</td>
<td>MBCT protocol (Segal et al., 2002)</td>
<td>Group</td>
<td>8 weekly sessions of 2 hours</td>
<td>1 month</td>
</tr>
<tr>
<td>Goodman et al. (2014)</td>
<td>MBCT protocol (Segal et al., 2002)</td>
<td>Group</td>
<td>8 weekly sessions of 2 hours</td>
<td>1 week</td>
</tr>
<tr>
<td>Jazaieri et al. (2012)</td>
<td>MBSR protocol (Kabat-Zinn, 1990)</td>
<td>Group</td>
<td>8 weekly sessions of 2.5 hours, plus 1 day meditation retreat</td>
<td>3 months</td>
</tr>
<tr>
<td>Study</td>
<td>Intervention</td>
<td>Group</td>
<td>Duration</td>
<td>Length</td>
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<td>-------------------------------</td>
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</tr>
<tr>
<td>Radford et al. (2012)</td>
<td>MBCT protocol (Segal et al., 2002)</td>
<td>Group</td>
<td>8 weekly sessions</td>
<td>6 months</td>
</tr>
<tr>
<td>Schoenberg and Speckens (2014)</td>
<td>MBCT protocol (Segal et al., 2002)</td>
<td>Group</td>
<td>8 weekly sessions of 2.5 hours</td>
<td>None</td>
</tr>
<tr>
<td><strong>Compassion and mindfulness-based interventions</strong></td>
<td></td>
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<tr>
<td>Yadavaia et al. (2014)</td>
<td>ACT: defusion from self-criticism, cultivating self-kindness and acceptance, compassionate imagery</td>
<td>Group</td>
<td>6 hours</td>
<td>8-9 weeks</td>
</tr>
</tbody>
</table>
3.2. Assessment of methodological quality

Table 3 presents the results of the assessment of methodological quality of the included studies. The results revealed a high level of variability across quality criteria items. Overall scores ranged from 12/27 to 25/27, with the mean score 18/27. The highest scoring studies were all RCTs (Jazaieri et al., 2012; Kelly & Carter, 2015; Kuyken et al., 2010; Yadavaia et al., 2014). On the whole, these RCTs were well-designed, ensuring most threats to validity were addressed. Participants were randomly allocated to treatment conditions, intent-to-treat analysis was performed and treatment compliance was monitored. Four of the lowest scoring studies had no form of control group (Beaumont & Martin, 2013; Boersma et al., 2015; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). In addition, sample sizes were small and generalisability was limited.

The majority of studies used valid and reliable outcome measures. One study used measures that had not been validated for the population (Laithwaite et al., 2009). Eleven studies provided an adequate description of the treatment intervention programme, and ten detailed that the intervention was delivered by competent and trained therapists (see Table 3). Checks for treatment compliance was addressed by nine studies. Attrition was dealt with appropriately by all but one study (Schoenberg & Speckens, 2014), who did not report attrition in sufficient detail or consider in the data analysis.

Some aspects of methodological quality were not well addressed by any of the studies. For example, only one study reported the use of a power analysis (Schoenberg & Speckens, 2014), and sample sizes were relatively small across most studies. In terms of design, the lack of a control or comparison group in six studies, and the use of waiting list controls in three studies, limits the conclusions that can be drawn (see Table 1). In addition, many of the studies failed to have an adequate follow-up period. Effect sizes were calculated by five studies (Kelly et al., 2014; Kuyken et al., 2010; Laithwaite et al., 2009; Radford et al., 2012; Yadavaia et al., 2014).

In terms of sample representativeness, some studies failed to include sufficient information about the source population of participants, the proportion who were asked to participate and those that agreed. Although eight studies were considered to have recruited from a representative population, only two were deemed to have a representative sample of participants (Jazaieri et al., 2012; Kuyken et al., 2010).
Table 3: Quality assessment of studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Quality criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaumont et al. (2012)</td>
<td>1</td>
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<tr>
<td>Beaumont and Martin (2013)</td>
<td>1</td>
</tr>
<tr>
<td>Beecroft et al. (2015)</td>
<td>1</td>
</tr>
<tr>
<td>Goodman et al. (2014)</td>
<td>1</td>
</tr>
<tr>
<td>Jazaieri et al. (2012)</td>
<td>1</td>
</tr>
<tr>
<td>Kelly and Carter (2015)</td>
<td>1</td>
</tr>
<tr>
<td>Kuyken et al. (2010)</td>
<td>0</td>
</tr>
<tr>
<td>Laithwaite et al. (2009)</td>
<td>1</td>
</tr>
<tr>
<td>Mayhew and Gilbert (2008)</td>
<td>1</td>
</tr>
<tr>
<td>Radford et al. (2012)</td>
<td>1</td>
</tr>
<tr>
<td>Schoenborg and Speckens (2014)</td>
<td>1</td>
</tr>
<tr>
<td>Yadav et al. (2014)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Adequate control or comparison group</td>
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<td>21</td>
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<td>26</td>
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<td>27</td>
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</tbody>
</table>

**“total score”**  | 15 | 12 | 16 | 18 | 25 | 22 | 25 | 15 | 15 | 18 | 17 | 23
The main aim of this review was to assess whether changes in levels of self-compassion are observed following an intervention that is compassion-focused, mindfulness-based, or an intervention that indirectly targets self-compassion and mindfulness i.e. ACT and DBT. A narrative synthesis of the results by type of intervention is provided below.

3.3. Do compassion-focused therapies improve levels of self-compassion?
Six studies assessed whether CMT/CFT increase levels of self-compassion and Table 2 provides a summary of the interventions utilised. Of note, three studies used a ‘pure’ CFT/CMT intervention, whilst two combined CFT/CMT with other psychological interventions (CBT, EMDR). Only one study delivered CMT in a group setting. All studies provided an adequate description of the intervention that was delivered, and four studies monitored treatment compliance (Beaumont & Martin, 2013; Boersma et al., 2015; Kelly & Carter, 2015; Mayhew & Gilbert, 2008). None of the studies conducted power calculations.

Two CMT/CFT studies utilised comparison groups. Kelly and Carter (2015) carried out a pilot RCT comparing the effectiveness of a CFT-based self-help intervention with a CBT-based self-help intervention for individuals with BED, whilst Beaumont et al. (2012) carried out a non-RCT comparing CBT+CMT with CBT only for participants who were requiring therapy post-trauma. Both studies reported statistically significant increases in self-compassion post-intervention. In addition, the results of Kelly and Carter (2015) indicated that the CFT-based intervention produced greater improvements in self-compassion compared to the other conditions, with a small to medium effect size. In their study, Beaumont et al. (2012) reported the CBT+CMT group developed more self-compassion than the CBT only group. However, no effect sizes were reported.

The RCT by Kelly and Carter (2015) was overall well-designed. However, the small sample size and lack of follow-up period compromises the validity of the study. Participants did not receive any therapist input and the intervention was relatively short in duration: participants completed the self-help intervention on their own over a three-week period. The external validity of this study was compromised due to the recruitment process, which included advertising for participants in hospitals and in the community. This may have resulted in highly motivated participants being selected, limiting the generalisability of the findings. In addition, participants were predominately white females, again limiting the generalisability to other populations. Nevertheless, this study provided some preliminary evidence that brief CFT is effective in increasing levels of self-compassion.
The non-RCT by Beaumont et al. (2012) had a low quality criteria rating. There was a lack of information provided about the characteristics of the participants. For example, it was not reported whether participants had a diagnosis of PTSD or any other clinical diagnosis. The small number of participants were randomised into one of the two treatment conditions based on type of trauma they experienced. This meant the allocation of participants to the treatment groups was not fully randomised. The exact number of therapy sessions each participant received was not recorded, only that participants received up to 12 weeks of therapy. The study did not consider potential confounding factors that may have influenced outcomes. The lack of follow-up period is an additional risk to the validity of this study. In addition, treatment compliance was not assessed. The ability to generalise the findings more widely is compromised due to these limitations. However, it is worth noting that the ecological validity is relatively high due to the study being conducted in a real-life setting with participants who had been referred for therapy.

The findings of the two studies that utilised a comparison group indicate suggest that CFT/CMT is effective in increasing levels of self-compassion. However, the methodological weaknesses of the studies suggest that these findings must be interpreted with caution.

Three studies carried out case series/single case studies. Boersma et al. (2015) carried out a single case experimental design to explore the effectiveness of CFT in the treatment of social phobia. CFT was delivered on an individual basis and the participants acted as their own control. Five out of the six participants were found to have significant improvements in self-compassion post-treatment. Mayhew and Gilbert (2008) carried out a case series design to explore the effectiveness of CMT for individuals with psychosis. Three participants completed 12 sessions of individual CMT. One participant was found to show an increase in self-compassion post intervention and at six month follow-up. Beaumont and Martin (2013) carried out a single case study to explore the impact of combining CMT with EMDR to treat post-trauma symptoms. The participant received eight sessions of EMDR+CMT. Self-compassion was found to increase, moving from the ‘low’ range pre-treatment, to the ‘high’ range post-treatment. In addition, this study had a good follow-up period of 9 months, and the increase in self-compassion was found to be maintained at this point.

Although all three were well-designed case studies, due to the nature of the design, they all had similar weaknesses and therefore had low quality criteria ratings. The small sample sizes
and lack of control or comparison group compromises the internal and external validity of all three studies. In addition, Boersma et al. (2015) used a relatively short baseline measurement and follow-up period. Conversely, the length of follow-up period was a strength of Mayhew and Gilbert (2008) and Beaumont and Martin (2013). It is also worth noting in Boersma et al. (2015) that although the participants met criteria for social phobia as per DSM-IV, they were not recruited from a clinical population and involved students responding to advertisements. Thus they may have been highly motivated individuals and the findings may have limited generalisability. In addition, although the intervention was manualised, it was delivered by two different clinicians who were not highly trained to deliver the intervention, threatening the internal validity of the study. Finally, because the intervention delivered by Beaumont and Martin (2013) was combined EMDR and CMT, the study design does not allow the individual contributions of CMT and EMDR to the observed increase in self-compassion to be assessed.

Laithwaite et al. (2009) conducted the only group intervention of CMT included in this review. The study was a within-subjects design, to explore the effectiveness of group CMT for individuals with psychosis in a forensic setting. Despite reductions in clinical symptoms, no significant changes in self-compassion were found, with a small to medium effect size reported. This study had a small sample size with only 18 participants completing the group, which consisted of 20 sessions over 10 weeks. In addition, a number of the outcome measures used have not been validated for use within a forensic population. It also lacked an adequate control or comparison group. All of this threatens the internal validity of the study and limits the conclusions that can be drawn. However, although these weaknesses also limit the generalisability of the findings, it does have good ecological validity in the naturalistic aspect of its design: it was conducted in a real-life forensic setting.

To conclude, of the six studies that assessed whether compassion-focused therapies are effective in increasing levels of self-compassion, four reported findings in support of this. However, given the methodological weaknesses of the included studies, the findings should be considered preliminary with further research warranted. In particular, the lack of control and comparison groups makes it difficult to conclude the findings were as a result of the intervention or other extraneous variables.
3.4. Do mindfulness-based therapies improve levels of self-compassion?
Five studies assessed whether mindfulness-based interventions improve levels of self-compassion. Table 2 provides details of the interventions used: four studies utilised the eight week MBCT group program developed Segal et al. (2002), and one MBSR study followed the MBSR group programme developed by Kabat-Zinn (1990). All studies provided an adequate description of the intervention or referenced the appropriate manual, but only three studies adequately checked for treatment compliance (Goodman et al., 2014; Kuyken et al., 2010; Radford et al., 2012). Only one study conducted a power analysis (Schoenberg & Speckens, 2014).

Three studies included a comparison group, two of which were RCTs and one a non-randomised design. Jazaieri et al. (2012) carried out a well-designed RCT comparing the effectiveness of MBSR with AE and an untreated control group for individuals with social anxiety disorder. Participants were randomly assigned to either MBSR or AE. The untreated control group were recruited as part of a separate RCT, but were matched to the participants of the current RCT. MBSR led to significant improvements in self-compassion. However, this was comparable with the AE participants. No effect sizes were reported.

Kuyken et al. (2010) explored self-compassion and mindfulness as mechanisms of change in MBCT. Their study was embedded in an RCT comparing the effectiveness of MBCT with mADM over a 15 month study period (Kuyken et al., 2008). Participants were randomly assigned to either MBCT plus support to taper or discontinue anti-depressant medication (ADM), or mADM alone. Although Kuyken et al. (2010) were assessing self-compassion as a mediator rather than outcome of MBCT, significant improvements in self-compassion were reported for MBCT compared to mADM, with medium effect size. Self-compassion was also found to mediate the effect of MBCT on depression.

Both RCTs were well-designed with minimal most threats to validity: the randomisation procedure was described, attrition rates were detailed, intent-to-treat analysis was conducted, and potential confounding variables were considered and controlled for. In addition, Kuyken et al. (2010) videotaped all trial groups to control for treatment compliance. However, treatment compliance was not monitored by Jazaieri et al. (2012). Kuyken et al. (2010) had a short follow-up period of only one month and did not include a placebo comparison group.
In both RCTs, the generalisability of findings is compromised. Jazaieri et al. (2012) recruited participants through web-based community listings, requiring participants to volunteer, which may have resulted in an unrepresentative population with high levels of motivation. Kuyken et al. (2010) excluded a large number of potential participants: those included were in remission from depression, treated with ADM and willing to try the MBCT approach, thereby limiting generalisability of the findings.

Schoenberg and Speckens (2014) conducted a non-RCT looking at neural working mechanisms in MBCT. However, because the study involved participants completing an MBCT programme and included a measure of self-compassion, it was felt relevant to include this study in this review. Participants with depression were allocated to either complete the MBCT programme or to a waiting list control, although there was a lack of information provided about the recruitment process. Completion of the MBCT programme led to significant improvements in self-compassion. Whilst this study had a number of strengths including conducting a power calculation, there was no randomisation, no intent-to-treat analysis conducted, no effect sizes calculated, there was not an adequate follow-up period and the generalisability of the findings was compromised.

The findings from the two RCTs and one non-RCT suggest that MBCT is effective in improving self-compassion. However, methodological weaknesses across all studies must be taken into consideration when interpreting this finding.

The two remaining studies were within-subjects, repeated measures in design, thereby a key weakness of both was the lack of control and comparison groups. Both also lacked adequate sample sizes. Goodman et al. (2014) recruited a small sample of participants to explore the effectiveness of a MBCT programme for pregnant women with elevated anxiety symptoms. Following completion of the group, significant increases in self-compassion were found. However, the study lacked power. Although confounding variables were identified, these were not controlled for. The participant demographics (well-educated, older women) limits generalisability to other groups of women, and there was no adequate follow-up period.

Radford et al. (2012) also conducted a repeated measures design to explore the effectiveness of a MBCT programme for primary care patients. Participants were referred to the programme by their GP, and had mixed diagnoses, including depression, anxiety and chronic fatigue syndrome (CFS). The MBCT programme led to significant improvements in levels of
self-compassion, with medium effect size, and this was maintained at six month follow-up. Strengths of this study were that intent-to-treat analysis was conducted and effect sizes calculated. It has high ecological validity and provides some tentative support for the effectiveness of MBCT in increasing levels of self-compassion.

To conclude, all studies reported improvements in self-compassion following completing of MBCT or MBSR. However, as there were only two well-designed RCTs, again methodological weaknesses suggest further research is required before firm conclusions are drawn.

3.5. Do therapies that include elements of compassion and mindfulness training improve levels of self-compassion?

Only one study assessed whether ACT increases levels of self-compassion. Yadavaia et al. (2014) completed a RCT comparing the effectiveness of a 6-hour ACT workshop with a waiting list control for a small sample of undergraduates with low self-compassion and high psychological distress. Table 2 provides a summary of the intervention. Participants were randomly allocated to either the active treatment or the waiting list control. Significant increases in self-compassion were found in those who attended the ACT workshop compared to the waiting list control. Post-intervention changes yielded a medium effect size, whilst a large effect size was observed at follow-up, although this follow-up period was short in duration.

Overall, this was a well-designed RCT controlling for the majority of potential threats to validity. Intent-to-treat analysis was performed and treatment compliance was monitored. The use of a waiting list control group, rather than an active treatment comparison, limits the conclusions that can be drawn. The external validity of this study is potentially compromised due to the population sampled: undergraduates are unlikely to be representative of the general population, limiting the generalisability of the findings. Nevertheless, this study provides some preliminary evidence that ACT is effective in increasing levels of self-compassion. Although minimal conclusions can be drawn based on one study, the findings do suggest that further research in this area is warranted.
4. Discussion

The aim of this systematic review was to examine whether compassion-focused and mindfulness-based interventions improve self-compassion in adults experiencing clinical levels of mental health problems. There has been growing interest in the application of compassion-focused and mindfulness-based therapies. A recent systematic review (Leaviss & Uttley, 2015) of the effectiveness of compassion-focused interventions included studies utilising clinical and nonclinical populations. It also included studies that did not report whether self-compassion changed following the intervention. This review therefore adds to the current literature by looking specifically at changes in levels of self-compassion in those with clinical presentations. This is pertinent given self-compassion has been strongly linked with psychological distress, and as such may be a potential mechanism for therapeutic change. As other established therapeutic approaches have conceptual links with self-compassion, this review extends previous literature by including those studies that may directly or indirectly lead to changes in self-compassion.

4.1. Summary of research findings

Twelve studies were identified in the review, and all but two of the studies found that self-compassion levels increased post intervention. Although effect sizes were not reported by all studies, of the five that did, in general moderate effect sizes were found.

4.1.1. Clinical Presentation

This review included a wide range of presenting problems and clinical presentations. Improvements in self-compassion were found across the range of these presentations, excluding psychosis: the two studies that found nonsignificant changes were the two studies of participants with psychosis. However, these studies both had methodological weaknesses that limit the validity and generalisability of the findings. It is also difficult to draw firm conclusions by clinical presentation given that the different presenting problems were examined only by a small number of studies using different interventions. The recruitment of participants was also a common limitation across the studies: recruiting participants through advertisements is likely to result in a bias towards highly motivated participants, and not a representative sample of the target presenting problem. For example, Jazaieri et al. (2012) required individuals with social anxiety disorder to voluntarily respond to advertisements. Thus, it is possible that the individuals motivated to do this may have had less severe social anxiety symptoms than those clinically referred for treatment.
4.1.2. Type of intervention

The most commonly used therapeutic intervention included in this review was CFT/CMT (six studies). The findings from four of these studies suggest that CFT/CMT is effective in improving levels of self-compassion. However, it is also worth noting that of these four studies, two lacked any control or comparison group, making it difficult to conclude that the observed changes were down to the CFT/CMT intervention alone. Across all studies the small sample sizes were a significant cause for concern, highlighting a likely lack of statistical power. In addition, within the CFT/CMT studies there was wide variability in terms of the nature of the intervention, making it difficult to compare studies. For example, all interventions were delivered on an individual basis, bar one that was delivered in a group setting and one that involved no therapist contact. Most were delivered over eight sessions, but longer and shorter interventions were also utilised. It is therefore unclear at this stage what the dose-response relationship is for CFT/CMT. Interestingly, the group-based intervention was also the longest in duration and led to no significant changes in self-compassion. However, as this study was the only one conducted in a forensic setting, this restricts the conclusions that can be drawn regarding the effectiveness of CFT/CMT delivered in this format, and for this population.

Of the individual interventions, in two studies CFT/CMT was combined with other established psychological therapies (CBT and EMDR), thereby limiting the comparisons that can be made with the other ‘pure’ CFT/CMT interventions. However, the findings of this review suggest self-compassion improved whether CFT/CMT was delivered as a standalone treatment, or when it was combined with another treatment, although future research is required to address this fully. It would also be pertinent to assess whether CFT/CMT adds to the effectiveness of established therapies, such as CBT and EMDR. Further robust research would allow this through comparing effect sizes between CFT/CMT when it is delivered as a sole intervention and when it is used as an adjunct to other treatments, and also comparing it with other established psychological therapies.

Mindfulness-based interventions were the second most commonly used therapeutic intervention (five studies). These studies fared better in terms of methodological quality, and as these studies all followed the same established treatment protocols for MBCT or MBSR, comparisons across studies is easier. All studies found significant improvements in levels of self-compassion. However, there was a lack of adequate comparison groups: no study
compared MBCT with any established therapy, such as CBT, therefore it cannot be fully concluded that the observed effects were due to the intervention. Most studies also had an inadequate follow-up periods, so it is unclear whether the observed increases in self-compassion were maintained over time. Due to populations sampled and recruitment processes, generalisability of the findings was compromised in most studies as well. Power analysis was only reported by one study. Nevertheless, despite not directly targeting self-compassion, results suggest mindfulness-based interventions do appear to lead to improved self-compassion.

Only one study involved ACT as the therapeutic intervention, limiting the conclusions that can be drawn. Notwithstanding this, it is worth highlighting that the ACT study was felt to be a well-designed RCT, despite some methodological weaknesses limiting the validity and generalisability of the findings. This suggests that future research into whether ACT improves self-compassion is warranted. As this study delivered ACT in a workshop setting, it could be beneficial to explore whether ACT delivered on an individual basis also leads to increased self-compassion.

4.1.3. Symptom improvement

The majority of studies reported significant improvements in the range of other clinical outcomes they assessed, such as mood and anxiety symptomology, post-traumatic symptoms, binge eating and psychotic experiences. This suggests that targeting self-compassion could be a useful transdiagnostic approach. Of note, Boersma et al. (2015) reported that despite five participants showing significant improvements in self-compassion, only three social anxiety scores reduced post-treatment. Conversely, Laithwaite et al. (2009) found no significant improvements in self-compassion, but did find improvements across a range of outcomes including depression, self-esteem and shame. Similarly, Mayhew and Gilbert (2008) reported only one participant showed improvement in self-compassion, whilst all three participants showed decreases across a wide range of other outcomes including depression, anxiety and paranoia. This suggests that improvements in clinical symptoms and self-compassion may not necessarily occur concurrently. However, again the small number of studies and methodological weaknesses indicate that further longitudinal research is required to explore this fully. For example, it would be valuable to assess whether baseline self-compassion prospectively predicts symptom change in patients receiving psychological therapy for mental health problems, and/or whether levels of self-compassion change as symptoms improve.
4.1.4. Self-compassion changes in comparison groups

Four studies utilised an active treatment comparison: CBT+CMT was compared with CBT; MBSR was compared with AE; CFT self-help was compared to CBT self-help; MBCT was compared with mADM. In three studies, the intervention of interest produced greater improvements in self-compassion compared to the treatment comparison. However, there was no difference found between MBSR and AE: both led to significant improvements in self-compassion. Future studies would benefit from further comparisons of CFT/CMT with established treatments, such as CBT and MBCT, to establish whether CFT/CMT leads to greater increases in self-compassion.

4.2. Measuring self-compassion

All studies used the SCS (Neff, 2003a) to assess self-compassion (one used the SCS-SF). The SCS covers six factors associated with self-compassion: self-kindness, self-judgment, common humanity, isolation, mindfulness and over-identified. A total score indicating overall self-compassion is calculated from the six subscales. At present, no other validated measure of self-compassion exists. However, the SCS has been criticised as a measure of self-compassion as it was developed using a student sample and its psychometric properties have been commonly tested in college students. Therefore, further validation within other populations is required. Williams et al. (2014) and López et al. (2015) both conducted studies in attempt to address this gap in the literature. López et al. (2015) examined the psychometric properties of the SCS with a large community sample. They reported that they were unable to replicate the six-factor structure of the SCS, and concluded that the SCS total score should not be used to assess self-compassion (López et al., 2015). Similarly, Williams et al. (2014) concluded that the SCS is not a psychometrically robust measure of self-compassion following testing with an unspecified community sample of adults, a sample of adults who practice meditation, and a sample of adults who suffer from recurrent depressive disorder in remission. Costa et al. (2015) reported similar results to Williams et al. (2014) and López et al. (2015) when testing the six-factor SCS structure with samples of patients with borderline personality disorder, anxiety disorders, eating disorders, and a sample from the general population. They did however find support for a two-factor SCS model. Thus, they concluded that when used in this way, the SCS a reliable tool to use with clinical and nonclinical populations (Costa et al., 2015).

Neff (2015) has responded to these criticisms, highlighting reasons why the SCS can be considered a valid and reliable measure of self-compassion, using the six-factor model, or an
overall score, with further research in preparation. At present, there appears to be an ongoing debate regarding whether the SCS is a suitable measure to use, and should be considered when interpreting the results of this review.

4.3. Implications for clinical practice
The findings suggest that self-compassion may be an important target of therapeutic change, although a small number of studies included in this review indicated that symptom change and self-compassion did not occur concurrently. That the MBCT/MBSR and ACT studies found significant improvements in self-compassion is an interesting finding given that these interventions do not target self-compassion skills directly. Therefore, targeting self-compassion does not necessarily mean using CFT/CMT: other psychotherapeutic interventions may produce similar results, thus suggesting that the different interventions may share underlying commonalities that lead to improvements in self-compassion, thus suggesting it may be a trans-theoretical construct.

4.4. Future research
It is evident that further research into whether compassion-focused and mindfulness-based interventions increase self-compassion is required. The main weakness of research to date is the lack of well-designed RCTs comparing the intervention of interest with active treatment comparison and control groups. Future studies are required to compare the effectiveness of compassion-focused and mindfulness-based interventions with other established interventions, such as CBT. The use of control and comparison groups would help conclude whether observed changes can be attributed to the intervention, which the design of the majority of studies in this review did not allow. In addition, larger sample sizes need to be tested and longer follow-up periods are required.

Further research is also required to assess whether self-compassion is a mechanism of change in psychological interventions. The nature and design of the studies in this review did not allow this to be answered, although it is worth noting that the study by Kuyken et al. (2010) found self-compassion to be a mechanism of change in MBCT. Longitudinal and mediational studies are required to assess this further.

It may also be important to assess the patient population who will benefit most from targeting self-compassion. CFT/CMT was originally developed for those with chronic mental health difficulties and high levels of shame. The findings of the current review
suggest that self-compassion may be useful to target with anxiety and depressive disorders. However, further research designed to specifically answer this question is required.

4.5. Limitations of this review
Whilst every effort was made to identify all relevant research related to increasing self-compassion, it is a possibility with every review that some studies may be missed. Additionally, because studies were limited to being published in English and in peer reviewed journals, this means there is a chance some interesting research may have been excluded. As this review aimed to examine whether levels of self-compassion change following a psychotherapeutic intervention, studies were excluded if there was no standardised outcome measure of self-compassion. However, there are studies that have measured self-compassion in alternative ways (Braehler et al., 2013; Gilbert & Irons, 2004; Gilbert & Procter, 2006) and the inclusion of these may have added to the findings of this review. This may be particularly relevant given the ongoing debate of the use of the SCS.

This review used composite numerical scores to critically evaluate the methodology of the papers. It should be noted that some (e.g. Greenhalgh, 2014) argue that composite scores may be neither valid nor reliable, and this should be taken into consideration when interpreting the evaluation of the papers in this review. Related to this, because the inclusion criteria for this review was kept broad to capture as much of the research as possible, it does mean that there was wide variability in study design, intervention and population included. For example, including case study designs was understandably going to lead to lower quality ratings due to the nature of the study design. In addition, the variability among studies made synthesis of the results more challenging. However, given this is a relatively novel and developing area or research, it was felt appropriate to include all the relevant research in this area.

4.6. Conclusion
The aim of this review was to examine whether compassion-focused and mindfulness-based interventions improve self-compassion in adults experiencing clinical levels of mental health problems. Whilst the literature was characterised by methodological weaknesses, the current findings suggest that compassion-focused and mindfulness-based interventions are effective in improving self-compassion. Interestingly the support was strongest for mindfulness-based interventions but this may be accounted for by the higher quality ratings of these studies. More research is needed to extend the findings to enable more definitive conclusions to be
drawn. Specifically, well-designed comparison studies with larger sample sizes and longer follow-up periods are required. Nevertheless, self-compassion appears to be an important construct to consider when delivering psychotherapeutic interventions and it is hoped that the results of this review will support future research in this area.

**Acknowledgments**

The first author would like to thank research supervisors Dr Stella Chan and Professor Kevin Power for their comments, Ms Antonia Klases for her assistance in second rating the review studies, and Ms Rowena Stewart for her advice regarding the systematic searching of databases.

The authors declare that they have no conflicts of interest.

**References**


5. INTRODUCTION TO EMPIRICAL STUDY

The findings of the systematic review suggest that self-compassion can be enhanced by psychological therapies that are compassion and/or mindfulness-based. This would indicate that self-compassion may be a potential mechanism of therapeutic change, although as research in this area is in its infancy, further robust research is required before firm conclusions are drawn.

The aim of the current empirical study is to further explore the role of the role of self-compassion and its relationships with attachment and interpersonal problems in adults attending a primary care psychological therapies service presenting with mixed anxiety and depression. A brief overview of literature pertinent to this is provided below.

5.1. Overview of Attachment Theory
Attachment is an affectional bond to another person. Attachment theory proposes that the relationship experience an individual has with their primary caregiver in childhood will go on to affect how they view relationships in adulthood (Bowlby, 1969, 1973). According to Bowlby (1988), the early care giving experiences an individual experiences will be internalised, and working models about the self, others, emotions and expectations of social relationships are formed. These working models underlie the person’s attachment style. When a caregiver is consistent and responsive to meeting the needs of the infant, a positive internal working model of the self and others develops, and therefore a secure attachment style. On the other hand, if an infant experiences an inconsistent, unresponsive and/or unavailable caregiver, this can lead to a negative internal working model of the self and/or others developing, and thus an insecure or disorganised attachment style (Ainsworth et al., 1978; Bowlby, 1988).

Ainsworth et al. (1978) distinguished three different measurable patterns of attachment in infants: secure, insecure-avoidant and insecure-ambivalent. Although attachment theory originally focused on explaining the bond between infants and their caregivers, Bowlby (1988) asserted that the attachment system is active throughout the life span, and that adults continue to rely on attachment relationships in times of emotional distress. In addition, although Bowlby’s work strongly implicated early experiences with caregivers in the development of enduring attachment patterns, it was also recognised that later life experiences could lead to revisions of internal working models (Bowlby, 1969, 1988).
Adult attachment is generally conceptualised in terms of two orthogonal dimensions: attachment avoidance and attachment anxiety, and can be partially assessed through self-report measures (Fraley et al., 2000). It is proposed that an individual’s scores on these dimensions will indicate their sense of attachment security and how they deal with threat and distress (Mikulincer & Shaver, 2010). Low scores for attachment anxiety and avoidance can be taken as indicative of secure attachment, and therefore the use of effective emotion-regulation strategies (Fraley et al., 2000). Those who score high on either, or both, dimensions can be described as having an insecure attachment style, and will rely on secondary attachment strategies to cope with threats, through either deactivating or hyperactivating their attachment system (Cassidy & Kobak, 1988).

An individual scoring high for attachment anxiety is likely to have a negative model of the self, and will rely on hyperactivating strategies, over-emphasising the need for protection and intimacy (Mikulincer & Shaver, 2010). This may present as an overly demanding interpersonal style, seeking attention and support from attachment figures, with intensified expressions of distress and a fear of abandonment and rejection. On the other hand, those scoring high for attachment avoidance are likely to have a negative model of others and will rely on deactivating strategies, over-emphasising the need for autonomy and independence (Mikulincer & Shaver, 2010). This is associated with avoidance of being close to others, denying attachment needs, along with being excessively independent and self-reliant in relationships.

5.1.1. Attachment theory and mental health
Attachment theory provides a framework to help explain why some individuals may be more vulnerable to developing mental health problems such as depression and anxiety, and research indicates a strong link between insecure attachment types and psychological problems (Dozier et al., 2008; Mickelson et al., 1997; Shorey & Snyder, 2006). Mikulincer and Shaver (2010) reviewed a large number of studies, including cross-sectional and longitudinal designs involving clinical and nonclinical populations, and found that attachment insecurity was common across a wide range of mental health problems, including anxiety and depression. However, although an established link, it is important to note that not everyone with an insecure attachment style will go on to develop mental health problems. As such, insecure attachment should be seen as a risk factor for developing psychological problems, rather than a sole causal factor (Daniel, 2006).
This therefore leaves an interesting question as to what mechanisms mediate the relationship between attachment and mental health problems. The current study proposes two potential mechanisms: self-compassion and interpersonal problems.

5.1.2. Attachment theory and self-compassion

Bowlby (1988) proposed that individuals are likely to treat themselves and others in a similar way in which they were treated in childhood by their primary caregivers, although it is likely that other factors contribute to intra- and interpersonal functioning as well. However, from a theoretical perspective, it follows that self-compassion will be linked to attachment style. That is, if an individual is brought up in a nurturing environment where their needs are consistently and responsively met by their caregiver, they are likely to develop the ability to be self-compassionate (Neff & McGehee, 2010). On the other hand, if an individual is brought up in an inconsistent, threatening or stressful environment, they are more likely to be critical, rather than compassionate, towards themselves (Gilbert & Procter, 2006). In support of this, secure attachment has been found to predict higher levels of self-compassion (Neff & Beretvas, 2013; Neff & McGehee, 2010), whilst insecure attachment has been linked with lower levels of self-compassion (Raque-Bogdan et al., 2011).

However, it is worth noting that there are theoretical reasons to suggest there may be differences in the relationship between attachment anxiety and self-compassion, and attachment avoidance and self-compassion. In terms of attachment anxiety, if an individual develops a negative internal model of the self they are likely to be self-critical rather than kind towards themselves (Cantazaro & Wei, 2010); are likely to look to others for validation (Wei et al., 2005); and to feel overwhelmed by their own distress (Mikulincer & Shaver, 2010). Thus, it follows that developing a compassionate stance towards the self may be challenging for individuals with high attachment anxiety (Wei et al., 2011). By contrast, it has been suggested that those with attachment avoidance may have a positive model of the self, and therefore feel more worthy of being compassionate towards themselves than those with attachment anxiety (Wei et al., 2011). Alternatively, because those with high attachment avoidance are more likely to have a negative working model of others, they will be less dependent on others for validation due to their mistrust and fears of abandonment. As a result, they may be more self-reliant, setting themselves high standards to live up to, and thereby being less self-compassionate (Wei et al., 2011). Empirical research has not provided clarity to these theoretical perspectives: some studies have found that attachment
anxiety, but not attachment avoidance, is associated with self-compassion (Neff & McGehee, 2010; Wei et al., 2011), whilst others have found that both insecure attachment styles are associated with self-compassion (Raque-Bogdan et al., 2011), indicating the need for further research.

5.1.3. Attachment theory and interpersonal functioning

According to attachment theory, attachment styles will affect interpersonal behaviour, and influence the quality of social interactions and close relationships (Mikulincer & Shaver, 2010). Haggerty et al. (2009) explored the relationship between attachment styles and interpersonal problems in a clinical population. They found that high scores for attachment anxiety and avoidance were related to high levels of interpersonal problems. In addition, individuals with secure attachment styles report having larger social support networks and more positive social interactions than those with insecure attachment styles (Anders & Tucker, 2000). It is therefore not surprising that greater levels of interpersonal problems are associated with psychological difficulties, including various anxiety disorders and depression (Borkovec et al., 2002; Eng & Heimberg, 2006; McEvoy et al., 2013; Petty et al., 2004; Vittengl et al., 2003). In addition, Hankin et al. (2005) found that interpersonal stressors mediated the relationship between insecure attachment and increases in emotional distress. In their longitudinal study, those with an insecure attachment style experienced an increase in interpersonal stressors over time compared to those who had a secure attachment style, and the additional interpersonal stressors predicted increases in depressive and anxiety symptoms (Hankin et al., 2005). This finding provides some initial support that interpersonal problems serve as a mediator between attachment and mental health problems.

Interestingly, despite the link between self-compassion and attachment, and that self-compassion is viewed as an interdependent mode of being (Neff & Beretvas, 2013), it is worth noting that the interpersonal aspect of self-compassion has not been widely explored. Preliminary research indicates that self-compassion is associated with greater levels of social connectedness (Neff, 2003b), and is associated with healthy interpersonal functioning in romantic relationships (Neff & Beretvas, 2013). This suggests that, conversely, low levels of self-compassion may be associated with greater levels of interpersonal problems. However, it also indicates that further research exploring the relationship between these concepts is warranted.
The aim of the following study is therefore to examine the relationships between self-compassion, attachment and interpersonal problems in a clinical population.

It is hypothesised that:

i) anxious and/or avoidant attachment styles will be associated with lower levels of self-compassion and higher levels of interpersonal problems

ii) higher levels of interpersonal problems will be associated with lower levels of self-compassion

iii) self-compassion and interpersonal problems will mediate the relationship between attachment style and symptoms of anxiety and depression
The relationships between self-compassion, attachment and interpersonal problems in patients with mixed anxiety and depression

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This study has been written in accordance with Journal of Personality (Appendix F)
Abstract

Objective: Self-compassion has been consistently linked to psychological well-being. The ability to be self-compassionate may be shaped by early attachment experiences. Research suggests that self-compassion mediates the relationship between attachment and psychopathology but evidence has yet to be extended to clinical populations. The aim of this study therefore was to examine the role of self-compassion and its relationship with attachment and interpersonal problems in patients with anxiety and depression.

Method: A cross-sectional, quantitative design was utilised. Participants (N=74; 60% female, mean age 40 years) were recruited from a primary care psychological therapies service. Participants completed four self-report questionnaires assessing self-compassion, attachment, interpersonal problems and emotional distress.

Results: Attachment avoidance, low self-compassion and high interpersonal problems were all associated with higher levels of overall emotional distress and anxiety. Attachment anxiety was not significantly associated with emotional distress. Attachment avoidance predicted low self-compassion and high interpersonal problems. Self-compassion mediated the relationship between attachment avoidance and overall emotional distress and anxiety.

Conclusions: Low self-compassion may be one reason that attachment avoidance can lead to emotional distress. Results support the hypothesis that negative attachment experiences result in an under-developed soothing system and therefore an inability to be compassionate towards the self.

Keywords: Self-compassion, attachment, interpersonal problems, anxiety, depression
6. Introduction

In the UK, 1 in 4 adults experience mental health problems in any one year, with anxiety and depression being the most common mental health problems (Singleton et al., 2000). There has been a growing focus within psychological research on the mechanisms by which individuals may be protected from developing mental health problems.

One such mechanism that has become the focus of increasing research is self-compassion. Neff (2003a) conceptualised self-compassion as consisting of three components: self-kindness, common humanity and mindful acceptance. Self-kindness involves being emotionally warm and non-judgemental towards the self in times of difficulty; common humanity relates to recognising that life’s difficulties are part of human experience, and mindful acceptance refers to being able to acknowledge and observe painful thoughts and feelings, as opposed to over-identification with them (Neff, 2003). It therefore follows that the ability to be self-compassionate may be a protective factor for psychological wellbeing. Research supports this theoretical link, indicating that self-compassion is linked to greater life satisfaction, social connectedness, emotional intelligence, greater optimism, happiness, curiosity, and positive affect (Neff, 2003a; Neff et al., 2007). Those with higher levels of self-compassion have also been shown to be less neurotic and have lower negative affect (Neff et al., 2007). Higher levels of self-compassion have also been consistently linked with lower levels of depression and anxiety, with a recent meta-analysis indicating a large effect-size for the association between higher levels of self-compassion and lower levels of psychopathology (MacBeth & Gumley, 2012).

However, the majority of studies included in the meta-analysis were conducted with students or community clinical samples: of the 20 included samples, only one explored self-compassion in a clinical population. One recent study comparing self-compassion in depressed outpatients and never-depressed individuals found that depressed patients showed lower levels of self-compassion than the never-depressed group, and self-compassion was negatively related to depressive symptoms, rumination and avoidance (Krieger et al., 2013). Similarly, Werner et al. (2012) found that people with social anxiety reported less self-compassion than healthy controls. Van Dam et al. (2011) reported that level of self-compassion predicted symptom severity in a community sample seeking treatment for depressive and anxiety symptoms. Finally, Gilbert et al. (2014) found that depressed patients report fears of compassion from both the self and others.
Whilst there is a strong link between self-compassion and positive psychological wellbeing, less is known about the origins of self-compassion. Both Gilbert (2005) and Neff and McGehee (2010) have linked the development of self-compassion with early attachment experiences. Gilbert (2005, 2009) proposed that self-compassion is the ability to soothe the self with kindness and non-judgemental understanding when presented with threat or negative affect. His proposed model of compassion is theoretically linked to three interacting emotion regulation systems: threat, soothing and incentive seeking (Depue & Morrone-Strupinsky, 2005). The threat system detects threat and is closely linked to negative emotions such as anxiety, anger and disgust. The incentive-seeking system serves to motivate, excite and drive. Finally, the soothing system serves to manage distress and promote bonding. The three affective systems are believed to balance each other, therefore allowing for the regulation and management of emotions (Gilbert, 2010).

Gilbert (2010) hypothesised that negative attachment experiences may result in an over-developed threat system and an under-activated soothing system, therefore potentially leaving the child struggling to feel safe on their own and/or with others, leading to reduced ability to be compassionate. Similarly, Gillath et al. (2005) also suggested that the ability to self-soothe develops through being comforted by attachment figures in early life. Therefore, if this comfort is missing or inconsistent, the ability to self-soothe may not fully develop.

Consistent with the theory that compassion is rooted in early attachment experiences, Neff and McGehee (2010) found that greater maternal support and family functioning was associated with higher levels of self-compassion. Similarly, Pepping et al. (2014) found that low self-compassion was predicted by high parental rejection and overprotection, and low parental warmth. Tanaka et al. (2011) found that higher levels of childhood emotional abuse, physical abuse and emotional neglect were associated with lower levels of self-compassion in adolescents. Finally, Vettese et al. (2011) found a significant link between childhood maltreatment and self-compassion in a group of young adults receiving treatment for substance misuse. These suggest that early experiences influence the development of self-compassion.

Consistent with the above, self-compassion has been linked to attachment style. Specifically, adolescents with a secure attachment style reported greater self-compassion, whilst those with preoccupied or fearful attachment styles demonstrated lower levels of self-compassion.
Attachment anxiety has also been found to predict low self-compassion in university students (Pepping et al., 2014). Low self-compassion was found to be significantly correlated with anxious and avoidant attachment (Raque-Bogdan et al., 2011). Notably, self-compassion has been found to mediate the relationship between attachment anxiety and well-being (Neff & McGehee, 2010; Wei et al., 2011) and mediates the relationship between anxious and avoidant attachment and mental health outcomes (Raque-Bogdan et al., 2011). Finally, Gilbert et al. (2014) found that insecure attachment is associated with a fear of compassion from others. These findings further suggest that enhancing self-compassion can potentially be an important therapeutic target.

However, apart from Gilbert et al. (2014), all of the above studies have all involved non-clinical populations. Therefore, to be clinically useful, it is important to examine whether the link between attachment and self-compassion, along with the mediating role of self-compassion between attachment and psychopathology, can be replicated in a clinical sample.

In Neff’s (2003) conceptualisation of self-compassion, one of the three core components is the interpersonal component of common humanity. Although research has shown that self-compassion is related to greater levels of social connectedness (Neff, 2003a), and appears to be linked to attachment experiences (Neff & McGehee, 2010; Raque-Bogdan et al., 2011), the interpersonal aspect of self-compassion has not been widely explored. Neff and Beretvas (2013) suggested that being self-compassionate is associated with positive romantic relationships. Additionally, Yarnell and Neff (2013) found that when resolving romantic relationship conflicts, those with higher levels of self-compassion were more likely to compromise and balance the need of self and other, and less likely to experience emotional turmoil. Therefore, self-compassionate people may engage in more adaptive social interactions and relationships and have more adaptive reactions to difficult interpersonal situations, which may serve as protective factors for developing psychopathology. Furthermore, as interpersonal problems have been demonstrated to be linked to both insecure attachment and psychopathology (Mikulincer & Shaver, 2005), and to mediate the relationship between insecure attachment and emotional distress (Hankin et al., 2005), it is important to explore the relationship between these variables further, especially in clinical populations.

Taken together, there is a growing body of literature indicating the link between self-compassion and psychological well-being, thereby supporting the development of therapies...
that enhance self-compassion. It has been proposed that the ability to be compassionate towards the self may be shaped by early attachment experiences, and there is some initial evidence that self-compassion mediates the relationship between attachment and psychopathology. However, to date there has been no research exploring the relationships of these constructs in a clinical population. Additionally, interpersonal functioning is linked to both attachment and psychopathology, and in theory will be related to self-compassion. Therefore, the main aim of this study is to explore the relationships between attachment, self-compassion, interpersonal problems and mental health in a clinical population with specific hypotheses as follows:

Firstly, anxious and/or avoidant attachment styles will be associated with lower levels of self-compassion and higher levels of interpersonal problems.

Secondly, higher levels of interpersonal problems will be associated with lower levels of self-compassion.

Thirdly, self-compassion and interpersonal problems will mediate the relationship between attachment style and symptoms of anxiety and depression.

7. Methodology

7.1. Design

The study employed a cross-sectional design. Four questionnaires were used to measure attachment, self-compassion, emotional distress and interpersonal problems. Demographic information was also gathered using a brief demographic questionnaire.

7.2. Participants

To be included in the study, participants were adults aged 18 upwards, presenting with mixed anxiety and depressive disorders to a primary care psychological therapies service in NHS Tayside. They were required to self-certify to have a command of English to the extent required to complete the questionnaires, and had to be able to give informed consent. Participants were excluded if they had a diagnosis of an intellectual disability, an Axis II disorder, Psychosis or current substance misuse.
134 individuals (age range 18 – 64 years) consented to take part in the study. Of these, 74 participated in the study by returning completed questionnaire packs, indicating a 55% response rate. Demographics of the sample are presented in Table 1. The Scottish Index of Multiple Deprivation (SIMD) was unable to be calculated due to not having participants’ full postcodes.

Table 1: Demographic characteristics of sample

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>N = 74</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years</td>
<td></td>
</tr>
<tr>
<td>mean (SD)</td>
<td>40.3 (12.0)</td>
</tr>
<tr>
<td>range</td>
<td>18 – 64</td>
</tr>
<tr>
<td>missing</td>
<td>2</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>44 (59.5%)</td>
</tr>
<tr>
<td>Male</td>
<td>26 (35.1%)</td>
</tr>
<tr>
<td>Missing</td>
<td>4 (5.4%)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White British</td>
<td>69 (93.2%)</td>
</tr>
<tr>
<td>White Other</td>
<td>3 (4.1%)</td>
</tr>
<tr>
<td>Asian British</td>
<td>1 (1.4%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (1.4%)</td>
</tr>
<tr>
<td>Relationship status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>24 (32.5%)</td>
</tr>
<tr>
<td>In a relationship</td>
<td>21 (28.4%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>4 (5.4%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>4 (5.4%)</td>
</tr>
<tr>
<td>Separated</td>
<td>2 (2.7%)</td>
</tr>
<tr>
<td>Single</td>
<td>17 (23%)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (1.4%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (1.4%)</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>48 (64.9%)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>9 (12.2%)</td>
</tr>
<tr>
<td>Student</td>
<td>9 (12.2%)</td>
</tr>
<tr>
<td>Retired</td>
<td>1 (1.4%)</td>
</tr>
<tr>
<td>Unable to work</td>
<td>6 (8.1%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (1.4%)</td>
</tr>
</tbody>
</table>

7.3. Procedure

Patients attending the Psychological Therapies Service who met the inclusion criteria were initially given the participant information sheet (see Appendix G) by their clinician. They were asked to read the information sheet at home, which explained the purpose of the study
and what participation would involve. At their next appointment, if they expressed interest in participating in the study, they were asked to read and complete the consent form (see Appendix H) with their clinician. The participant was then provided with the study pack containing the questionnaires to take home and complete. They were asked to return the questionnaires to the researcher either via post or by handing the pack back to their clinician in the sealed envelope.

7.4. Measures
7.4.1. Demographic information
A short questionnaire was developed to collect demographic information (see Appendix I). Participants were asked to specify their gender, age, ethnicity, marital status and employment status. They were also asked to provide part of their postcode to allow identification of the associated deprivation index category by means of the SIMD (The Scottish Government, 2012). The SIMD rates small areas of Scotland over seven domains, to derive an overall deprivation score between 1 and 10, where 1 indicates the highest level of deprivation and 10 indicates the lowest level of deprivation.

7.4.2. The Self-Compassion Scale (SCS; Neff, 2003a)
The SCS (see Appendix J) measures levels of self-compassion. It is a self-report measure with 26 items across six subscales: Self-Kindness, Self-Judgement, Common Humanity, Isolation, Mindfulness, and Over-Identification. The items are rated on a 5-point Likert scale, ranging from 1 (almost never) to 5 (almost always). A higher overall total score indicates a higher level of self-compassion. A score for each subscale can also be used. Neff (2003a) reported high internal consistency for the total measure (.92), strong validity, and good test-retest reliability for the six subscales (.80 to.93). Studies using the SCS in clinical samples have reported good internal consistency, with Cronbach’s alpha for the full scale reported at .91 by Krieger et al. (2013) and .96 by Werner et al. (2012), who only used the total score in their study. In the current study, Cronbach’s alpha for the full scale was .71. This is lower than has been reported in previous studies.

7.4.3. Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983)
The HADS (see Appendix K) is a commonly used self-rating scale for measuring anxiety and depression in clinical practice and research. It consists of 14 items split equally into two subscales: anxiety and depression. Each item has four potential responses which are scored from 0 to 3. The total scoring range for each subscale is therefore 0 – 21. A total score,
indicating overall emotional distress, can also be calculated by summing all the items (Crawford et al., 2001). Interpretation of the scores for both subscales are based on the following cut-offs: 8 – 10 mild symptoms, 11 – 15 moderate symptoms, 16 or above, severe symptoms (Snith & Zigmond, 1994). Bjelland et al. (2002) conducted a literature review of 747 studies and concluded that the HADS demonstrated good concurrent validity, internal reliability and discriminant validity. Although the majority of studies involved patients from non-psychiatric clinics, the review reported that similar findings were demonstrated in both psychiatric and non-clinical populations. In line with previous findings, in the current study Cronbach’s alpha for the full scale was .87, for the anxiety scale .78 was and for the depression scale was .82.

7.4.4. Inventory of Interpersonal Problems 32 (IIP-32; Barkham et al., 1996)
The IIP-32 (see Appendix L) is a 32-item self-report measure assessing difficulties in interpersonal relationships. Items are split to reflect interpersonal skills that people may find “too hard” (e.g. joining in on groups) or responses that they do “too much” (e.g. get irritated). Items are scored on a 5-point scale ranging from 0 (not at all) to 4 (extremely). The IIP-32 has eight subscales, and a total score can be calculated by summing the scores from the subscales. This study used the total score as an indicator of severity of interpersonal problems. Barkham et al. (1996) reported the IIP-32 to have good test-re-test reliability, and adequate internal consistency across the subscales. In a clinical sample of participants, McEvoy et al. (2014) reported Cronbach’s alpha at .88 for the total score. Similarly, in the current study, Cronbach’s alpha for the full scale was .82.

7.4.5. The Experiences in Close Relationships-Revised (ECR-R; Fraley et al., 2000)
The ECR-R (see Appendix M) is a self-report measure with 36 items measuring adult romantic attachment across two subscales: anxiety (fear of abandon and rejection) and avoidance (fear of closeness and discomfort with dependence on others). Participants rate on a 7-point Likert scale (1 – disagree strongly, 7 – agree strongly) how accurately each item describes their experience of close relationships. Sibley et al. (2005) provided support for its short-term temporal stability, two-factor structure, and convergent and discriminant validity. Good internal consistency was reported by Raque-Bogdan et al. (2011), with Cronbach’s alpha at .92 and .94 for the avoidance and anxiety subscales respectively. In the current study, Cronbach’s alpha for the avoidance subscale scale was .78 and for the anxiety subscale was .91.
7.5. Ethical Approval
Ethical approval was granted by the East of Scotland Research Ethics Committee (see Appendix N) and Tayside Medical Science Centre Research and Development Office.

7.6. Power Analyses
Power analysis was conducted a priori to estimate the necessary sample size. A review of previous literature suggested small to medium effect sizes between attachment and self-compassion (Raque-Bogdan et al., 2011; Wei et al., 2011), with one large effect size found between attachment anxiety and self-compassion (Raque-Bogdan et al., 2011). Given the variability of effect sizes, the current study assumed a medium effect size.

Calculations outlined by Cohen (1988) suggest that in order to have .8 power to detect a medium effect size when carrying out correlation/multiple regression analysis with three independent variables, a sample size of 76 would be required. A calculation was also carried out using Green’s (1991) formula (N ≥ 50+8m) for determining the sample size required to conduct multiple regression analysis. In this calculation, m equals the number of independent variables. Based on this equation, a sample size of 74 would be required to achieve sufficient power. For mediation analysis using a bootstrapping approach, Fritz and Mackinnon (2007) recommended that in order to achieve a power of .8 to detect a medium effect size of the indirect effect, a sample size of 71 would be required. Based on these calculations, the current study aimed to recruit 71-76 participants.

7.7. Statistical Analyses
All statistical analysis was conducted in IBM SPSS Statistics Version 21. Mediation analysis was conducted using the computational and modelling tool PROCESS v.2.15 developed by Hayes (2013). The main hypotheses were explored using correlation and mediation analysis. Pearson correlations were used initially to explore the associations between attachment, self-compassion, interpersonal problems, and emotional distress. Multiple mediation analysis was then carried out to explore self-compassion and interpersonal problems as possible mediators in the relationship between adult attachment style and emotional distress. Mediation analysis was conducted using the bootstrapping re-sampling method using 5000 bootstrap resamples (Preacher & Hayes, 2008). Bootstrapping is a nonparametric method that estimates the indirect effect and its 95% confidence intervals. When the bias corrected confidence intervals (BC CI) do not contain zero, it is assumed that the indirect effect is significantly different from zero at p < 0.05. In other words, if the upper and lower boundaries of the BC
CI do not cross zero, it can be assumed that the effect of the independent variable on the dependent variable is mediated by the proposed mediating variables. Preacher and Hayes (2008) state that it is possible to have a non-significant indirect effect, but significant individual mediators.

7.7.1. Data screening
Firstly, data was screened to ensure assumptions for further analysis were met. Box plots were examined for any outliers that could bias the data set. To establish whether data was normally distributed, values of skewness and kurtosis were converted to z-scores. (Field, 2013). This data is presented in Appendix O. It is suggested that z greater than +/-2.58 indicates significant skewness or kurtosis (p<.01). All z-scores were non-significant indicating that the data could be assumed to be normally distributed.

Linearity and homoscedasticity were investigated by plotting the standardised residuals against the standardised predicted values (Field, 2013). The scatterplots showed no obvious pattern, indicating that the assumptions linearity and homogeneity of variance were met.

Finally, data was assessed for multicollinearity. High correlations between independent variables (.80 or greater) may indicate collinearity between variables, which would suggest they may not be appropriate to include in mediational analysis. Pearson correlations were all less than .80 suggesting no evidence of collinearity. The variance inflation factor (VIF) and tolerance statistics (see Appendix O) were also used to assess for collinearity in the data. All the VIF values were well below 10 and the tolerance statistics all above 0.2, with the average VIF 1.261.

7.7.2. Missing data
Following Fox-Wasylyshyn and El-Masri (2005), if more than 10% of items were missing on any questionnaire, it was excluded from further analysis. This resulted in four participant’s ECR-R data and two participant’s IIP-32 data being excluded from the analysis involving these variables.

Sixteen questionnaires had ≤ 10% missing data (three SCS, two HADS, three ECR-R and eight IIP-32). Various methods for imputing missing data have been described in the literature (e.g. Fox-Wasylyshyn & El-Masri, 2005; Roth et al., 1999; Shrive et al., 2006).
The person mean substitution method was used in the current study: the individual’s mean for the relevant scale/subscale was used to replace the missing values.

8. Results

8.1. Descriptive statistics

Descriptive statistics are presented in Table 2. Mean scores for HADS anxiety and depression indicated moderate levels of anxiety and mild levels of depression within the sample. Paired samples t-test indicated that participants reported significantly higher anxiety symptoms compared to depressive symptoms ($t(73) = 10.61; p<.001$). Independent samples t-tests indicated there were no gender differences on the SCS, ECR-R or IIP-32.

Table 2: Descriptive statistics for all variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HADS – anxiety</td>
<td>74</td>
<td>13.07</td>
<td>3.92</td>
</tr>
<tr>
<td>HADS – depression</td>
<td>74</td>
<td>8.14</td>
<td>4.03</td>
</tr>
<tr>
<td>HADS – total</td>
<td>74</td>
<td>21.2</td>
<td>6.86</td>
</tr>
<tr>
<td>SCS – total score</td>
<td>73</td>
<td>2.21</td>
<td>.46</td>
</tr>
<tr>
<td>ECR-R – anxiety</td>
<td>70</td>
<td>4.04</td>
<td>1.39</td>
</tr>
<tr>
<td>ECR-R – avoidance</td>
<td>70</td>
<td>3.60</td>
<td>1.18</td>
</tr>
<tr>
<td>IIP-32 – total score</td>
<td>72</td>
<td>58.89</td>
<td>15.33</td>
</tr>
</tbody>
</table>

8.2. Covariate analysis

Analyses was conducted to assess whether any demographic variables related to the dependent variables (DVs), and hence should be included as covariates in the mediation analysis. Pearson correlations indicated that age was significantly correlated with HADS total ($r = .272 p=.021$) and HADS depression ($r = .385 p=.001$), but not HADS anxiety ($r = .085, \text{ns}$). Independent samples t-tests indicated there were no gender differences on the HADS. One-way ANOVAs indicated that there were no significant differences in scores on the HADS based on relationship status or employment status. Therefore, age was the only demographic variable to be controlled for in the mediation analyses involving HADS total and HADS depression as the DVs.

8.3. Bivariate correlations

Pearson’s correlations were conducted to explore the relationships between attachment, self-compassion and interpersonal problems. Results are summarised in Table 3. As hypothesised, attachment avoidance and attachment anxiety were negatively correlated with
self-compassion, both with small to medium effect sizes. Attachment avoidance and attachment anxiety were also positively correlated with interpersonal problems, with a medium to large and medium effect size respectively. There was no significant relationship between interpersonal problems and self-compassion.

Table 3: Bivariate correlations between attachment style, interpersonal problems, self-compassion and emotional distress (associated p values)

<table>
<thead>
<tr>
<th></th>
<th>ECR-R (avoidance)</th>
<th>ECR-R (anxiety)</th>
<th>SCS</th>
<th>IIP-32</th>
<th>HADS - total</th>
<th>HADS - anxiety</th>
<th>HADS - depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECR-R (avoidance)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECR-R (anxiety)</td>
<td>.363** (.002)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCS</td>
<td>-.255* (.033)</td>
<td>-.247* (.040)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIP-32</td>
<td>.363** (.002)</td>
<td>.444** (.000)</td>
<td>-.192</td>
<td>-.192</td>
<td>-.192</td>
<td>-.192</td>
<td>-.192</td>
</tr>
<tr>
<td>HADS - total</td>
<td>.314** (.008)</td>
<td>.208 (.083)</td>
<td>-.277*</td>
<td>-.277</td>
<td>-.277**</td>
<td>-.277*</td>
<td>-.277*</td>
</tr>
<tr>
<td>HADS - anxiety</td>
<td>.321* (.007)</td>
<td>.192 (.112)</td>
<td>-.347**</td>
<td>-.347</td>
<td>-.347**</td>
<td>-.347**</td>
<td>-.347**</td>
</tr>
<tr>
<td>HADS - depression</td>
<td>.215 (.073)</td>
<td>.164 (.175)</td>
<td>-.130</td>
<td>-.130</td>
<td>-.130</td>
<td>-.130</td>
<td>-.130</td>
</tr>
</tbody>
</table>

* p < 0.05; ** p < 0.01

8.4. Correlations between predictor variables and dependent variables

In order to be included in mediation or regression analysis, predictor variables should show a strong correlation with the DVs. In the current study, the possible predictor variables were anxious attachment, avoidant attachment, self-compassion and interpersonal problems. The DVs were overall emotional distress, anxiety symptoms and depressive symptoms. The correlations between these variables are presented in Table 3.

8.4.1. Attachment and emotional distress

Avoidant attachment had a significant positive correlation with overall emotional distress and anxiety symptoms, both of medium effect size. There was a non-significant relationship between avoidant attachment and depressive symptoms. There was a non-significant relationship between anxious attachment and overall emotional distress, anxiety symptoms, and depressive symptoms.
8.4.2. Interpersonal problems, self-compassion and emotional distress
Interpersonal problems had a significant positive correlation with overall emotional distress, anxiety symptoms, and depressive symptoms, all of medium effect size. Self-compassion had a significant negative correlation with overall emotional distress and anxiety, with small to medium and medium effect sizes respectively. There was no significant relationship between self-compassion and depressive symptoms.

8.5. Mediation analysis
It was hypothesised that self-compassion and interpersonal problems would mediate the relationship between insecure attachment and emotional distress. This model is presented in Figure 1. Multiple mediation analyses were conducted with avoidant attachment (ECR-R avoidance) entered as the independent variable (IV), and interpersonal problems (IIP-32) and self-compassion (SCS) as the mediators. Attachment anxiety (ECR-R anxiety) was not included in the mediation analysis due to a lack of relationship between this variable and the DV. As there is an overlap between anxiety and depressive symptoms, and in this study a significant correlation between the two subscales of the HADS, the total HADS score was used as a measure of overall emotional distress. Therefore the main mediation analysis included emotional distress (HADS total) as the DV. Age was entered as a covariate.

However, to examine whether direct and indirect effects differed when treating anxiety and depression as separate constructs, a further four mediation analyses were conducted, firstly with HADS anxiety the DV. This model was then repeated with depression included as a covariate of anxiety. Although there was only a significant correlation between one of the predictor variables (interpersonal problems) and HADS depression, to allow comparisons with the anxiety model, the same mediation was conducted with HADS depression the DV.

8.5.1. Mediation analysis: avoidant attachment, interpersonal problems, self-compassion and overall emotional distress
Results of the regression analysis are presented in Table 4. Both mediators were predicted by the IV: attachment avoidance significantly predicted self-compassion ($F(1, 65) = 4.53$, $p=0.04$), and interpersonal problems ($F(1, 65) = 11.63$, $p<0.001$). Attachment avoidance explained 7% of the variance in self-compassion and 15% of the variance in interpersonal problems.
Table 4: Results of regression analysis predicting self-compassion, interpersonal problems and emotional distress, controlling for age

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Outcome variable</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECR-R (avoidance)</td>
<td>SCS</td>
<td>-0.10</td>
<td>0.05</td>
<td>-2.13</td>
<td>0.04*</td>
</tr>
<tr>
<td>ECR-R (avoidance)</td>
<td>IIP-32</td>
<td>5.16</td>
<td>1.51</td>
<td>3.41</td>
<td>0.00**</td>
</tr>
<tr>
<td>Dependent variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HADS total</td>
<td></td>
<td>1.70</td>
<td>0.67</td>
<td>2.52</td>
<td>0.01*</td>
</tr>
<tr>
<td>ECR-R (avoidance)</td>
<td>SCS</td>
<td>-3.19</td>
<td>1.56</td>
<td>-2.05</td>
<td>0.04*</td>
</tr>
<tr>
<td>IIP-32</td>
<td></td>
<td>0.06</td>
<td>0.05</td>
<td>1.26</td>
<td>0.21</td>
</tr>
</tbody>
</table>

* p < 0.05;  ** p < 0.01

When the mediators were not included in the model, attachment avoidance significantly predicted emotional distress (b = 2.36, t = 3.81, p < 0.001) and accounted for 27% of the variance in emotional distress. When the three predictor variables were included in the model they accounted for 34% of the variance in overall emotional distress. This model was significant (F(4, 62) = 7.80, p < 0.001). Of the individual predictors, self-compassion and avoidant attachment were significant when compared with the other predictors (t = -2.05, p = 0.04 and t = 2.52, p = 0.01 respectively).

Table 5: Bootstrapped indirect effects of potential mediators: emotional distress

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Point estimate</th>
<th>SE</th>
<th>Bootstrapping 95% BC CIs</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-compassion</td>
<td>0.3217</td>
<td>0.2090</td>
<td><strong>0.0219</strong></td>
<td><strong>0.8802</strong></td>
<td></td>
</tr>
<tr>
<td>Interpersonal problems</td>
<td>0.3265</td>
<td>0.3309</td>
<td>-0.2146</td>
<td>1.1196</td>
<td></td>
</tr>
<tr>
<td>Total indirect effect</td>
<td>0.6482</td>
<td>0.4117</td>
<td>-0.0209</td>
<td>1.6395</td>
<td></td>
</tr>
</tbody>
</table>

The total indirect effect of avoidant attachment on emotional distress through the two mediators had a coefficient of 0.65, with 95% BC CIs of -0.0209 to 1.6395 (Table 5). As the BC CIs cross zero, the total indirect effect is not significant. Table 5 also shows the individual contributions of the two mediators. As the 95% BC CIs for self-compassion did not cross zero, although there was no total indirect effect, there was a significant indirect effect of avoidant attachment on emotional distress through self-compassion. Thus there was partial support for the hypothesis that self-compassion and interpersonal problems would
mediate the relationship between insecure attachment and emotional distress. This model is presented diagrammatically in Figure 1.

Figure 1: Mediation model – emotional distress as dependent variable

8.5.2. Mediation analysis: avoidant attachment, interpersonal problems, self-compassion and anxiety

Table 6 indicates attachment avoidance significantly predicted both interpersonal problems ($F(1, 67) = 10.18, p<0.001$) and self-compassion ($F(1, 67) = 4.82, p=0.03$). Attachment avoidance explained 6% of the variance in self-compassion and 13% of the variance in interpersonal problems.
Table 6: Results of regression analysis predicting self-compassion, interpersonal problems and anxiety

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Outcome variable</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECR-R (avoidance)</td>
<td>SCS</td>
<td>-0.10</td>
<td>0.05</td>
<td>-2.20</td>
<td>0.03*</td>
</tr>
<tr>
<td>ECR-R (avoidance)</td>
<td>IIP-32</td>
<td>4.79</td>
<td>1.50</td>
<td>3.19</td>
<td>0.00**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th></th>
<th>HADS anxiety</th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>ECR-R (avoidance)</td>
<td></td>
<td>0.65</td>
<td>0.38</td>
<td>1.71</td>
<td>0.09</td>
</tr>
<tr>
<td>SCS</td>
<td></td>
<td>-2.06</td>
<td>0.93</td>
<td>-2.21</td>
<td>0.03*</td>
</tr>
<tr>
<td>IIP-32</td>
<td></td>
<td>0.05</td>
<td>0.03</td>
<td>1.75</td>
<td>0.09</td>
</tr>
</tbody>
</table>

| Controlling for depression | | HADS anxiety | | | |
| ECR-R (avoidance)  | | 0.52        | 0.36| 1.47 | 0.15 |
| SCS                | | -1.92       | 0.86| -2.24| 0.03*|
| IIP-32             | | 0.03        | 0.03| 0.98 | 0.33 |

* p < 0.05; ** p < 0.01

When the mediators were not included in the model, attachment avoidance significantly predicted anxiety \((b = 1.10, t = 3.00, p < .001)\). Without self-compassion and interpersonal problems in the model, attachment avoidance accounted for 11% of the variance in anxiety. When all three predictors were included in the model, they accounted for 22% of the variance in anxiety. This model was significant \((F(3, 65) = 6.23, p = .001)\). Of the individual predictors, self-compassion was significant when compared with the other predictors \((t = -2.21, p = .03)\). As can be seen in Table 6, controlling for depression did not produce notable changes to this result.
Table 7: Bootstrapped indirect effects of mediators: anxiety

<table>
<thead>
<tr>
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<th>Point estimate</th>
<th>SE</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-compassion</td>
<td>0.2081</td>
<td>0.1160</td>
<td>0.0301</td>
<td>0.4967</td>
</tr>
<tr>
<td>Interpersonal problems</td>
<td>0.2382</td>
<td>0.1401</td>
<td>0.0019</td>
<td>0.5763</td>
</tr>
<tr>
<td>Total indirect effect</td>
<td>0.4463</td>
<td>0.1831</td>
<td>0.1400</td>
<td>0.8780</td>
</tr>
</tbody>
</table>

Controlling for depression

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Point estimate</th>
<th>SE</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-compassion</td>
<td>0.2081</td>
<td>0.1160</td>
<td>0.0369</td>
<td>0.4435</td>
</tr>
<tr>
<td>Interpersonal problems</td>
<td>0.2382</td>
<td>0.1401</td>
<td>-0.0916</td>
<td>0.3910</td>
</tr>
<tr>
<td>Total indirect effect</td>
<td>0.4463</td>
<td>0.1831</td>
<td>0.0614</td>
<td>0.7008</td>
</tr>
</tbody>
</table>

The total indirect effect of avoidant attachment on anxiety through the two mediators had a coefficient of 0.4463, with 95% BC CIs of 0.1400 to 0.8780 (presented in Table 7). As these BC CIs do not cross zero, the total indirect effect is significant. Table 7 also shows the individual contributions of the two mediators. As the 95% BC CIs for both mediators did not cross zero, a significant indirect effect of avoidant attachment on anxiety through self-compassion and interpersonal problems was found. This is presented diagrammatically in Figure 2. However, when depression was controlled for, interpersonal problems was no longer a significant mediator (Table 7).

Figure 2: Mediation model – anxiety as dependent variable
When all of the above mediations were repeated as single mediation models, with self-compassion and interpersonal problems entered separately, the results did not notably change. This supports the findings that attachment avoidance is linked to emotional distress indirectly through low self-compassion, but not interpersonal problems.

8.5.3. Mediation analysis: avoidant attachment, interpersonal problems, self-compassion and depression

Results of the regression analysis when depression was included as the DV indicated that the overall model was not significant ($F(3, 65) = 2.59, p = .06, \text{ns}$). Mediation analysis indicated that there was no significant overall indirect effect ($b = 0.35, 95\% \text{ BC CIs} [\text{-0.07, 0.95}]$). These results are presented in Appendix O.

9. Discussion

Although a strong link has been demonstrated between low self-compassion and psychopathology, the majority of research to date has been conducted in nonclinical samples. In addition, there has been no research investigating if self-compassion mediates the relationship between attachment and psychopathology in a clinical population. Therefore the main aim of this study was to address these gaps in the literature by recruiting from a clinical population.

Results of this study support the hypothesis that attachment insecurity, low self-compassion and greater interpersonal problems are associated with greater levels of emotional distress in patients with mixed anxiety and depression. More specifically, higher attachment avoidance predicted higher levels of anxiety and overall emotional distress; lower levels of self-compassion predicted higher levels of anxiety and overall emotional distress; and finally, greater levels of interpersonal problems were associated with, but did not significantly predict, higher anxiety, depression and overall emotional distress. Results also indicated that the mean scores for insecure attachment, interpersonal problems and self-compassion were in line with those of previous studies conducted in clinical populations experiencing anxiety and depression (Krieger et al., 2013; McEvoy et al., 2013; Ravitz et al., 2008).

The results also supported the hypothesis that greater levels of attachment insecurity would be associated with lower levels of self-compassion and greater levels of interpersonal problems: both attachment avoidance and attachment anxiety had a negative correlation with
self-compassion and a positive correlation with interpersonal problems. In addition, attachment avoidance significantly predicted lower levels of self-compassion and higher levels of interpersonal problems. This is in line with previous research (e.g. Haggerty et al., 2009; Raque-Bogdan et al., 2011). This study adds to the current literature by demonstrating these findings in a clinical population.

The main mediation model tested the relationships between attachment avoidance, interpersonal problems, self-compassion and overall emotional distress. As noted previously, Preacher and Hayes (2008) state that it is possible to have significant indirect effects, even when there is no overall indirect effect, and that this is common in multiple mediator models. In the current model, whilst there was no significant overall indirect effect observed, there was an indirect pathway of attachment avoidance on emotional distress through self-compassion. This supports and extends previous findings from nonclinical populations (Raque-Bogdan et al., 2011), and suggests that one reason individuals with higher levels of attachment avoidance experience emotional distress is through being unable to be compassionate towards the self. The hypothesis that interpersonal problems would also mediate the relationship between attachment and emotional distress was not supported.

The subsequent mediation analysis exploring anxiety and depression as separate constructs provided additional support for the hypothesis that self-compassion mediates the relationship between insecure attachment and emotional distress. Both self-compassion and interpersonal problems were found to mediate the relationship between attachment avoidance and anxiety, and the total indirect effect was also significant. This remained the case when depression was controlled for, although only the pathway through self-compassion remained significant in this analysis. This is perhaps not surprising given self-compassion correlated with anxiety, but not depression, whilst interpersonal problems correlated with both constructs, suggesting that in this sample interpersonal problems had a stronger relationship with depression than self-compassion did. No significant findings were present when the mediation model with depression was tested, which was not unexpected given the lack of relationship between attachment avoidance and depression in this sample.

The findings of this study suggest that, in line with Raque-Bogdan et al. (2011), low self-compassion can be a pathway to overall emotional distress and anxiety for individuals with attachment avoidance. These results support the proposed theory that the development of self-compassion is rooted in early attachment experiences, with negative attachment
experiences resulting in an under-developed soothing system and therefore an inability to be compassionate towards the self (Gilbert, 2010). Given the recent findings that those with insecure attachment fear compassion from others (Gilbert et al., 2014), taken collectively, this suggests that attachment experiences play a central role in the ability to be self-compassionate, along with the ability to receive compassion from others.

It has been proposed that the relationship between attachment anxiety and self-compassion may be more straightforward than the relationship between attachment avoidance and self-compassion, due to those with attachment anxiety having a negative internal working model, whilst those with attachment avoidance potentially having a positive internal working model (Wei et al., 2011). Previous studies have consistently reported an association between higher levels of attachment anxiety and lower levels of self-compassion, whilst the relationship between attachment avoidance and self-compassion has produced mixed findings (Neff & McGehee, 2010; Raque-Bogdan et al., 2011; Wei et al., 2011). In the current study, there did not appear to be any difference in the strength of the relationship between both styles of insecure attachment and self-compassion. Thus, this suggests that even though individuals with attachment avoidance may have a positive self-image, they may still struggle to self-soothe as a result of a lack of comfort from early attachment figures (Gilbert, 2005; Gillath et al., 2005).

The results of this study also indicated unexpected findings, not in line with previous literature. Firstly, although in the predicted direction, attachment anxiety was not significantly associated with overall emotional distress, anxiety or depression. Previous research has indicated that there is generally a strong association demonstrated between anxious attachment and depression and anxiety (Mikulincer & Shaver, 2010). In addition, self-compassion has been shown to be a significant mediator between attachment anxiety and mental health (Raque-Bogdan et al., 2011). However, due to the non-significant findings in this study, attachment anxiety was not included in the mediation analysis, thus limiting the comparisons that can be made with previous studies. In addition, neither avoidant attachment nor self-compassion were found to be significantly associated with depression, although they correlated in the predicted direction. Again, these relationships have been demonstrated consistently in previous research (MacBeth & Gumley, 2012; Mikulincer & Shaver, 2010).

It is worth noting that the mean depression score was relatively low in this sample, just within the mild range, and was significantly lower than the mean anxiety score. Thus it could
be that the current sample was skewed towards including a greater number of participants with anxiety, and therefore underpowered for detecting a significant correlation in those with more severe symptoms of depression. In addition, despite the HADS being a widely used measure, previous literature indicates that the two subscales do not always assess for independent symptoms of anxiety and depression, with strong correlations between them often indicated (Cosco et al., 2012). In the current study, although multicollinearity was not indicated, there was a significant correlation between the two subscales of the HADS. As such it may be that this measure was not sensitive enough to detect independent symptoms of anxiety and depression.

Although in the predicted direction, the hypothesised relationship between self-compassion and interpersonal problems was not supported. This relationship has not previously been explored and thus no comparisons to previous findings can be made. From a theoretical perspective it was predicted that there would be a significant negative relationship between these variables, with more interpersonal problems associated with lower levels of self-compassion. Interestingly, Baker and McNulty (2011) hypothesised that higher levels of self-compassion could potentially lead to more interpersonal problems and less satisfaction with relationships. This was based on the theory that those with high levels of self-compassion should have greater self-esteem, and therefore may feel less motivated to correct interpersonal mistakes due to feeling they should be accepted despite their flaws. On the other hand, less self-compassionate individuals will experience lower self-esteem and therefore may feel more motivated to deal with interpersonal mistakes to build social acceptance. In a series of studies, Baker and McNulty (2011) found that the implications of self-compassion differed for men and women: for women, self-compassion was positively associated with motivation to resolve interpersonal mistakes and relationship problems. However, for men, this relationship was moderated by level of conscientiousness. This suggests the relationship between self-compassion and interpersonal problems may not be straightforward, and there may be other factors to consider that mediate or moderate this relationship, such as gender, self-esteem and conscientiousness. Future research is required to explore this potentially complex relationship further.

Finally, the hypothesis that those with attachment avoidance will experience emotional distress because of increased interpersonal problems was not supported by the results of this study. This differs from previous research in a nonclinical population where a significant mediation effect of interpersonal problems has been found (Hankin et al., 2005). As already
noted, it may be that interpersonal problems are more strongly related to depression, which future research could examine by recruiting a population of participants diagnosed with clinical depression. Finally, ‘interpersonal problems’ is a broad term, covering a range of difficulties, highlighted by the fact the IIP-32 consists of eight subscales. It may therefore be that different types of interpersonal problems have differing relationships with both attachment and mental health. Future research is therefore warranted to assess the hypothesised relationship between attachment, interpersonal problems and mental health in more detail.

Limitations
When considering the results of this study it is important to consider the limitations that exist. Firstly, it is noteworthy that this study included a sample of participants who presented with mixed anxiety and depressive symptoms. Additionally, as noted previously, the HADS does not necessarily assess for anxiety and depression as separate constructs (Cosco et al., 2012). Therefore, the results of this additional mediation analysis treating anxiety and depression as separate outcomes should be interpreted with this in mind.

Secondly, as this study was cross-sectional in design, conclusions regarding causation cannot be drawn. Thus, whilst self-compassion was found to be a significant mediator, it is possible that alternative models may exist that provide a good fit to the data. For example, it may be that self-compassion is dependent on mood state, rather than being a causal trait-like factor for emotional distress. Thus, longitudinal studies are clearly required to further the understanding of the relationship between these variables, and to clarify that the direction of causation is as hypothesised in the current study.

The current study also relied on self-report measures. Although the questionnaires used were deemed valid for the population being assessed, they do have limitations. For example, the psychometric properties of the SCS have been questioned due to the inability to replicate the six-factor structure in non-student populations (Costa et al., 2015; López et al., 2015; Williams et al., 2014). It is noteworthy that the Cronbach’s alpha for the SCS in the current study was lower than has been reported in previous studies. This difference could be due to the current study involving a clinical sample, whereas the original psychometric properties of the scale were established in nonclinical samples. In addition, the SCS involves three positive and three negative subscales. Recently it has been argued that the positive and negative items are measuring different aspects of self-compassion and therefore should not
be combined to provide a total self-compassion score (López et al., 2015). Future research may benefit from assessing self-compassion in alternative ways. Further research could also utilise the individual subscales of the IIP-32, rather than the total score: this was not completed in the current study as there would not have been sufficient power. The limitations of the HADS have already been discussed and future research could consider alternative methods of assessing for anxiety and depression, either through clinical interview or other measures that aim to assess anxiety and depression independently.

Finally, although a strength of this study was that the sample was recruited from within a routine clinical setting, the recruitment process may have resulted in a sample of highly motivated participants: they were required to complete the questionnaires at home and return them by post (or to their clinician). This limits the generalisability of the findings.

**Clinical Implications**

Despite the noted limitations, the findings here suggest that low self-compassion can be a pathway to overall emotional distress and anxiety for individuals with attachment avoidance. This finding has important clinical implications, suggesting that self-compassion may be a promising target for therapeutic intervention for those with high attachment avoidance experiencing mild to moderate emotional distress. That is, for this patient group, it may be important to assess for levels of self-compassion and incorporate strategies that foster taking a compassionate approach to the self, helping an individual learn to self-soothe and develop self-warmth, thus helping to develop effective emotion regulation. This supports the development and practice of psychotherapeutic approaches, such as Compassion-focused therapy (Gilbert, 2009), that aim to enhance self-compassion, for which there is a growing evidence base (Leaviss & Uttley, 2015).

**Declaration of Conflicting Interests**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**

The authors received no financial support for the research, authorship, and/or publication of this article.
References


References for whole thesis


outcomes? *International Journal of Eating Disorders, 47*(1), 54-64. doi: http://dx.doi.org/10.1002/eat.22196


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JOURNAL OF AFFECTIVE DISORDERS
Official Journal of the International Society for Affective Disorders

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<td>Study inclusion and exclusion criteria</td>
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<td>Recruitment procedures used (e.g. details of randomisation, blinding)</td>
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<tr>
<td>Description of the intervention(s) and control(s)</td>
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<tr>
<td>Adherence to intervention</td>
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<tr>
<td>Description of co-interventions</td>
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<td>Follow-up period</td>
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<td><strong>Outcome data/results</strong></td>
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<tr>
<td>Self-compassion measure used</td>
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<tr>
<td>Summary of main outcome data</td>
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<td>Other measures used</td>
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<td>Statistical techniques used</td>
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<tr>
<td>Number of participants included in analysis</td>
<td></td>
</tr>
<tr>
<td>Number of withdrawals, exclusions, lost to follow-up</td>
<td></td>
</tr>
<tr>
<td>Type of analysis used in study (e.g. intention to treat, per protocol)</td>
<td></td>
</tr>
<tr>
<td>Summary of additional outcomes</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Quality assessment checklist

Study authors:

<table>
<thead>
<tr>
<th>Item</th>
<th>Criteria</th>
<th>Information to consider</th>
<th>Rating</th>
</tr>
</thead>
</table>
|      |                                                                          |                                                                          | Yes = 1  \
|      |                                                                          |                                                                          | No = 0  \
<p>|      |                                                                          |                                                                          | Unable to determine = 0  |
|      |                                                                          |                                                                          |                             |
| <strong>Reporting</strong> |                                                                          |                                                                          |                             |
| 1   | Is the hypothesis/aim/objectives of the study clearly described?         |                                                                          |                             |
| 2   | Are the main outcomes to be measured clearly described in the introduction or methods section? | If the main outcomes are first mentioned in the results section, the question should be answered ‘no’ |                             |
| 3   | Are the characteristics of the participants included in the study clearly described? | Inclusion and/or exclusion criteria should be given. Emphasis on inclusion and exclusion criteria, other characteristics are age/gender/morbidity |                             |
| 4   | Are the interventions/treatments of interest clearly described?           | Treatments and placebo (where relevant) that are to be compared should be clearly described |                             |
| 5   | Are the distributions of principal confounders in each group of clients to be compared (or within a single group) clearly described? | A list of principal confounders is provided. Morbidity, comorbidity, age, gender, previous history. Good quality will include adjustment regression or matching |                             |
| 6   | Are the main findings of the study clearly described?                     | Simple outcome data (including denominators and numerators) should be reported for all major findings so that the reader can check the major analyses and conclusions. This question does not cover statistical tests which are considered below |                             |
| 7   | Does the study provide estimates of the random variability in the data for the main outcomes? | In non-normally distributed data the inter-quartile range of results should be reported. In normally distributed data the standard error, standard deviation, or confidence intervals should be reported. If the distribution of the data is not described, it must be assumed that the estimates used were appropriate and the question should be answered ‘yes’ |                             |
| 8   | Have all the important adverse events that may be a consequence of the intervention/treatment been reported? | This should be answered ‘yes’ if the study demonstrates that there was a comprehensive attempt to measure adverse events (a list of adverse events is provided) e.g. early discontinuation of therapy |                             |
| 9   | Have the characteristics of clients lost to follow-up been described?     | This should be answered ‘yes’ where there were no losses to follow-up or where losses to follow-up were so small |                             |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Have actual probability values been reported (e.g. 0.035 rather than 0.05) for the main outcomes except where the probability value is less than 0.01?</td>
<td>that findings would be unaffected by their inclusion. This should be answered ‘no’ where a study does not report the number of patients lost to follow-up. Follow up = post-therapy, or loss from study at baseline.</td>
</tr>
<tr>
<td>11</td>
<td>Have sufficient data been provided to enable calculation of outcomes such as pre–post effect sizes, estimates of reliable and clinically significant change?</td>
<td>If data are provided to enable calculation of any one of these outcomes score the question ‘yes’</td>
</tr>
<tr>
<td><strong>External validity/clinical representativeness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Were the clients asked to participate in the study representative of the entire population from which they were recruited?</td>
<td>The study must identify the source population for clients and describe how the patients were selected. Clients would be representative if they comprised the entire source population, an unselected sample of consecutive clients, or a random sample. Random sampling is only feasible where a list of all members of the relevant population exists. Where a study does not report the proportion of the source population from which the patients are derived the question should be answered as ‘unable to determine’</td>
</tr>
<tr>
<td>13</td>
<td>Were those clients who were prepared to participate representative of the entire population from which they were recruited?</td>
<td>The proportion of those asked who agreed should be stated. Validation that the sample was representative would include demonstrating that the distribution of the main confounding factors was the same in the study sample and the source population</td>
</tr>
<tr>
<td>14</td>
<td>Were therapists experienced professionals trained to deliver the intervention?</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Are the findings generalisable?</td>
<td>Is the intervention evaluated for an appropriate duration and within a clinically-relevant setting?</td>
</tr>
<tr>
<td><strong>Internal reliability: bias (measurement and treatment)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>If any of the results of the study were based on ‘data dredging’ was this made clear</td>
<td>Any analysis that had not been planned at the outset of the study should be clearly indicated. If no retrospective unplanned subgroup analysis were reported, then answer ‘yes’.</td>
</tr>
<tr>
<td>17</td>
<td>Were the statistical tests used to assess the main outcomes appropriate?</td>
<td>The statistical techniques used must be appropriate to the data. For example, non-parametric methods should be used for</td>
</tr>
<tr>
<td></td>
<td>Was compliance with the intervention/treatment reliable?</td>
<td>Where there was non-compliance with the allocated treatment the question should be answered ‘no’</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>18</td>
<td>Were the main outcome measures used accurate (valid and reliable)?</td>
<td>For studies where the outcome measures are clearly described, the question should be answered ‘yes’. For studies which refer to other work or that demonstrates the outcome measures are accurate, the question should be answered ‘yes’</td>
</tr>
<tr>
<td>19</td>
<td>Do the analyses adjust for different lengths of follow-up of patients in different treatment groups?</td>
<td>Where no comparison group score 0. Where lengths of follow-up the same score 1</td>
</tr>
</tbody>
</table>

**Internal reliability: confounding variables/selection bias**

<table>
<thead>
<tr>
<th></th>
<th>Was there an adequate control or comparison group?</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Were the clients in different intervention/treatment groups recruited from the same population?</td>
</tr>
<tr>
<td>22</td>
<td>Were the clients in different intervention/treatment groups recruited over the same period of time?</td>
</tr>
<tr>
<td>23</td>
<td>Were the clients randomised to intervention groups?</td>
</tr>
<tr>
<td>24</td>
<td>Was there adequate adjustment for confounding in the analysis from which the main findings were drawn?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>26</td>
<td><strong>Were losses of clients to follow-up taken into account?</strong></td>
</tr>
<tr>
<td>27</td>
<td><strong>Did the study have sufficient power to detect a clinically important effect where the probability value for a difference being due to chance is less than 5%?</strong></td>
</tr>
</tbody>
</table>
Appendix D: Reasons for excluding studies

<table>
<thead>
<tr>
<th>Authors</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashworth <em>et al.</em> (2015)</td>
<td>No self-compassion outcome measure</td>
</tr>
<tr>
<td>Bartels-Velthuis <em>et al.</em> (2015)</td>
<td>Not an intervention study</td>
</tr>
<tr>
<td>Braehler <em>et al.</em> (2013)</td>
<td>No standardised measure of self-compassion</td>
</tr>
<tr>
<td>Cree (2010)</td>
<td>Not an intervention study</td>
</tr>
<tr>
<td>Eisendrath <em>et al.</em> (2011)</td>
<td>No self-compassion outcome measure</td>
</tr>
<tr>
<td>Gale <em>et al.</em> (2014)</td>
<td>No self-compassion outcome measure</td>
</tr>
<tr>
<td>Germer and Neff (2013)</td>
<td>No self-compassion outcome measure</td>
</tr>
<tr>
<td>Heriot-Maitland <em>et al.</em> (2014)</td>
<td>No self-compassion outcome measure</td>
</tr>
<tr>
<td>Judge <em>et al.</em> (2012)</td>
<td>No self-compassion outcome measure</td>
</tr>
<tr>
<td>Kelly <em>et al.</em> (2014)</td>
<td>Not an intervention study</td>
</tr>
<tr>
<td>Keng <em>et al.</em> (2012)</td>
<td>No clinical symptoms</td>
</tr>
<tr>
<td>Lowens (2010)</td>
<td>Not an intervention study</td>
</tr>
<tr>
<td>Lucre and Corten (2013)</td>
<td>No self-compassion outcome measure</td>
</tr>
<tr>
<td>Markanday <em>et al.</em> (2012)</td>
<td>Letter to the editor: not peer-reviewed</td>
</tr>
<tr>
<td>Melyani <em>et al.</em> (2015)</td>
<td>Not published in English</td>
</tr>
<tr>
<td>Neff and Germer (2013)</td>
<td>No clinical symptoms</td>
</tr>
<tr>
<td>Noorbala <em>et al.</em> (2013)</td>
<td>No self-compassion outcome measure</td>
</tr>
<tr>
<td>Robins <em>et al.</em> (2012)</td>
<td>No clinical symptoms</td>
</tr>
<tr>
<td>Schroevers and Brandsma (2010)</td>
<td>No clinical symptoms and no self-compassion outcome measure</td>
</tr>
<tr>
<td>Shapiro <em>et al.</em> (2011)</td>
<td>No clinical symptoms</td>
</tr>
<tr>
<td>Welford (2010)</td>
<td>Not an intervention study</td>
</tr>
</tbody>
</table>
Appendix E: List of additional outcome measures

<table>
<thead>
<tr>
<th>Authors, year</th>
<th>Outcome measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaumont et al. (2012)</td>
<td>HADS, IES-R</td>
</tr>
<tr>
<td>Boersma et al. (2015)</td>
<td>SPSQ, SAIS, MADRS-S</td>
</tr>
<tr>
<td>Goodman et al. (2014)</td>
<td>PSWQ, GAD-7, PHQ-9, MINI, BAI, BDI-II, MAAS</td>
</tr>
<tr>
<td>Jazaieri et al. (2012)</td>
<td>LSAS-SR, SIAS-S, BDI-II, PSS-4, RSES, SWLS, ULS-8</td>
</tr>
<tr>
<td>Kelly and Carter (2015)</td>
<td>EDE-Q, CES-D, FCS, CEQ, HRS</td>
</tr>
<tr>
<td>Kuyken et al. (2010)</td>
<td>HRSD, KIMS, DAS</td>
</tr>
<tr>
<td>Laithwaite et al. (2009)</td>
<td>BDI-II, SoCS, RSES, SIP-AD, OAS</td>
</tr>
<tr>
<td>Mayhew and Gilbert (2008)</td>
<td>PSWQ, GAD-7, PHQ-9, MINI, BAI, BDI-II, MAAS</td>
</tr>
<tr>
<td>Radford et al. (2012)</td>
<td>RRS, HADS, WBI-5</td>
</tr>
<tr>
<td>Schoenberg and Speckens (2014)</td>
<td>IDS, RRS, FFMQ, STAI, CDS</td>
</tr>
<tr>
<td>Yadavaia et al. (2014)</td>
<td>DASS-21, GHQ, AAQ-II</td>
</tr>
</tbody>
</table>

AAQ-II: Acceptance and Action Questionnaire
BAVQ: Beliefs about Voices Questionnaire
BAI: Beck Anxiety Inventory
BDI-II: Beck Depression Inventory
CDS: Cambridge Depersonalisation Scale
CEQ: Credibility/Expectancy Questionnaire
CES-D: The Centre for Epidemiological Studies for Depression
DAS: Dysfunctional Attitude Scale
DASS-21: Depression Anxiety and Stress Scale
DES-II: Dissociative Experiences Scale
EDE-Q: Eating Disorder Examination Scale
FCS: Fears of Self-Compassion Scale
FFMQ: Five Facet Mindfulness Questionnaire
FSCS: Functions of the Self-Criticising/Attacking Scale
FSCRS: Forms of the Self-Criticising/Attacking Scale and Self-Reassuring Scale
GHQ: General Health Questionnaire
HRS: Homework Rating Scale
HRSD: Hamilton Rating Scale
IDS: Inventory of Depressive Symptomology
IES-R: Impact of events scale – revised
KIMS: Kentucky Inventory of Mindfulness Skills
LSAS-SR: Liebowitz Social Anxiety Scale – self-report
MAAS: Mindfulness Attention Awareness Scale
MADRS-S: Montgomery Asberg Depression Rating Scale
MINI: Mini International Neuropsychiatric Interview
OAS: Other as shamer scale
PHQ-9: Patient Health Questionnaire-9
PSS-4: Perceived Stress Scale
PSWQ: Penn State Worry Questionnaire
RRS: Ruminative Response Scale
RSES: Rosenberg Self-esteem Scale
SCL-90: Symptom Checklist-90
SIAS-S: Social Interaction Anxiety Scale Straightforward Scale
SIP-AD: Self-image profile for adults
SoCS: Social Comparison Scale
SPSQ: Social Phobia Screening Questionnaire
STAI: State-Trait Anxiety Inventory
SUD: Subjective Units of Disturbance
SWLS: Satisfaction with Life Scale
ULS-8: UCLA-8 Loneliness Scale
VOC: Validity of Cognition Scale
VRS: Voice Rank Scale
WBI-5: WHO Well-being Index-5
Appendix F: Journal of Personality Author Guidelines

Journal of Personality

Author Guidelines

The Journal is devoted to scientific investigations in the field of personality. We welcome studies of personality and behavior dynamics, personality development, and individual differences in the cognitive, affective, and interpersonal domains. The scope of the Journal is not fixed, however, and it is intended to reflect all areas of significant current research. Articles ought to make a substantial empirical contribution. Literature reviews, theoretical papers, and articles concerned exclusively with test construction or validation will ordinarily not be considered. In style, particularly in respect to citations, form of bibliographies, preparation of tables and figures, etc., manuscripts submitted should conform to the conventions adopted for periodicals published by the American Psychological Association (see the Publication Manual, sixth edition).

All papers published in Journal of Personality are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

Manuscripts typically should not exceed 36 pages (including cover page, abstract, text, conflict of interest and funding statements, references, tables, and figures), in APA (6th ed.) style, with 1 inch margins on all sides and a standard 12 point font. The entire paper (text, references, tables, etc.) must be double spaced. Submissions that exceed 36 pages must be accompanied by a justification (e.g., multiple experiments; multifaceted longitudinal studies; studies that are unusually complex in terms of methods and/or analytic strategy), which will be evaluated by the editor. In no case should the manuscript exceed 46 pages. Papers that do not follow these requirements will be returned without review.

An abstract of up to 200 words must include the following sections and headings: Objective: a brief statement of the purpose of the study; Method: a summary of study participants (sample size, age, gender, ethnicity), and descriptions of the study design and procedures; Results: a summary of the primary findings; Conclusions: a statement regarding the implications of the findings for personality psychology. Below the abstract, supply up to five keywords or short phrases.

Authors are now required to include a declaration of conflicting interests and a statement of funding for the research described in the manuscript. Both the declaration of conflicting interests and the funding statement should appear on a separate page just before References. Under the heading “Declaration of Conflicting Interests,” specify any potential conflicting interests. If there is no conflicting interest, include the following text: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. Directly following the Declaration of Conflicting Interests, authors must list, under the heading “Funding,” all funding sources. If the research was funded, the statement should read:

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Preparation of this manuscript was supported by Grant xxxxxxx from xxxxxxx.
If the work described in the manuscript received no financial support, include the statement: The author(s) received no financial support for the research, authorship, and/or publication of this article.

Other sources of support should be clearly identified in the Acknowledgments section of the manuscript. For example, these might include funding for open access publication, or funding for writing or editorial assistance, or provision of experimental materials.

Authors should submit manuscripts online at http://mc.manuscriptcentral.com/jopy. Full instructions and support are available on the site and a user ID and password can be obtained on the first visit. Support can be contacted by phone (+1 434 817 2040 ext. 167), or at http://mcv3support.custhelp.com. If you cannot submit online, please contact the editorial office.

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author will receive an e-mail with a unique link that enables them to register and have their article automatically added to the system. Please ensure that a complete e-mail address is provided when submitting the manuscript. Visit [http://authorservices.wiley.com/](http://authorservices.wiley.com/) for more details on online production tracking and for a wealth of resources including FAQs and tips on article preparation, submission and more.

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Appendix G: Participant Information Sheet

Self-compassion, interpersonal problems and attachment, Version 2, 01/04/15

Participant Information Sheet

Research study: Attachment, self-compassion and interpersonal problems in common mental health problems

Thank you for taking the time to read about this study.

You are invited to take part in a research study that is being completed as part of an educational qualification. Before you decide if you would like to participate, it is important that you understand why the research is being done and what it would involve for you. Please take the time to read the following information carefully and discuss it with others if you wish. This will explain what the research is about and what it involves. Please ask questions if anything you read is not clear or if you would like more information.

What is the purpose of this study?
The study aims to understand the relationship between how individuals experience close relationships, how they relate to others and themselves, and the experience of mental health problems such as anxiety and depression. It is hoped that a greater understanding of these relationships will eventually help us develop better treatments for common mental health problems. This research is being conducted as part of a Doctoral training in Clinical Psychology.

Why have I been invited to take part?
You have been invited to take part because you are currently attending for psychological therapy for anxiety and/or depression.

What would I have to do?
Your clinician will provide you with the questionnaire pack containing a consent form and four questionnaires to be completed. These questionnaires are designed to assess how you relate to others and yourself, and your current mood and stress levels. There is an additional form to be completed that asks for some basic information about you, such as your age and gender. In total it should take about 35 minutes to complete these questionnaires. Once you have completed the questionnaires and consent form (at home), you should seal them in the envelope provided and return them to your clinician, or, if you prefer, you can post them directly to me with a stamped addressed envelope. Your clinician will not look at your responses to the questionnaires.

Do I have to take part?
No. Participation in this study is entirely voluntary. Participation or non-participation in this study will in no way affect the treatment you receive. If you decide to take part, you are still free to withdraw at any time and you do not have to give a reason.

What are the possible disadvantages of taking part?
It is unlikely that there would be any disadvantages or risks to you if you choose to take part. However, it is possible that some of the questions in the questionnaires may identify areas of difficulty or feelings that you had not considered before. If you require any extra support after taking part in the research, you should speak to your clinician or contact your GP.

What are the possible benefits of taking part?
It is hoped that the results of this study will contribute to the understanding of what makes someone vulnerable to experiencing mental health problems, and influence the development of more effective psychological treatments in the future.

**What will happen to the information I give?**
The information you give will be treated confidentially. Your name will not appear on the questionnaires, and instead your information will be assigned a code number to ensure that it remains anonymous. Information will be kept in a locked filing cabinet on NHS premises and the only people who will have access to this will be me and my research supervisors (named below). If during the study you inform me of anything that indicates that there may be a serious risk to you or to someone else, I may have to discuss this with the clinician involved in your care.

**What will happen to the results of this study and will I be informed of the results?**
The anonymised results of this research study will be written up and submitted as a Doctoral thesis in Clinical Psychology at the University of Edinburgh. A summary of the main results of the research will also be disseminated to the Psychological Therapies Teams where recruitment takes place. It may also be published in a scientific journal so that other professionals can read about the results. Individuals who participate in the study will never be identified in any way in any publication arising from this research. If you are interested in obtaining a summary of the results you can contact me with the details below.

**Who has reviewed this study?**
The East of Scotland Research Ethics Service (EoSRES) REC 2, which has responsibility for scrutinising proposals for medical research on humans, has examined the proposal and has raised no objections from the point of view of medical ethics. It is a requirement that your records in this research, together with any relevant medical records, be made available for scrutiny by monitors from the University of Edinburgh and NHS Tayside, whose role is to check that research is properly conducted and the interests of those taking part are adequately protected.

**What can I do if I am concerned about this research?**
If you have any questions or concerns about any aspect of this research, please contact me, Kate Mackintosh, using the contact details below. Alternatively, you can contact any of the supervisors using the details below. If you would like to discuss this study with someone independent of the study team, please contact: Linda Graham on 01382 306150 or linda.graham@nhs.net.

Should you wish to complain about any aspect of the way you have been approached or treated during the course of the study, you can do so by using the following contact details:

*Patient Liaison Manager, Complaints Office, Ninewells Hospital, Dundee, DD1 9SY.*
*Freephone 0800 027 5507.*

**Contact details:**

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The University of Edinburgh  
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Appendix H: Participant Consent Form

Self-compassion, interpersonal problems and attachment
Version 2
01/04/15

Participant Consent Form

Research study: Attachment, self-compassion and interpersonal problems in common mental health problems

Researcher: Kate Mackintosh, Trainee Clinical Psychologist

Please put your initials in the box

1. I confirm that I have read and understood the information sheet (version 2, 01/04/15) for the above study. I have had the opportunity to consider the information, to ask questions and I have had these answered satisfactorily.

2. I understand that participation in the study is entirely voluntary and that I am free to withdraw at any time, without giving a reason, and without my health care or legal rights being affected.

3. I understand that I will not be identifiable on any reports of the findings and my participation is confidential and anonymous.

4. I understand that relevant sections of data collected during the study may be looked at by individuals from the Sponsor, University of Edinburgh, or from NHS Tayside where it is relevant to my taking part in this research. I give permission for those individuals to have access to my records.

5. I agree to take part in the above study

____________________  ____________________  ____________________
Name of participant Date Signature

____________________  ____________________  ____________________
Name of person taking consent Date Signature

Original (x1) to be retained in site file. Copy (x1) to be retained by participant
Appendix I: Demographics form

Additional Information Sheet – please complete

Age: ___________________  Gender: (please circle) Male / Female

What is your relationship status? (please circle)
Single / Married / In a relationship / Divorced / Widowed / Other (please state)
____________________

Please provide the first part plus one digit of your postcode: (e.g. if your postcode was DD9 7QA, you would put DD9 7)
____________________

What is your ethnic group? Please tick the box most relevant to you

<table>
<thead>
<tr>
<th>White British</th>
<th>Black British</th>
</tr>
</thead>
<tbody>
<tr>
<td>White other</td>
<td>Black other</td>
</tr>
<tr>
<td>Asian British</td>
<td>Any other (please specify)</td>
</tr>
<tr>
<td>Asian other</td>
<td>____________________</td>
</tr>
</tbody>
</table>

Employment status: (please circle)

Employed / Unemployed / Student / Retired / Unable to work (please specify reason) ______________________________

Thank you for taking the time to complete
Appendix J: Self-compassion Scale

Self-compassion Scale

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

<table>
<thead>
<tr>
<th>Almost never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Almost always</th>
<th>5</th>
</tr>
</thead>
</table>

1. I’m disapproving and judgmental about my own flaws and inadequacies.
2. When I’m feeling down I tend to obsess and fixate on everything that’s wrong.
3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
5. I try to be loving towards myself when I’m feeling emotional pain.
6. When I fail at something important to me I become consumed by feelings of inadequacy.
7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.
8. When times are really difficult, I tend to be tough on myself.
9. When something upsets me I try to keep my emotions in balance.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I’m intolerant and impatient towards those aspects of my personality I don’t like.
12. When I’m going through a very hard time, I give myself the caring and tenderness I need.
13. When I’m feeling down, I tend to feel like most other people are probably happier than I am.
14. When something painful happens I try to take a balanced view of the situation.

Please Turn Over
15. I try to see my failings as part of the human condition.

16. When I see aspects of myself that I don’t like, I give myself a hard time.

17. When I fail at something important to me I try to keep things in perspective.

18. When I’m really struggling, I tend to feel like other people must be having an easier time of it.

19. I’m kind to myself when I’m experiencing suffering.

20. When something upsets me I get carried away with my feelings.

21. I can be a bit cold-hearted towards myself when I’m experiencing suffering.

22. When I’m feeling down I try to approach my feelings with curiosity and openness.

23. I’m tolerant of my own flaws and inadequacies.

24. When something painful happens I tend to blow the incident out of proportion.

25. When I fail at something that’s important to me, I tend to feel alone in my failure.

26. I try to be understanding and patient towards those aspects of my personality I don’t like.
Appendix K: Hospital Anxiety and Depression Scale

Hospital Anxiety and Depression Scale (HADS)

Please read each item below and **underline the reply** which comes closest to how you have been feeling in the past week. Ignore the numbers printed at the edge of the questionnaire.

Don’t take too long over your replies, your immediate reaction to each item will probably be more accurate than a long, thought-out response.

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I feel tense or ‘wound up’</th>
<th>Not at all</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>Most of the time</td>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>A lot of the time</td>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>From time to time, occasionally</td>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>Not at all</td>
<td></td>
<td>Not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I still enjoy the things I used to enjoy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>Definitely as much</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Not quite so much</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Only a little</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Hardly at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I get a sort of frightened feeling as if something awful is about to happen</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>Very definitely and quite badly</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Yes, but not too badly</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>A little, but it doesn’t worry me</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>Not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I can laugh and see the funny side of things</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>As much as I always could</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Not quite so much now</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Definitely not so much now</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>Worrying thoughts go through my mind</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>A great deal of the time</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>A lot of the time</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Not too often</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>Very little</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I feel as if I am slowed down</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>Nearly all the time</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Very often</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Sometimes</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>Not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I get a sort of frightened feeling like ‘butterflies’ in the stomach</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Occasionally</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Quite often</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Very often</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I have lost interest in my appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>Definitely</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>I don’t take as much care as I should</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>I may not take quite as much care</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>I take just as much care as ever</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I feel restless as if I have to be on the move</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>Very much indeed</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Quite a lot</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Not very much</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>Not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>I look forward with enjoyment to things</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>As much as I ever did</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Rather less than I used to</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Definitely less than I used to</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Hardly at all</td>
</tr>
<tr>
<td>I feel cheerful</td>
<td>I get sudden feelings of panic</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>Very often indeed</td>
<td></td>
</tr>
<tr>
<td>Not often</td>
<td>Quite often</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>Not very often</td>
<td></td>
</tr>
<tr>
<td>Most of the time</td>
<td>Not at all</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I can sit at ease and feel relaxed</th>
<th>I can enjoy a good book or radio or television programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely</td>
<td>Definitely</td>
</tr>
<tr>
<td>Usually</td>
<td>Often</td>
</tr>
<tr>
<td>Not often</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Not at all</td>
<td>Not often</td>
</tr>
<tr>
<td></td>
<td>Very seldom</td>
</tr>
</tbody>
</table>

Now check that you have answered all the questions

<table>
<thead>
<tr>
<th>TOTAL</th>
<th>A</th>
<th>D</th>
</tr>
</thead>
</table>

125
### Appendix L: Inventory of Interpersonal Problems-32

**IIP-32 Question/Scoring Sheet**

<table>
<thead>
<tr>
<th>Case ID:</th>
<th>Date:</th>
<th>Sex: M / F</th>
</tr>
</thead>
</table>

People have reported having the following problems in relating to other people. Please read the list below, and for each item, consider it has been a problem for you with respect to any significant person in your life. Then fill in the numbered circle that describes how distressing that problem has been.

<table>
<thead>
<tr>
<th>The following are things you find hard to do with other people. It is hard for me to:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Say “hi” to other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Join in on groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Keep things private from other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Tell a person to stop bothering me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Introduce myself to new people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Confront people with problems that come up</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Be assertive with another person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Let other people know when I am angry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Socialize with other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Show affection to people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Get along with people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Be firm when I need to be</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Experience a feeling of love for another person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Be supportive of another person’s goals in life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Feel close to other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Really care about other people’s problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Put somebody else’s needs before my own</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Feel good about another person’s happiness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Ask other people to get together socially with me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Be assertive without worrying about hurting the other person’s feelings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The following are things that you do too much.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. I open up to people too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. I am too negative toward other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. I try to please other people too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. I want to be noticed too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. I try to control other people too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. I put other people’s needs before my own too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. I am overly giving to other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. I manipulate other people too much to get what I want</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. I feel personal things to other people too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. I argue with other people too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. I feel other people take advantage of me too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. I am affected by another person’s misery too much</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix M: Experiences in Close Relationships-Revised

Experiences in Close Relationships-Revised

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by circling a number to indicate how much you agree or disagree with the statement.

<table>
<thead>
<tr>
<th>Question</th>
<th>1= Strongly Disagree………7= Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I'm afraid that I will lose my partner's love.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>2. I often worry that my partner will not want to stay with me.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>3. I often worry that my partner doesn't really love me.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>4. I worry that romantic partners won't care about me as much as I care about them.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>6. I worry a lot about my relationships.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>7. When my partner is out of sight, I worry that he or she might become interested in someone else.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>9. I rarely worry about my partner leaving me.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>10. My romantic partner makes me doubt myself.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>11. I do not often worry about being abandoned.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>12. I find that my partner(s) don't want to get as close as I would like.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>13. Sometimes romantic partners change their feelings about me for no apparent reason.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>14. My desire to be very close sometimes scares people away.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>16.</td>
<td>It makes me mad that I don't get the affection and support I need from my partner.</td>
</tr>
<tr>
<td>17.</td>
<td>I worry that I won't measure up to other people.</td>
</tr>
<tr>
<td>18.</td>
<td>My partner only seems to notice me when I'm angry.</td>
</tr>
<tr>
<td>19.</td>
<td>I prefer not to show a partner how I feel deep down.</td>
</tr>
</tbody>
</table>

Please Turn Over

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20.</td>
<td>I feel comfortable sharing my private thoughts and feelings with my partner.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>21.</td>
<td>I find it difficult to allow myself to depend on romantic partners.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>22.</td>
<td>I am very comfortable being close to romantic partners.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>23.</td>
<td>I don't feel comfortable opening up to romantic partners.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>24.</td>
<td>I prefer not to be too close to romantic partners.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>25.</td>
<td>I get uncomfortable when a romantic partner wants to be very close.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>26.</td>
<td>I find it relatively easy to get close to my partner.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>27.</td>
<td>It's not difficult for me to get close to my partner.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>28.</td>
<td>I usually discuss my problems and concerns with my partner.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>29.</td>
<td>It helps to turn to my romantic partner in times of need.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>30.</td>
<td>I tell my partner just about everything.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>31.</td>
<td>I talk things over with my partner.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>32.</td>
<td>I am nervous when partners get too close to me.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>33.</td>
<td>I feel comfortable depending on romantic partners.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>34.</td>
<td>I find it easy to depend on romantic partners.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>35.</td>
<td>It's easy for me to be affectionate with my partner.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>36.</td>
<td>My partner really understands me and my needs.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
Appendix N: East of Scotland Ethics Service Communication

East of Scotland Research Ethics Service (EoSTES)

Tayside medical Science Centre
Residency Block Level 3
George Prie Way
Ninewells Hospital and Medical School
Dundee DD1 9SY

Ms Kate Macintosh
Tramee Clinical Psychologist
NHS Tayside
Adult Psychological Therapies Service
Learning and Development Centre
Stracathro Hospital
BRECHIN DD9 7QA

Dear Ms Macintosh

Study Title: The relationships between self-compassion, attachment and interpersonal problems in patients attending an adult psychological therapies service

REC reference: 15/ES/028
IRAS project ID: 101760

Thank you for your letter of 01 April 2015, responding to the Committee’s request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair and designated Committee members.

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

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.
Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at [http://www.rdforum.nhs.uk](http://www.rdforum.nhs.uk).

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

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

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

Registration of Clinical Trials

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

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

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

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

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

NHS sites

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

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:
<table>
<thead>
<tr>
<th>Document</th>
<th>Version</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covering letter on headed paper [Cover letter to REC]</td>
<td></td>
<td>01 April 2015</td>
</tr>
<tr>
<td>Evidence of Sponsor insurance or indemnity (non NHS Sponsor only) [certificate of insurance]</td>
<td></td>
<td>06 August 2014</td>
</tr>
<tr>
<td>GP consultant information sheets or letters [GP letter]</td>
<td>version 1</td>
<td>30 January 2015</td>
</tr>
<tr>
<td>IRAS Checklist XML [Checklist_0334231S]</td>
<td></td>
<td>03 April 2015</td>
</tr>
<tr>
<td>Letter from sponsor [PL confirmation]</td>
<td>v2</td>
<td>16 June 2014</td>
</tr>
<tr>
<td>Non-validated questionnaire [demographics form]</td>
<td>v2</td>
<td>01 April 2015</td>
</tr>
<tr>
<td>Participant consent form</td>
<td>v2</td>
<td>01 April 2015</td>
</tr>
<tr>
<td>Participant information sheet (PIS) [highlighted changes]</td>
<td>v2</td>
<td>01 April 2015</td>
</tr>
<tr>
<td>REC Application Form [REC_Form_11022015]</td>
<td>v2</td>
<td>11 February 2015</td>
</tr>
<tr>
<td>Research protocol or project proposal [research protocol]</td>
<td>v2</td>
<td>01 April 2015</td>
</tr>
<tr>
<td>Summary CV for Chief Investigator (CI) [Kate Medaillouf CV]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summary CV for supervisor (student research) [Stella Chan CV]</td>
<td></td>
<td>06 January 2015</td>
</tr>
<tr>
<td>Validated questionnaire [SCS]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Validated questionnaire [ECR-R]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Validated questionnaire [HADS]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Validated questionnaire</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Statement of compliance**

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

**After ethical review**

**Reporting requirements**

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

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

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

**User Feedback**

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

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

15/ES/0028 Please quote this number on all correspondence

Yours sincerely

[Signature]

pp
Ms Tara Graham
Chair

Email: eosres.tayside@nhs.net

Enclosures: “After ethical review – guidance for researchers”

Copy to: Ms Jo-Anne Robertson
NHS Tayside R&D office
Appendix O: Additional results

Table 8: Skewness and kurtosis values, SE and z-scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>Skewness value</th>
<th>Skewness SE</th>
<th>z-score skewness</th>
<th>Kurtosis value</th>
<th>Kurtosis SE</th>
<th>z-score kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>HADS – anxiety</td>
<td>-0.538</td>
<td>0.279</td>
<td>-1.928</td>
<td>0.490</td>
<td>0.552</td>
<td>0.888</td>
</tr>
<tr>
<td>HADS – depression</td>
<td>-0.138</td>
<td>0.279</td>
<td>-0.495</td>
<td>-0.540</td>
<td>0.552</td>
<td>-0.978</td>
</tr>
<tr>
<td>HADS – total</td>
<td>-0.242</td>
<td>0.279</td>
<td>-0.867</td>
<td>-0.096</td>
<td>0.552</td>
<td>-0.174</td>
</tr>
<tr>
<td>SCS</td>
<td>0.460</td>
<td>0.281</td>
<td>1.637</td>
<td>0.084</td>
<td>0.555</td>
<td>0.151</td>
</tr>
<tr>
<td>IIP-32</td>
<td>0.102</td>
<td>0.283</td>
<td>0.360</td>
<td>0.664</td>
<td>0.559</td>
<td>1.188</td>
</tr>
<tr>
<td>ECR-R (avoidance)</td>
<td>-0.267</td>
<td>0.287</td>
<td>-0.930</td>
<td>-0.982</td>
<td>0.566</td>
<td>-1.735</td>
</tr>
<tr>
<td>ECR-R (anxiety)</td>
<td>-0.190</td>
<td>0.287</td>
<td>-0.662</td>
<td>-0.817</td>
<td>0.566</td>
<td>-1.443</td>
</tr>
</tbody>
</table>

Table 9: Variance inflation factor (VIF) and tolerance statistics

<table>
<thead>
<tr>
<th></th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECR-R (avoidance)</td>
<td>.740</td>
<td>1.352</td>
</tr>
<tr>
<td>ECR-R (anxiety)</td>
<td>.791</td>
<td>1.264</td>
</tr>
<tr>
<td>IIP-32</td>
<td>.755</td>
<td>1.324</td>
</tr>
<tr>
<td>SCS</td>
<td>.906</td>
<td>1.104</td>
</tr>
<tr>
<td>Average VIF</td>
<td></td>
<td>1.261</td>
</tr>
</tbody>
</table>

Table 10: Results of regression analysis with depression as DV, controlling for anxiety

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Outcome variable</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECR-R (avoidance)</td>
<td>SCS</td>
<td>-0.10</td>
<td>0.05</td>
<td>-2.20</td>
<td>0.03*</td>
</tr>
<tr>
<td>ECR-R (avoidance)</td>
<td>IIP-32</td>
<td>4.79</td>
<td>1.50</td>
<td>3.19</td>
<td>0.00**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>HADS depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECR-R (avoidance)</td>
<td>0.38</td>
</tr>
<tr>
<td>SCS</td>
<td>-0.39</td>
</tr>
<tr>
<td>IIP-32</td>
<td>0.07</td>
</tr>
</tbody>
</table>

(Controlling for anxiety)

| ECR-R (avoidance)   | 0.08             | 0.41 | 0.19 | 0.85 |
| SCS                 | 0.55             | 1.00 | 0.55 | 0.58 |
| IIP-32              | 0.04             | 0.03 | 1.39 | 0.17 |

* p < 0.05; ** p < 0.01
Table 11: Bootstrapped indirect effects of mediators: depression

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Point estimate</th>
<th>SE</th>
<th>Bootstrapping BC 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Self-compassion</td>
<td>0.0390</td>
<td>0.1390</td>
<td>-0.1976</td>
</tr>
<tr>
<td>Interpersonal problems</td>
<td>0.3110</td>
<td>0.2032</td>
<td>0.0151</td>
</tr>
<tr>
<td>Total indirect effect</td>
<td>0.3500</td>
<td>0.2578</td>
<td>-0.0665</td>
</tr>
</tbody>
</table>

Controlling for anxiety

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Point estimate</th>
<th>SE</th>
<th>Bootstrapping BC 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Self-compassion</td>
<td>-0.0559</td>
<td>0.1256</td>
<td>-0.3494</td>
</tr>
<tr>
<td>Interpersonal problems</td>
<td>0.2024</td>
<td>0.1830</td>
<td>-0.0409</td>
</tr>
<tr>
<td>Total indirect effect</td>
<td>0.1465</td>
<td>0.2344</td>
<td>-0.2313</td>
</tr>
</tbody>
</table>