Developing Self-Compassion

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UCL Doctorate in Clinical Psychology

Thesis declaration

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature: 

Name: Clare Northover

Date: 18/06/21

Overview

The aim of this thesis was to build on existing research into the development of self-compassion. It is presented in three parts.

Part 1: Systematic review. A review of 24 research papers assessing whether self-compassion is a key mediating link between attachment and psychological health. Evidence was found to support the mediating role of self-compassion (either fully or partially) between attachment and four areas of interest: emotional distress and associated behaviours, well-being and quality of life, relationships and inter/intra-personal relating, and adjustment to external factors. The methodological issues of this type of research are discussed and the gaps in the model are outlined to help direct future research.

Part 2: Empirical paper. A research paper assessing the efficacy and feasibility of a newly designed online self-compassion training programme aimed at the general public. We found that, compared to the control group, completing the intervention led to statistically significant increases in self-compassion and well-being and significant decreases in uncompassionate attitude towards self, shame, self-criticism, depression, anxiety, stress, levels of fear of compassion and attachment avoidance and anxiety. These effects remained at a one month follow up. This research was conducted with another UCL Clinical Psychology Doctorate student (Deacon, 2021) as part of a joint project.

Part 3: Critical appraisal. A reflection and appraisal of conducting research on compassion, focusing on three main topics: methods of measurement, reflections on my experience of conducting the project and wider ethical implications.

Impact Statement

The potential impact of this thesis can be seen across three key domains: academic, clinical and societal.

Academic. The findings from the systematic review provide support for a promising theoretical model of the pathway from attachment to a wide range of psychological outcomes. It will also guide future research as it has helped point out the gaps in the model which still need addressing, i.e., the need to differentiate between the dimensions of self-compassion and attachment, to provide evidence of causation and to determine other possible mediators/confounding variables.

The empirical paper has contributed to the understanding of how online self-compassion interventions can improve the mental well-being of the general public. It has also highlighted areas for further research and development e.g., to encourage engagement and improve accessibility.

The critical appraisal has drawn attention to the importance of discussing the ethical considerations when developing interventions, in the hope of encouraging researchers and clinicians studying compassion to continue the conversation on the use of religious concepts and techniques.

Both the systematic review and the empirical paper will be submitted for publication in peer-reviewed journals to aid dissemination to a wider academic audience.

Clinical. The thesis will hopefully guide the development and use of compassion-based interventions. The findings of the systematic review support the use of self-compassion interventions for individuals displaying attachment insecurity, and the results from the empirical paper support previous research demonstrating that self-compassion is a skill that

can be taught with a wide range of clinical benefits. The promising findings support the use of online interventions to help reduce the burden on mental health services, as well as providing an increased opportunity for a more diverse population to access support.

Societal. The wide range of outcome measures found in the systematic review and the positive results shown in the empirical paper shine light on the diversity of possible benefits of developing self-compassion. The thesis, therefore, supports the importance of cultivating self-compassion in everyday life and of not just reserving interventions for clinical populations. In line with this and based on the positive results of the empirical paper, the self-compassion intervention will be made available online to be accessed by the general public.

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Thank you to my research partner Jack. It was an absolute pleasure to complete the project with someone so calm, reliable, and hard-working. Many thanks also to Dr Zoe Tweedale and Dr Michelle Wilson for their invaluable advice and guidance during the development of both projects.

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Last but not least, I would like to say thank you to all of the individuals who took part in this study. This research would not, of course, have been possible without them, and I hope that it provided those who took part some solace during a particularly difficult time.

Part One

Systematic Literature Review

"Exploring the mediating role of self-compassion in the relation between attachment and psychological health and well-being."

Abstract

Aim

There is a vast evidence base highlighting the importance of attachment development on psychological functioning and well-being. However, less is known about the underlying processes by which attachment impacts on these factors. This review aimed to collate and evaluate the literature assessing whether self-compassion is a key mediating link between attachment and psychological health.

Method

A systematic review and a narrative synthesis were conducted for studies investigating self-compassion as a mediating variable between attachment and a third outcome variable. The databases PsycINFO and OvidMedLine were searched up until 15th July 2020 and this identified 656 papers (four more papers were added when the search was reconducted on the 15th May 2021). Twenty-four papers in total met inclusion criteria for the review.

Results

All studies found used correlational data and 23 of the 24 studies used a cross-sectional design. The studies all used the same measure of self-compassion but varied in the type of attachment assessed. The outcome measures assessed fell into four main categories: emotional distress and associated behaviours, well-being and quality of life, relationships and inter/intra-personal relating and adjustment to external factors. There was evidence for self-compassion mediating (either fully or partially) the relationship between attachment and all four areas.

Conclusion

This review found supporting evidence for the theoretical understanding of self-compassion as a mediator in the pathway between attachment and a variety of psychological outcomes. Due to methodological issues, however, these relationships remain hypothetical and further longitudinal research is now needed to address the issue of temporality and confirm causation. Despite this, the review supports the use of interventions aimed at increasing self-compassion.

Introduction

Attachment

"Attachment" refers to the deep and enduring affectional bond between an individual and an attachment figure. This can be between two adults, but attachment theory suggests that, in infancy, a child will attempt to attach to a caregiver instinctively for the purpose of survival (Ainsworth, 1973; Bowlby, 1969). It is thought that a child needs to develop an attachment with at least one primary caregiver for normal social and emotional development (ibid).

Bowlby (1982) proposed that we develop a trait-like sense of attachment security when our attachment figures routinely respond sensitively to our needs and provide us with support and care. Through these experiences with an attachment figure, we start to create and store mental representations of the self, others and the world, referred to as "internal working models" (Bowlby, 1973). It is thought that these models will then shape our expectations of others and how we perceive the interactions within our relationships. These models are also thought to teach us how to relate to ourselves; shaping how we react to threats and how we regulate negative emotions. It is thought that if an individual routinely experiences others as unavailable or rejecting, they may become chronically "insecure" with regard to close relationships and may adopt an insecure attachment style (Ein-Dor et al., 2016).

A secure attachment has been linked to the development of psychological health and well-being (Kafetsios & Sideridis, 2006; Mikulincer & Shaver, 2007; van Ijzendoorn & Bakermans-Kranenburg, 1996), whereas an insecure attachment has been linked to psychopathology (Ein-Dor et al., 2016). It is thought that if the development of a secure, stable mental foundation is interfered with then it reduces resilience in coping with stressful life events and threats to self. Due to this, attachment insecurity is viewed as a general vulnerability to impaired mental health with the symptomatology depending on other factors,

such as genetic, developmental and environmental (Mikulincer & Shaver, 2007). Attachment theory offers a compelling framework for a better understanding of individual differences in psychological health and well-being, but less is known about the potential processes underlying this.

Self-compassion

Mediation analyses can be used to better understand a known relationship by exploring the underlying process or mechanism by which one variable influences another through a mediator variable (Cohen et al., 2013). One potential mediator that may underlie the relationship between attachment and psychological health and well-being is self-compassion. Self-compassion is the ability to contain one's feelings of suffering with a sense of warmth, connection, and concern. One of the most commonly used definitions of compassion within the scientific literature considers it to comprise of three components: self-kindness, a sense of common humanity and mindfulness (Neff, 2003b).

Over the past 20 years, self-compassion has received increased research attention. This is due to the promising protective function of self-compassion, with evidence indicating that this trait is positively related to various indications of personal well-being (e.g. Zessin et al., 2015) coping mechanisms (e.g., Ewert et al., 2021) and self-efficacy (Liao et al., 2021) and negatively associated with symptoms of psychopathology (please see MacBeth & Gumley, 2012 for a review). Although most studies have focused on the relevance of self-compassion within a clinical psychology context, there is now also increased interest in investigating the trait as a positive psychological characteristic in other contexts, such as physical health (e.g., Brown et al., 2020; Phillips & Hine, 2021), occupational (e.g. Dev et al., 2020), and medical settings (e.g., cancer, chronic pain, HIV; Abdollahi et al., 2020; Edwards et al., 2019; Skelton et al., 2020).

The mediating pathway

From an evolutionary perspective, it has been proposed that self-compassion is developed through secure attachment relationships (Gilbert & Procter, 2006; Neff & McGehee, 2010). Gilbert suggests that we have a "soothing" motivational system which is designed to regulate our negative emotions through attuning to the feelings of self and others, as well as expressing and communicating our feelings of warmth and safeness (e.g. Spikins et al., 2010). If an infant does not experience the important environmental (e.g. safety and security) and parental behaviours (e.g. warmth, care, availability, consistency) it needs, then the soothing-motivational system will be underdeveloped and instead the "threat system" becomes over-elaborated. Importantly, Gilbert (2005) proposes that self-compassion deactivates the threat system and activates the self-soothing system as it elicits the same neurological systems (oxytocin and opiate) associated with receiving care, warmth and security from others.

It is thought that individuals with a secure attachment will internalise this relationship with their caregiver and are then able to develop a "secure" way of relating to themselves. In contrast, individuals with an anxious or avoidant attachment style are predisposed to developing an anxious or avoidant way of relating to themselves (Fonagy, 1999). An insecure attachment will also lead to the development of negative schemas of self and other, for example, the self as unacceptable or unworthy and others as unreliable and hostile (Baldwin, 1992; Mikulincer & Shaver, 2007).

In support of this developmental perspective, research has shown that recollections of parental rejection later in adulthood predict low self-compassion, while recollections of parental warmth have been shown to predict high self-compassion (Pepping et al., 2015). Self-compassion has also been shown to be associated with maternal support and healthy

family functioning among adolescents (Neff & McGehee, 2010), while low self-compassion has been shown to be associated with childhood maltreatment, which in turn has been found to predict poor mental health outcomes among adolescents and young adults (Tanaka et al., 2011). There is also some promising experimental research to support the link between self-compassion and attachment, with one study showing that participants who underwent training designed to enhance attachment security reported significant increases in self-compassion (Pepping et al., 2015).

Developing an understanding of the mechanisms by which attachment difficulties may lead to problems in psychological health can assist in informing and advancing the development of interventions. This review aims to collate and evaluate the literature assessing whether self-compassion is a key mediating link between attachment and psychological functioning and well-being. Figure 1 illustrates the potential pathways from attachment to the outcome variable directly or via a mediator.

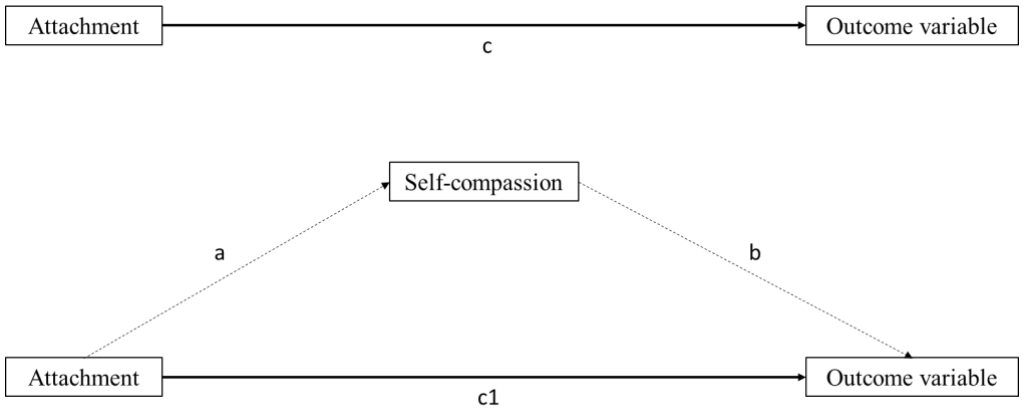


Figure 1. Prototypical case of self-compassion as a mediating variable on the path from attachment to an outcome variable. Path c: Total effect of attachment on the outcome variable. Path c1: Direct effect of attachment on the outcome variable. Path ab: Indirect (mediated) effect of attachment on the outcome variable via self-compassion.

Method

Search strategy

The electronic databases PsycINFO and OvidMedLine were searched up until 15th July 2020. Both databases were searched using two groups of search terms (please see table 1). The search terms were linked by the 'OR' function' and the two groups were linked by the 'AND' function. The reference lists of the final papers were then searched to check for any papers that may have not been picked up in the electronic searches. The search was reconducted on the 15th May 2021 to see if there had been any further publications since the original search.

Table 1. Search terms

Self-compassion	Attachment
Self-compassion*	Attach*
Compassion*	"Emotional bond"
Compassion-Focused Therap*	"Parental bond"

*=*truncation*

Study selection

Studies were included in the review if they met the requirements of the following eligibility criteria.

Eligibility criteria:

- Published in English.
- Published in a peer reviewed journal.
- Quantitative analysis using a correlational design.
- Included a measure of self-compassion.
- Included a measure of attachment.
- Included at least one more variable as an outcome measure.
- Included a mediation analysis to determine whether self-compassion mediated the link between attachment and the outcome variable.

There were no content-related restrictions with regards to what might or might not be a reasonable outcome variable, and there were no time or language restrictions.

A summary of the study selection process is outlined in Figure 2.

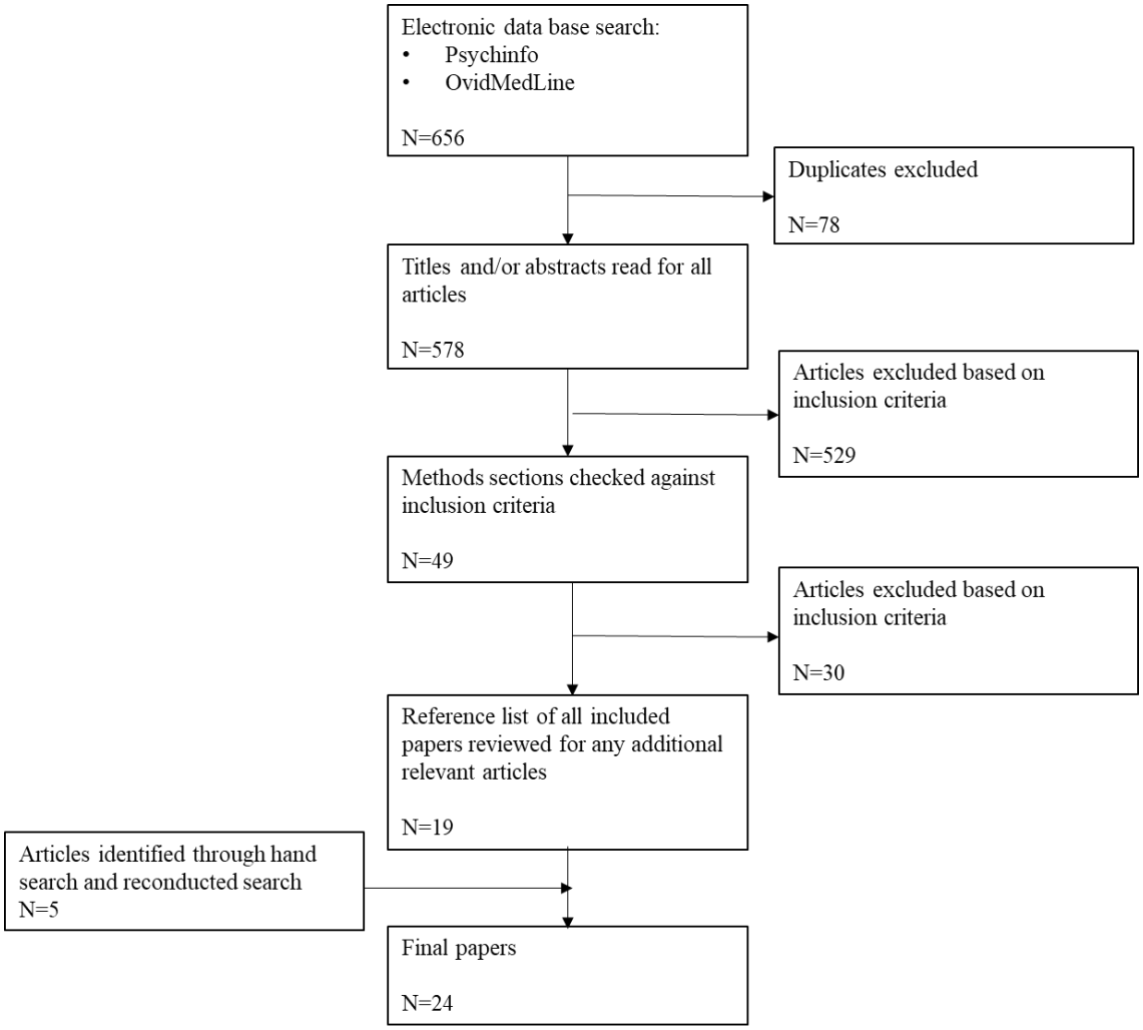


Figure 2. A summary of the study selection process

Criteria for assessment of study quality

The assessment of study quality reflects to what extent a study has taken appropriate action to minimize bias and error from the initial aims and design to the findings and conclusions drawn (Khan et al., 2011). The first quality appraisal checklist specifically created for psychology research was recently created by Protogerou & Hagger using an expert-consensus method. The Quality of Survey Studies in Psychology (Q-SSP; Protogerou & Hagger, 2020) is a twenty-item checklist designed to assess the quality of studies using survey designs.

As the aim of this review was to look at studies using a mediation analysis it was also important to pay attention to the quality of this in the papers chosen. Lee et al., (2015) adapted a version of a quality assessment tool that was designed for treatment mediation studies (Mansell et al., 2013) to be more suitable for mediation studies using an observational design.

For the purposes of this review, I have combined these two tools, omitted overlapping items and streamlined the questions. I have then gone through the questions when assessing each paper and have answered these with either a "yes" or a "no". I have chosen to not use a scoring system but have instead considered and narratively described the quality of the papers (in line with Whibley et al., 2019). This is because the different items are likely to have varying levels of significance but there is no clear objective guide of how to gauge the weight of each item to provide an overall quality score (Whiting et al., 2005). Please see Table 2 for an outline of the quality assessment items used.

Table 2. Quality Assessment Criteria

Item number	
1	Were participant inclusion criteria stated?
2	Was the participant recruitment strategy described?
3	Was a justification/rationale for the sample size provided, i.e., did they report a power calculation?
4	Was the attrition rate provided?
5	Was a method of treating attrition provided?
6	Did the study cite a theoretical framework? Was there a model?
7	Was information provided about the context (e.g., place) of data collection?
8	Was information provided about the duration (or start and end date) of data collection?
9	Was the study sample described in terms of key demographic characteristics?
10	Were the psychometric characteristics of the mediator and outcome variables reported? (Computed from the present study or a reference provided)
11	Were statistically appropriate/acceptable methods of data analysis used?
12	Did the study ascertain whether changes in the mediating variable preceded changes in the outcome variable?
13	Did the study ascertain whether changes in the predictor variable preceded changes in the mediator variable?
14	Did the study control for possible confounding factors (e.g., baseline values)?
15	Was discussion of findings confined to the population from which the sample was drawn?

Results

Study Characteristics

Studies were published between 2010 and 2021 and were conducted in the USA (10 studies), Europe (seven studies), East Asia (two studies), Turkey and the Middle East (four studies), India (one study) and Australia (one study). Twenty-three out of 24 of the studies used a cross-sectional design and one study used a short-term longitudinal design. Most studies used adult populations, although two studies included a sample of adolescents (below the age of 18) and two studies looked at parent-child dyads. Just over half of the studies used a student population (13 studies) and only one study used a clinical population (patients with anxiety and depression), although another study recruited participants from an online breast cancer support network. Sample sizes ranged from 74 to 2,253 with a total of 10,691 and mean average of 423. Across the studies 62% of participants were women and, of the studies that reported ethnicity, 68% were Caucasian with 17 of the studies having taken place in westernised countries. Please see Table 3 for a summary of the study characteristics.

Table 3. Study characteristics

Authors	Country	N	Sample	Age Mean (SD)	Gender	Ethnicity	Attrition rate and missing data
Arambasic, Sherman & Elder, 2019	Australia	82	Breast Cancer Network	58.46 (8.77)	Female=100%	nr	14.8% response rate, 27 deleted due to missing data
Amani & Khosroshahi, 2020	Iran	600	Three hundred married couples	29.6 (nr)	Female=50% Male=50%	nr	nr
Beduna & Perrone-McGovern, 2019	USA	322	College students	20.68 (1.84)	Female=76.40% Male=22.05% Trans male=.93% Agender=.6%	Caucasian= 83.50% African American/Black=8.40% Latinx/Hispanic=3.70% Biracial=2.48% Asian=.60% Middle Eastern=.60% Native American=.30%	nr
Bolt, Jones, Rudaz, Ledermann & Irons, 2019	UK & USA	342	Individuals in a romantic relationship	27.1 (8.8)	Female=62.6% Male=37.4%	White=70.8% Black=7.9% Asian=8.5% Mixed=5.0% Other=7.6%	37.5% completed
Brophy, Brähler, Hinz, Schmidt & Körner, 2020	Germany	2,253	General adult population	50.32 (17.27)	Female=53.4% Male = 46.6%	nr	nr

Bugay-Sökmez, Manuoğlu, Coşkun, & Sümer, 2021	Turkey	510	University students	21.8 (2.29)	Female =57.3% Male=42.7%	nr	nr
Holt, 2014	USA	204	First-year students	18.1 (0.60)	Female=58% Male=42%	Caucasian =70% Asian/Asian American =11% Black/African American=7% Hispanic/Latino 8% Other = 4%	74% completed both sets of questionnaires
Homan, 2018	USA	126	Community-dwelling older adults	70.40 (8.14)	Female=70.63% Male=29.37%	Caucasian=100%	missing values comprised less than 5% on any single variable
Homan, 2014	USA	181	(124 from MTurk and 57 from the undergraduate institution)	28.49 (9.20)	Female=27% Male=73%	White=78.2% African American=6.7% Asian American=7.8% Latin American=5.7% Native American=1.0% Multiracial=2.1%	163 removed from Mturk sample (as chose to not complete AGI) and 5 deleted due to missing data.
Jiang, You, Zheng, Lin, 2017	China	658	Secondary school students	13.58 (1.04)	Female=41% Male=59.9%	nr	1 student absent on the assessment day and 1 did not complete the questionnaires.

Joeng, Turner, Kim, Choi, Lee & Kim, 2017	Korea	473	College students	25.26 (3.78)	Female=39% Male=61%	nr	nr
Mackintosh, Power, Schwannauer, Chan, 2018	UK	74	Clinical patients with anxiety and depression.	40.3 (12.0)	Female=59.5% Male=35.1%	White British = 93.2% White other = 4.1% Asian British = 1.4% Missing = 1.4%	55% completion rate
Moreira, Gouveia & Canavarro, 2018	Portugal	563	Parent-child dyads	Adolescents =14.26 (1.66).	Female=61.5% Male=38.5%	nr	Less than 1% missing values
Moreira, Carona, Silva, Nunes & Canavarro, 2016	Portugal	290	Mothers	41.66 (5.42)	Female=100%	nr	63.86% completed the questionnaires
Moreira, Gouveia, Carona, Silva, Canavarro, 2015	Portugal	171	Parent-child dyads	Mothers 40.76 (5.36) Children 10.56 (2.61)	Females=50.3% Males=49.7 %	nr	77.18 % completed the questionnaires
Murray, Jacobs, Rock, & Clark, 2021	UK	148	General public and first year psychology students	24.62 (13.46)	Female=72.3% Male=27.7%	nr	90.85% completion rate

Neff & McGehee, 2010	USA	480	Private school and college students	Adolescents = 15.2 (range 14–17) Adults = 21.1 (range 19–24)	Adolescents: Female=52% Male=48% Adults: Female=57% Male= 43%	Adolescents: Caucasian=79% Hispanic=7% Asian=1% mixed/other=13% Young adults: were 68% Caucasian=68% Hispanic=9% 17% Asian=17% mixed/other=7%	nr
Øverup, McLean, Brunson & Coffman, 2017	USA	370	University students	22.31 (5.24)	Female=77.57% Male=22.43%	Hispanic=26% Asian/Pacific Islander=25% Caucasian=25% African American/Black=15% Middle Eastern=4% Multi-racial or other=7%	123 out of 493 failed to correctly complete all 4 check questions and so deleted.
Raque-Bogdan, Ericson, Jackson, Martin & Bryan, 2011	USA	208	College students	20 (1.6)	Female=73.56% Male=21.15% Not reported=5.29%	European Americans=67.79% African Americans=11.06% Asians=9.13% Latino/as=6.25% other=3.85% not reported=1.92%	nr

Raque-Bogdan, Piontkowski, Hui, Ziemer & Garriott, 2016	USA	1306	First-year college women from a Mid-Atlantic University	18.73 (2.77)	Female=100%	White=50.2% Asian=14.9% Black/African=16.4% Latina=5.1% American Indian/Alaska Native=0.5% Hawaiian=0.4% biracial/multi-racial=12.6%	Response rate = 83%, Missing data=1.5%
Reizer, 2019	Israel	202	Service-sector employees	27.93 (9.12)	Female=73% Male=27%	nr	81% response rate
Sebastian, 2018	India	397	Married individuals	33.07 (4.74)	Female=52% Male=48%	nr	nr
Valikhani, Abbasi, Radman, Goodarzi & Moustafa, 2018	Iran	400	Students	24.75 (3.74)	Female=48.25% Males=49.75% Missing data=2%	nr	nr
Wei, Liao, Ku & Shaffer, 2011 - study 1	USA	195	College students who were currently or had been in a committed relationship.	20.07 (2.77)	Female=55% Male=44% Unreported=1~~%~~	Caucasians=95.4 African Americans=1.0% Asian Americans=1.0 Hispanic Americans=1.0% International students=1.0% multiracial Americans=0.5%	nr

Wei, Liao, Ku & Shaffer, 2011 - study 2	USA	136	Community adult sample	43.44 (10.22)	Female=43% Male=57%	Caucasian=83% African American=5.1% Asian American=2.9% Native American=2.2% Latino/a American=1.4% multiracial American=1.4% unreported=5.15%	nr

Please note: nr=not reported

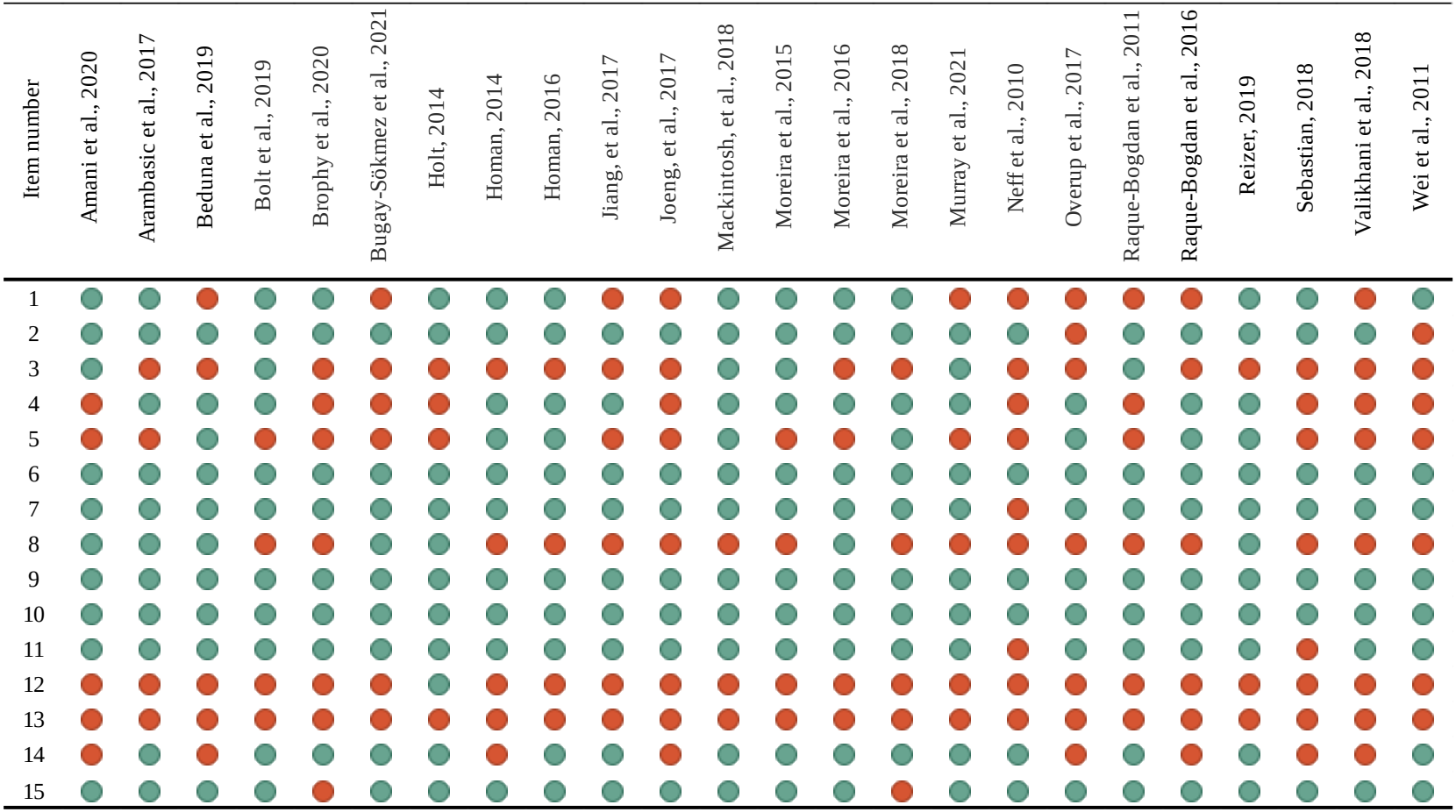
Quality Assessment

Results from an appraisal of the methodological quality of the final studies are presented in Table 4. The majority of the studies outlined the participant recruitment strategy (22 studies) but only just over half clearly outlined the inclusion criteria (14 studies). Although sample sizes were generally large, only six studies justified the sample size used with a power calculation (or discussed power at all). Fourteen of the studies discussed attrition rate and other reasons for missing data but only eight of these studies discussed a method for overcoming this. All of the studies explicitly stated theoretically based hypotheses or had a specific model to test, and they all used appropriate statistical methods for assessing their hypothesis. Furthermore, 18 of the studies used the bootstrapping method which allows for resampling while requiring fewer assumptions, providing a higher study power, and lowering the risk of falsely rejecting the null hypothesis (Abu-Bader & Jones, 2021).

Most of the studies (23) provided information about the context of data collection but only seven studies provided the duration. All of the studies provided key demographic characteristics of their samples (although this varied in detail) as well as the psychometric properties of their measures used. Sixteen of the studies thought about possible confounding variables; however, those that did varied greatly in how many variables were investigated, with half of these only looking at age and/or gender. Only two of the studies failed to discuss their results within the confined demographics of their samples.

Twenty three out of the 24 studies were cross-sectional in design. This means that they were unable to determine temporality, making the results from the mediation analysis speculative. The one study that used a short-term longitudinal design was able to determine whether changes in the mediating variable preceded changes in the outcome variable but not whether changes in the predictor variable preceded changes in the mediator variable.

Table 4. Appraisal of methodological quality



Please see Table 2 for the items. Green circles represent a "yes", that the paper fulfilled the criteria, and red circles represent a "no", that the paper did not fulfil the criteria.

Measures of attachment

The studies varied in their chosen measures of attachment, although all chose a self-reported format. Thirteen of the studies assessed attachment style in general close relationships, whereas six studies assessed attachment to a parent or caregiver, six studies assessed attachment to a romantic partner, two studies assessed attachment to peers and one study looked at attachment to God. There is increasing evidence to support the idea that God can function as an attachment figure and that, although symbolic, this attachment can hold many of the same psychological benefits as the attachment to a human caregiver (Granqvist et al., 2021; Granqvist & Kirkpatrick, 2013; Homan, 2014; Kirkpatrick, 2012). It was decided, therefore, that this study would be included in the analyses.

Sixteen out of the 24 papers used a version of Brennan et al.'s (1998) Experiences in Close Relationships Scale (ECR) to assess attachment style. This measures attachment continuously along two dimensions, attachment anxiety and attachment avoidance, although one study combined these dimensions and reversed them to make a total "secure attachment" score. One other study also looked at attachment using these two dimensions but was interested in attachment to God (The Attachment to God Inventory, AGI; Beck & McDonald, 2004).

Four other studies also looked at a total score of either "secure attachment" or "insecure attachment" but using different measures (Attachment Style Questionnaire - Collins & Read, 1990; Inventory of Parent and Peer Attachment - Armsden & Greenberg, 1987; the Attachment to Parents scale of the Portuguese self-report version of the People in My Life questionnaire - Ridenour et al., 2006; The Revised Adult Attachment Scale - Collins, 1996).

The two remaining studies used different forms of categorisation. One study also used the Inventory of Parent and Peer Attachment scale but broke it down into its three subscales: closeness, communication and trust. The other study used the Relationship Questionnaire

(Bartholomew & Horowitz, 1991) which categorizes people's attachment into four distinct styles: secure, preoccupied, fearful and dismissing.

Measures of self-compassion

All the papers included in this review chose a version of Neff's (2003a) Self-Compassion Scale (SCS) to measure self-compassion. Fifteen studies used the Self-Compassion Scale (SCS; Neff, 2003b) and nine used its shorter counterpart, the Self-Compassion Scale Short Form (SCS-SF; Raes et al., 2011). Ten of the studies used a version of the measure translated into another language and referenced supporting evidence for its reliability.

The original 26-item self-report measure consists of six subscales: self-kindness (five items), self-judgment (five items), common humanity (four items), isolation (four items), mindfulness (four items), and overidentification (four items). The items are rated on a 5-point Likert-type scale, ranging from 1 (almost never) to 5 (almost always). Confirmatory factor analysis of the shorter version of the scale supported the same six-factor structure as found in the long form, as well as a single higher-order factor of self-compassion (Raes et al., 2011).

Questions have been raised about the factor structures and whether it is valid to treat self-compassion as a single construct (e.g. Muris & Otgaar, 2020). The main opposing argument is founded on evidence which suggests that the items create a better fit on a two-factor structure, with one factor loaded with all positively worded items and a separate factor loaded with all negatively worded items (Muris et al., 2016; Phillips & Ferguson, 2013; Williams et al., 2014). However, Neff has argued for the use of the total score and has provided further psychometric and conceptual support for this (Neff, 2016; Neff, 2020), and most of the existing research on self-compassion uses the overall score (Homan, 2014).

Outcome measures

The studies looked at a variety of outcomes measures, which highlights the broad theoretical understanding of the effects of attachment on development. Please see Table 5 for a summary of the measures used. Across the 24 studies, 46 different outcome variables were investigated. There were four main themes of interest: emotional distress and associated behaviours, well-being and quality of life, relationships and inter/intra-personal relating and adjustment to external factors. The results of the studies will be presented in these four categories to aid clarity.

Table 5. Measures and methods of analysis

Authors	Measure of self-compassion	Measure of attachment	Outcome measure	Potential covariates	Method of analysis
Arambasic et al., 2019	SCS-26 items	ECR-36 items. General relationships	**The Impact of Cancer (IOC)** - Negative Impact Summary scale of the Impact of Cancer scale (version 2; Crespi et al., 2008) **Stress -** Stress scale of the Depression, Anxiety, and Stress Scale (Lovibond & Lovibond, 1995)	Perceived physical health, age, marital status, country of birth, education, household income, employment status, self-reported medical characteristics of cancer	Bootstrap analysis (5000 samples) using the ordinary least squares regression method.
Amani & Khosroshahi, 2020	SCS-12 items (translated to Iranian)	Attachment Style Questionnaire (ASQ) General relationships	**Marital Quality –** Marital Quality Scale (Busby et al., 1995)	nr	Structural equation modelling and the Sobel test
Beduna et al., 2019	SCS-12 items	ECR-12 item. General relationships	**Shame -** The Internalized Shame Scale (ISS; Cook, 1987)	nr	Structural equation modelling
Bolt et al., 2019	SCS-12 items	ECR-12 items. Romantic relationships	**Relationship Quality -** Partner Behaviours as Social Context (PBSC) scale (Ducat & Zimmer-Gembeck, 2010) **Relationship Satisfaction -** Couples Satisfaction Index-16 (CSI-16; Funk & Rogge, 2007)	Gender	Bootstrap analysis (5,000 samples) using the PROCESS macro for SPSS

Brophy et al., 2020	SCS-26 items (translated to German)	AAS-18 items (German version). General relationships	**Depression -** German version of the Beck depression inventory – fast screen (BDI-FS; Kliem et al., 2014) **Quality of Life (QoL) -** European organization for research and treatment of cancer quality of life questionnaire (EORTC QLQ-C30; Hinz et al., 2014)	Age, gender, socioeconomic status, and relationship status	Bootstrap analysis (10,000 samples) using PROCESS macro (v3.3) for SPSS (95% bias-corrected confidence intervals)
Bugay-Sökmez et al.,2021	SCS-12 items (translated to Turkish)	ECR-10 items (Turkish version) General relationships	**Rumination -** Rumination Scale (Nolen-Hoeksema & Morrow, 1991; translated into Turkish by Erdur, 2002). **Co-Rumination -** Co-Rumination Questionnaire (Rose, 2002; translated into Turkish by Bugay & Erdur-Baker, 2015).	Gender	Process macro and bootstrapping method (95% confidence intervals and 5,000 samples)
Holt, 2014	SCS-12 items	IPPA Relationship with primary caregiver	**Personal/Emotional Adjustment -** subscale from the 67-item Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989)	Gender	Bias-corrected bootstrap resampling (10,000 samples and 95% confidence intervals)
Homan, 2018	SCS-12 items	ECR-36 items. General relationships	**Eudaimonic Well-being -** Scales of Psychological Well-Being (SPWB; Ryff, 1989)	Age, level of education, and self-rated health, relationship status	Bias- corrected bootstrap analysis (5,000 samples, 95% confidence intervals) using the MEDIATE macro for SPSS
Homan, 2014	SCS-12 items	The Attachment to God Inventory (AGI) Relationship with God	**Life Satisfaction -** The Satisfaction with Life Scale (Diener et al., 1985) **Depression and Anxiety -** The depression and anxiety subscales of the Depression Anxiety and Stress Scale-Short Form (DASS; Lovibond & Lovibond, 1995)	nr	Bootstrap analysis (5,000 samples, 95% confidence intervals).

Jiang et al., 2017	SCS-26 items (translated to Chinese)	Inventory of Parent and Peer Attachment (IPPA-R). Relationships with mother father and peers	**Non-Suicidal Self-Injury (NSSI) -** "Have you engaged in self-injury, like cutting, burning, and banging, without the intent to die in the past year?"	Age and gender	Bootstrapping method and the Sobel test (5,000 samples, 95% confidence intervals)
Joeng et al., 2017	SCS-26 items (translated to Korean)	ECR-36 items (Korean version). General relationships	**Depression -** The Korean version (Chon et al., 2001) of the Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977). **Anxiety -** The Korean version (Kim, 1978) of the State-Trait Anxiety Inventory (Spielberger et al., 1970)	nr	Structural equation modelling (using two step approach) and bootstrap approach (1000 samples) using user defined estimands.
Mackintosh et al., 2018	SCS-26 items	ECR-36 items. Romantic relationships	**Depression and Anxiety -** The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983)	Age	Bootstrapping method (5000 resamples and 95% confidence intervals).
Moreira et al., 2018	SCS-12 items (translated to Portuguese)	People in My Life questionnaire (PIML). Relationship with parents	**Adolescents Wellbeing -** Portuguese self-report version of the KIDSCREEN-10 index (Matos et al., 2012; Ravens-Sieberer et al., 2010)	The parents' education, adolescents' age and gender, type of participation, parents' marital status, number of children, and area of residence	Bootstrap resampling procedures with (2000 samples and a 90% bias-corrected confidence interval).

Moreira et al., 2016	SCS-26 items (translated to Portuguese)	ECR-RS- 9 items. Relationship with mother	**Mindful Parenting -** The Portuguese version of the Interpersonal Mindfulness in Parenting Scale (IM-P; Duncan, 2007; Moreira & Canavarro, 2015)	Mother's age, education, marital status, and number of children	Bootstrap resampling procedures (2000 samples and a 95% bias-corrected confidence interval)
Moreira et al., 2015	SCS-26 items (translated to Portuguese)	ECR-RS- 9 items. Relationship with mother	**Child's Quality of Life (QoL) -** Portuguese self-report version of the KIDSCREEN-10 index (Matos et al., 2012; Ravens-Sieberer et al., 2010)	Children's age and sex, mother's age, education, and marital status	Bootstrap procedure (10,000 resamples and 95% bias-corrected and accelerated confidence intervals
Murray et al., 2021	SCS-26 items	ECR-R-36 items Romantic relationships	**Depression –** Depression subscale of the Depression, Anxiety and Stress Scale – 21 items (DASS-21; Lovibond & Lovibond, 1995).	The association between attachment anxiety and avoidance	Process macro (v 3.5). Bootstrapping method with 95% confidence intervals and 10,000 samples.
Neff & McGehee, 2010	SCS- 26 items	The Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991). General relationships	**Depression -** Beck Depression Inventory - 21 items (BDI; Beck & Steer, 1987) **Anxiety -** State-Trait Anxiety Inventory – Trait form - 20 item (Spielberger et al., 1970) **Connectedness -** The Social Connectedness Scale - 8 item (Lee & Robbins, 1995)	Age and sex	Sobel tests of mediation

Øverup et al., 2017	SCS-12 items	ECR-R-36 items. General relationships	**Depression (BDI) -** Beck Depression Inventory (Beck et al., 1996) **Depression (MDI)** - Major Depression Inventory (Bech et al., 2001)	nr	a*b product term approach (MacKinnon et al., 2002), as well as bootstrapped approach (bias-corrected 95% asymmetric confidence intervals)
Raque-Bogdan et al., 2011	SCS 26-items	ECR-R-36 items. Romantic relationships	**Physical and Mental Health -** The Medical Outcomes Short Form Version 2 Health Survey (SF-12v2; Ware et al., 1996)	Age and gender	The indirect effects were calculated by multiplying the 10,000 pairs of path coefficients using Shrout and Bolger's (2002) criteria (95% confidence interval and 10,000 indirect effects estimates)
Raque-Bogdan et al., 2016	SCS 26-items	ECR-RS- 9 items. Maternal, romantic and peer relationships	**Body Appreciation** - Body Appreciation Scale (BAS; Avalos et al., 2005).	nr	Bootstrap approach (5000 randomly calculated samples and a 95% biased corrected confidence interval in Mplus).

Reizer, 2019	SCS 26-items (translated)	ECR-16 items. General relationships	**Performance** - three items derived from the Health and Work-Performance Questionnaire (HPQ; Kessler et al., 2003, 2004) **Turnover Intentions -** an adapted version of Abrams et al.'s (1998) three item scale assessed **Organizational Citizenship Behaviors (OCB)** - was measured using eight items from Goodman and Svyantek's scale (1999). **Emotional exhaustion -** Maslach Burnout Inventory, as adapted for the occupational context (MBI-GS; Schaufeli, 1996	Age and gender	Structural equation modelling and bootstrapping analysis (5,000 samples and 95% confidence intervals).
Sebastian, 2018	SCS	ECR-R	**Marital satisfaction** – ENRICH Marital Satisfaction Scale (EMS; Fowers & Olson, 1993)	nr	"Robust Path Analysis" (Kock, 2012).
Valikhani et al., 2018	SCS-12 items (translated to Iranian)	R-AAS-18 items (translated to Iranian). General relationships.	**Depression, Anxiety and Stress** - Depression Anxiety Stress Scale-21 (Lovibond & Lovibond, 1995) translated and validated by Sahebi et al. (2005)	nr	Bootstrapping method with (5000 re-sampling of the original data with 95% bias-corrected bootstrapped confidence interval)

Wei et al., 2011	SCS-26 items	ECR- 36 items. General relationships	**Well-being** - conceptualised as a sum of the Oxford Happiness Questionnaire- 29 item (OHQ; Hills & Argyle, 2002) Satisfaction with Life Scale - 5 item (SWLS; Diener et al., 1985) Positive Affect (PA) and Negative Affect (NA) subscales from the Positive and Negative Affect Schedule - 20 items (PANAS; Watson et al., 1988)	nr	Bootstrap approach (1,000 samples and 95% confidence intervals)

**SCS = Self-Compassion Scale, ECR=Experience of Close Relationships, nr = not reported*

Emotional distress and associated behaviour

Four of the studies used a measure of anxiety as the outcome measure, two used a measure of stress and seven used a measure of depression. Additionally, two studies looked at associated harmful behaviours: rumination and non-suicidal self-injury (NSSI). Please see Table 6 for a summary of the findings.

Joeng et al. (2017), Mackintosh et al. (2018), Valikhani et al. (2018) and **Homan (2014)** all included a measure of anxiety and found that self-compassion significantly mediated the pathway from attachment to anxiety symptoms; however, none of the studies assessed potential confounding variables apart from **Mackintosh et al.** who controlled for age. **Joeng et al**. used a Korean student population whereas **Mackintosh et al.** used a British clinical population, but both found a partially mediated pathway for attachment avoidance. However, **Joeng et al** found a fully mediated pathway for attachment anxiety, suggesting no direct pathway from attachment anxiety to anxiety symptoms, whereas **Mackintosh et al.** found that attachment anxiety was not significantly related to anxiety symptoms.

Joeng et al.'s study looked at attachment in general close relationships, whereas **Mackintosh et al** specifically looked at romantic relationships. **Homan,** on the other hand, was interested in attachment to God. She found the opposite effect, that attachment anxiety had a significant direct effect, but attachment avoidance did not. **Valikhani et al.'s (2018)** study of Iranian students combined its attachment dimensions to create one variable, "insecure attachment", and found that this significantly predicted anxiety symptoms both directly and indirectly through self-compassion. However, they also measured self-knowledge, mindfulness and self-control as possible mediators and found that both self-knowledge and mindfulness were stronger mediators than self-compassion. The whole model together predicted 41% of the variance of anxiety.

All four studies also looked at depression symptoms. **Homan** and **Valikhani et al.** found the same pattern of results, but **Joeng et al.** found that both avoidant and anxious attachment dimensions were directly related to depression symptoms. Interestingly however, **Mackintosh et al.** found no relationship between either attachment dimensions or self-compassion with depression symptoms, measured using the HADS. **Øverup et al. (2017)** used two different types of depression measure (the BDI and MDI) in a non-clinical student population and found that self-compassion mediated the pathway between attachment anxiety and depression (using both measures) but that the mediated pathway for attachment avoidance was non-significant.

In support of **Øverup et al**.'s findings, **Murray et al. (2021)** also used a non-clinical student population, but this was the only study to control for the significant association between the two attachment dimensions. They assessed self-compassion and thought suppression (i.e. active attempts to inhibit unwanted thoughts) as mediators between attachment anxiety and attachment avoidance and depression. However, in their separate mediation analyses they controlled for the other attachment dimension. They found that thought suppression and self-compassion fully mediated the relationship between attachment avoidance and depression, but that this was no longer significant after controlling for attachment anxiety. In contrast, they found that the mediated pathway from attachment anxiety to depression remained significant even when controlling for attachment avoidance.

Using a much larger sample size (n=2,253), **Brophy et al. (2020)** broke self-compassion down into self-warmth and self-coldness. They found that higher levels of attachment anxiety and attachment avoidance predicted higher levels of depressive symptoms. This relationship was partially mediated through lower levels of self-warmth and higher levels of self-coldness. Although the effects of the mediating pathways through self-coldness and self-warmth were

both significantly different from zero, they found that for self-warmth this was of negligible magnitude.

The final variable **Valikhani et al. (2018)** looked at was stress. As with anxiety and depression, insecure attachment predicted stress directly and indirectly through the four measured mediating variables (self-knowledge, mindfulness, self-control and self-compassion). For anxiety and depression, self-compassion came out as one of the strongest mediators and for stress it was the strongest.

Rumination has been shown as a risk factor for emotional distress and **Bugay-Sökmez et al. (2021)** were interested in the concepts of rumination and co-rumination (i.e. repetitively sharing a problem with others). The authors highlight evidence (e.g. Treynor et al., 2003) supporting the notion that rumination is made up two main components: "reflection" (adaptive contemplation) and "brooding" (obsessive thought or pessimistic thinking). They found that self-compassion significantly mediated the relationship between attachment anxiety and brooding (but not attachment avoidance), whereas self-compassion moderated the relationship between attachment avoidance and reflection (but not attachment anxiety).

Lastly, **Jiang et al. (2017)** were interested in the contributing factors to non-suicidal self-injury in adolescents. Their study of Chinese students looked at attachment to mothers, fathers and peers all separately and also looked at three distinct elements of attachment: closeness, communication and trust. They found that those who had engaged in non-suicidal self-injury, compared to those who had not, differed significantly in mother attachment, father attachment, and self-compassion, but they did not differ in peer attachment. When they analysed the three dimensions of their attachment measure separately, they found that only mother and father closeness were significantly associated with self-compassion. For mothers, self-compassion fully mediated the relationships between closeness and non-suicidal self-

injury but for fathers, self-compassion partially mediated the relationship and father's closeness also showed a direct effect. For peer attachment, there was no direct effect between any of the dimensions and non-suicidal self-injury, but there was a significant fully mediated pathway through self-compassion between peer closeness and non-suicidal self-injury and peer communication and non-suicidal self-injury.

Summary

This section of the review demonstrated evidence to support the notion that self-compassion mediates, at least partly, the relationship between attachment and anxiety, depression, stress, rumination and NSSI. The results varied based on whether attachment and self-compassion were treated as one-dimensional or multi-dimensional constructs. Only one study looked at the positive and negative dimensions of self-compassion separately, but they found evidence to suggest that the negative traits may be the driving mediator for depression. The one study that controlled for the covariance of the two attachment dimensions found supporting evidence for the importance of controlling for this as only attachment anxiety was found to remain a significant predictor of depression after controlling for avoidance.

Table 6. Mediation analysis for emotional distress and associated behaviour variables

Reference	Model	Correlations / Beta			Mediation analysis		
		a	b	c	Beta	SE	CI (95%)
Anxiety							
Homan, 2014	Attachment Anxiety (God) - Self-compassion - Anxiety	−0.50** / -0.23**	−.38** / −0.12*	.40** / 0.07**	0.03	nr	[0.01, 0.05]
	Attachment Avoidance (God) - Self-compassion - Anxiety	−0.01 / −0.10*	−.38** / −0.12*	−0.03 / −0.01	0.01	nr	[0.00, 0.03]
Joeng et al., 2017	Attachment Anxiety (general) - Self-compassion - Anxiety	nr / -0.24**	nr / -0.77**	nr / 0.04	not reported but stated significant p<.01		
	Attachment Avoidance (general) - Self-compassion - Anxiety	nr / -0.30**	nr / -0.77**	nr / 0.10*			
Mackintosh et al., 2018	Attachment Anxiety (romantic) - Self-compassion - Anxiety	0.25* / nr	− 0.35* / nr	0.19 / nr	not reported because not significant		
	Attachment Avoidance (romantic) - Self-compassion - Anxiety	0.26* / -0.10*	−0.35* / -2.06*	0.32* / 0.65	0.21	0.12	[0.03, 0.50]
Valikhani et al., 2018	Insecure Attachment (general) - Self-compassion - Anxiety	-0.47** / -0.49**	-0.45** / -0.09*	0.49** / 0.43**	0.05	nr	[0.00, 0.09]
Stress							
Arambasic, et al., 2019	Attachment Anxiety (general) - Self-compassion -Stress	−0.62* / −1.96**	−0.39* / −0.64*	0.41* / 1.57*	0.86	0.46	[0.03, 1.81]
	Attachment Avoidance (general) - Self-compassion -Stress	−0.63* / −1.86**	−0.39* / −0.64*	0.36* / 0.39	1.19	0.06	[0.05, 0.29]
Valikhani et al., 2018	Insecure Attachment (general) - Self-compassion - Stress	-0.47** / -.049**	-0.53** / -0.25**	0.52** / 0.58**	0.12	nr	[0.07, 0.18]
Depression							
Brophy, et al., 2020	Attachment Anxiety (general) - Self-warmth -Depression	−0.09* / nr	−0.06* / nr	0.30* / **0.11****	**0.01**	nr	[0.01, 0.02]

Homan, 2014	Attachment Anxiety (general) - Self-coldness -Depression	0.47* / nr	0.41* / nr	0.30* / **0.11****	**0.17**	nr	[0.15, 0.20]
	Attachment Avoidance (general) -Self-warmth -Depression	−0.18* / nr	−0.06* / nr	0.31* / **0.11****	**0.02**	nr	[0.01, 0.03]
	Attachment Avoidance (general) -Self-coldness -Depression	0.40* / nr	0.41* / nr	0.31* / **0.11****	**0.15**	nr	[0.13, 0.17]
	Attachment Anxiety (God) - Self-compassion - Depression	−0.50** / 0.23**	−0.54** / −0.27**	45** / 0.09**	0.06	nr	[0.04, 0.09]
	Attachment Avoidance (God) - Self-compassion - Depression	−0.01 / −0.10*	−0.54** / −0.27**	0.10 / 0.02	0.03	nr	[0.01, 0.06]
Joeng et al., 2017	Attachment Anxiety (general) - Self-compassion - Depression	-0.24** / nr	-0.49** / nr	0.13* / nr	not reported but stated significant p<.01		
	Attachment Avoidance (general) - Self-compassion - Depression	-0.30** / nr	-0.49** / nr	0.22** / nr			
Murray et al., 2021	Attachment Avoidance (romantic) - Self-compassion - Depression	-0.23* / 0.02	-0.52* / -4.97**	0.27* / 1.08	-0.08	0.21	[-0.50, 0.37]
	Attachment Anxiety (romantic) - Self-compassion - Depression	-0.45* / 0-.20**	-0.52* /-4.97**	0.40* /1.26	1.0	0.34	[0.42, 0.67]
Mackintosh et al., 2018	Attachment Anxiety (romantic) - Self-compassion - HADS Depression	0.25* / nr	− 0.13 / nr	0.19 / nr	not tested as correlations not significant		
	Attachment Avoidance (romantic) - Self-compassion - HADS Depression	0.26* / nr	− 0.13 / nr	0.22 / nr			
Øverup et al., 2017	Attachment Anxiety (general) - Self-compassion - BDI	-0.51** / −0.26**	−0.58** / −0.21**	0.50** / 0.00	0.06	0.01	[0.03, 0.08]

Valikhani et al., 2018	Attachment Anxiety (general) - Self-compassion - MDI	-0.51** / −0.26**	−0.50** / −0.30**	0.46** / −0.02	0.08	0.02	[0.04, 0.13]
	Attachment Avoidance (general) - Self-compassion - BDI	−0.34** / 0.01	−0.58** / −0.21**	0.36** / 0.04	-0.003	0.01	[−0.01, 0.01]
	Attachment Avoidance (general) - Self-compassion - MDI	−0.34** / 0.01	−0.50** / −0.30**	0.32** / 0.09	−0.00	0.01	[−0.02, 0.01]
	Insecure Attachment (general) - Self-compassion - Depression	-0.47** / -0.49**	-0.57** / -0.33**	0.48** / 0.55**	0.16	nr	[0.10, 0.24]
Harmful behaviour							
Bugay-Sökmez et al., 2021	Attachment Anxiety (general) - Self-compassion – Rumination (brooding)	nr / **0.61****	nr / **-0.17****	nr / **0.10***	0.10	0.01	[0.07, 0.14]
Jiang et al., 2017	Mother Closeness - Self-compassion - NSSI	nr	nr	nr	-0.24	0.10	[–0.46, 0.09]
	Father Closeness - Self-compassion - NSSI	nr	nr	nr	-0.21	0.08	[–0.41, 0.08]
	Peer Communication - Self-compassion - NSSI	nr	nr	nr	-0.21	0.11	[–0.46, 0.03]
	Peer Closeness - Self-compassion - NSSI	nr	nr	nr	-0.32	0.09	[–0.55, 0.14]

*Please note: a = pathway from attachment to self-compassion, b = pathway from self-compassion to the outcome variable, c = pathway from attachment to the outcome variable, nr = not reported, numbers in bold = standardised beta, *=p<.05, **=p<.001*

Well-being and quality of life

Four studies looked at well-being as an outcome measure, two studies looked at quality of life (QoL), one study looked at life satisfaction and one study looked at functional health. Please see Table 7 for a summary of the findings.

Wei et al. (2011) conducted two separate analyses using different samples: college students and a community adult sample. They created a hypothetical model consisting of two main pathways to subjective well-being. They predicted that self-compassion would mediate the pathway from attachment anxiety to subjective well-being but that empathy towards others (rather than self-compassion) would mediate the pathway from attachment avoidance to subjective well-being. They found that self-compassion was a significant mediator between attachment anxiety and subjective well-being for both samples. They also found that empathy towards others was a significant mediator for attachment avoidance and subjective well-being for both samples. They found, however, that although in both samples there was a negative association, self-compassion was only a significant mediator between attachment avoidance and subjective well-being in the community adult sample, but not the college student sample. The reverse pattern was found for the mediating role of empathy towards others between attachment anxiety and well-being. Despite these discrepancies, the result from the scaled chi-square difference test between the partially mediated structural models for both samples was not significant. The authors concluded, therefore, that the relationships between the variables were not significantly different between the student and community adult samples.

Neff and McGehee (2010) also looked at two different samples - adolescents and college students. However, they found no significant age-group differences in correlations between self-compassion and the other variables and so they decided to combine the samples before conducting the mediation analyses. They used the RQ to measure attachment and so tested

each attachment category separately. They found that secure attachment was positively associated with self-compassion, and preoccupied and fearful attachment were negatively associated with self-compassion. They found, however, that a dismissive attachment style was not significantly linked to self-compassion. Using the Sobel (1982) test of mediation, they found that self-compassion was a significant mediator between attachment (secure, preoccupied and fearful but not dismissive styles) and well-being.

Two studies mentioned in the preceding section on emotional distress also included measures of well-being. **Brophy et al.**'s large general population study, looking at two dimensions of self-compassion (self-warmth and self-coldness separately), found that self-coldness significantly mediated the pathway from anxious and avoidant attachment to QoL, but that self-warmth did not. **Homan**'s **(2014)** study, looking at attachment to God, found that attachment anxiety and avoidance both indirectly predicted life satisfaction through self-compassion but there was no direct relationship.

In a later study, **Homan (2018)** focused on self-compassion within an older adult population. She was interested in the concept of "eudaimonic well-being" generally thought to be made up of self-acceptance, personal growth, purpose in life, positive relationships with others, environmental mastery, and autonomy. She found that self-compassion mediated the link between both attachment dimensions and five out of the six eudaimonic sub-variables, with a large effect size found for each measure. However, neither attachment anxiety nor avoidance had a significant indirect effect on autonomy.

Raque-Bogdan et al. (2011) extended the research assessing mental health by also including physical health. They were interested in the potential underlying mediating role of self-compassion and mattering. Mattering refers to the belief that others are aware of and care about one's presence (Elliott et al., 2004). Thus, the authors suggest that the two variables

together allow for the assessment of an individual's construct of both self and others: the defining characteristic of attachment security. They studied 208 undergraduate students and assessed physical and mental health. They found that self-compassion and mattering both mediated the relationship between self-reported levels of attachment avoidance and anxiety, and mental health. However, they found that only mattering was associated with physical health and, surprisingly, there was a negative relationship between self-compassion and physical health. As with some of the previous studies, they found that attachment avoidance accounted for a smaller amount of the variance in self-compassion than attachment anxiety.

In two separate studies Moreira and her colleagues used samples of parent-child dyads. In a study looking at 'Mindful Parenting' **(**a parenting approach that focuses on bringing mindful attention to the parent-child relationship), **Moreira et al. (2018)** created a path model examining the associations between mindful parenting and adolescents' well-being through adolescents' attachment representations, self-compassion and mindfulness. They assessed 563 parent-child dyads to try and understand this relationship. They found that adolescents' attachment representations had an indirect effect on adolescents' well-being through both self-compassion and mindfulness. They also found that these pathways both fit within the larger pathway from mindful parenting to well-being, i.e., mindful parenting – attachment – self-compassion and mindfulness – well-being. They hypothesised that mindful parenting helps contribute to a more positive representation of parents as secure attachment figures and that this in turn helps develop a healthy self-to-self relationship characterized by compassion.

In an earlier study, **Moreira et al. (2015)** assessed whether the attachment style of a parent could impact the well-being of their child. Testing their mediation model confirmed that higher levels of the mothers' attachment-related anxiety and avoidance toward their own mother were associated with poorer children's QoL, through lower levels of the mothers'

self-compassion and higher levels of parenting stress. However, they found that their model only accounted significantly for 16% of the QoL variance.

Furthermore, they did not find a significant correlation between self-compassion and children's QoL. Instead, they found that self-compassion only exerted a mediating role through its association with parenting stress. The authors suggested that, although self-compassion may have an important role in children's adjustment, it is likely that this is only indirectly through its influence on the mother's parenting behaviours and attitudes.

Summary

The papers from this section support the theory that self-compassion mediates the relationship between QoL, well-being, life satisfaction and functional mental health, but not physical health. Two of the studies used two different age groups and found no meaningful differences between the groups, and one study used an older adult sample. This suggests that this mediating pathway is found throughout the life span. Furthermore, there is evidence to suggest that the pathway may spread across generations (i.e., from mother to child). Again, only one study looked at the positive and negative dimensions of self-compassion separately and found that the negative dimension significantly mediated the relationship between attachment and the outcome measure, but the positive dimension did not.

Table 7. Mediation analysis for well-being and quality of life variables

Reference	Model	Correlations / Beta			Mediation analysis		
		a	b	c	Beta	SE	CI (95%)
Well-being							
Homan, 2018	Attachment Anxiety (general) - Self-compassion - Self-acceptance	-0.60* / -0.31	0.74* / 0.92	-0.45* / -0.30**	-0.28	0.06	[-0.42, -0.18]
	Attachment Anxiety (general) - Self-compassion - Personal growth	-0.60* / -0.31	0.50* / 0.35	-0.31* / -0.16*	-0.11	0.05	[-0.22, -0.02]
	Attachment Anxiety (general) - Self-compassion - Purpose in life	-0.60* / -0.31	0.56* / 0.73	-0.44* / -0.19*	-0.22	0.07	[-0.38, -0.12]
	Attachment Anxiety (general) - Self-compassion - Positive relationships	-0.60* / -0.31	0.64* / 0.49	-0.39* /-0.17*	-0.15	0.06	[-0.27, -0.04]
	Attachment Anxiety (general) - Self-compassion - Environmental mastery	-0.60* / -0.32	0.62* / 0.54	0.50* / 0.36**	-0.17	0.05	[-0.27, -0.09]
	Attachment Anxiety (general) - Self-compassion - Life autonomy	-0.60* / -0.33	0.37* / 0.22	-0.52* / -0.58**	-0.07	0.05	[-0.18, 0.01]
	Attachment Avoidance (general) - Self-compassion - Self-acceptance	-0.49* / -0.17	0.74* / 0.92	-0.43* / -0.24*	-0.16	0.05	[-0.30, -0.05]
	Attachment Avoidance (general) - Self-compassion - Personal growth	-0.49* / -0.17	0.50* / 0.35	-0.35* / -0.27**	-0.06	0.03	[-0.15, -0.01]
	Attachment Avoidance (general) - Self-compassion - Purpose in life	-0.49* / -0.17	0.56* / 0.73	-0.58* / -0.51**	-0.12	0.05	[-0.26, -0.04]
	Attachment Avoidance (general) - Self-compassion - Positive relationships	-0.49* / -0.17	0.64* / 0.49	-0.51 / -0.41**	-0.08	0.05	[-0.23, -0.01]
	Attachment Avoidance (general) - Self-compassion - Environmental mastery	-0.49* / -0.17	0.62* / 0.54	-0.38* / -0.20*	-0.09	0.04	[-0.02, -0.03]

Moreira et al., 2018	Attachment Avoidance (general) - Self-compassion - Life autonomy	-0.49* / -0.17	0.37* / 0.22	-0.07 / 0.15	-0.04	0.03	[-0.10, 0.00]
	Adolescents' attachment to parents – Adolescents' self-compassion – Adolescents' wellbeing	0.46* / **0.42****	0.50* / 0**.28****	0.53* / 0**.35****	0.16	nr	[0.11, 0.21]
Neff & McGehee, 2010	Secure Attachment (general) - Self-compassion - Well-being	nr	nr	nr	Sobel test; z = 7.02		
	Preoccupied Attachment (general) - Self-compassion - Well-being	nr	nr	nr	Sobel test; z = 4.83		
	Fearful Attachment (general) - Self-compassion - Well-being	nr	nr	nr	Sobel test; z = 4.95		
	Dismissive Attachment (general) - Self-compassion - Well-being	nr	nr	nr	Sobel test; z = ns		
Wei et al., 2011 (study 1)	Attachment Anxiety (general) - Self-compassion - Well-being	-0.38* / **-0.37****	0.51** /0 **.39****	-0.37** / **-0.20***	-0.14	0.04	[-0.23, -0.07]
	Attachment Avoidance (general) - Self-compassion - Well-being	-0.15* / **-0.07**	0.51** / 0**.39****	-0.37** / **-0.19***	-0.03	0.04	[-0.10, -0.04]
Wei et al., 2011 (study 2)	Attachment Anxiety (general) - Self-compassion - Well-being	-0.38* / **–0.29****	0.51** /0 **36****	-0.36** / **–0.21***	-0.11	0.08	[-0.40, -0.04]
	Attachment Avoidance (general) - Self-compassion - Well-being	-0.36* / **–0.27****	0.51** /0.**36****	-0.38** / **–0.25***	-0.10	0.04	[-0.19, -0.04]
Quality of life							
Brophy et al., 2020	Attachment Anxiety (general) - Self-warmth -QoL	−0.09*	0.02	−0.18* / **-0.07****	**-0.01**	nr	[−0.01, −0.00]
	Attachment Anxiety (general) - Self-coldness -QoL	0.47*	−0.27*	−0.18* / **-0.07****	**-0.11**	nr	[−0.13, −0.09]
	Attachment Avoidance (general) - Self-warmth -QoL	−0.18*	0.02	−0.27* / **-0.12****	**-0.01**	nr	[−0.01, −0.00]
	Attachment Avoidance (general) - Self-coldness -QoL	0.40*	−0.27*	−0.27* / **-0.12****	**-0.09**	nr	[−0.11, −0.07]

Moreira et al., 2015	Attachment Anxiety (mother) - Self-compassion - Child QoL	-0.30* / -0.05*	0.13 / 0.48	0.00 / 0.01	-0.03	0.17	[-0.43, 0.28]
	Attachment Avoidance (mother) - Self-compassion - Child QoL	-0.34* / -0.08**	0.13 / 0.48	0.00 / 0.21	-0.04	0.26	[-0.61, 0.44]
Life Satisfaction							
Homan, 2014	Attachment Anxiety (God) - Self-compassion - Life satisfaction	−0.50** / -0.22**	0.45** / 0.45**	−0.24* / -0.05	−0.10	nr	[−0.14, −0.07]
	Attachment Avoidance (God) - Self-compassion - Life satisfaction	−0.01 / −0.11*	0.45** / 0.45**	−0.18* / −0.01	−0.05	nr	[−0.09, −0.02]
Functional Health							
Raque-Bogdan et al., 2011	Attachment Anxiety (romantic) - Self-compassion - Mental health	0.43* / 0.44*	0.55* / nr	0.38* / nr	-1.93	0.37	[2.71, 1.26]
	Attachment Avoidance (romantic) - Self-compassion - Mental health	0.19* / 0.19*	0.55* / nr	0.21* / nr	-0.96	0.40	[1.75, 0.19]
	Attachment Anxiety (romantic) - Self-compassion - Physical health	0.43* / 0.44*	0.18* / nr	0.07 / nr	not tested because correlation not significant		
	Attachment Avoidance (romantic) - Self-compassion - Physical health	0.19* / 0.19*	0.18* / nr	0.07 / nr			

*Please note: a = pathway from attachment to self-compassion, b = pathway from self-compassion to the outcome variable, c = pathway from attachment to the outcome variable, nr = not reported, numbers in bold = standardised beta, *=p<.05, **=p<.001*

Relationships and inter/intra-personal relating

Six studies looked at relationships or relating; three studies looked at relationship quality and satisfaction, one looked at parenting and two studies looked at the relationship to self, specifically body appreciation and shame. Please see Table 8 for a summary of the findings.

Following on from the previous section on well-being, **Moreira et al. (2016)** assessed 290 mothers of school-aged children in order to look at the same variables in their 2018 paper but in the other direction; assessing whether insecure attachment styles were associated with mindful parenting through self-compassion.

They used structural equation modelling to test their proposed mediation model and found that attachment avoidance had a direct effect on mindful parenting, but that self-compassion fully mediated the pathway between attachment anxiety and mindful parenting. Specifically, higher levels of attachment anxiety were associated with lower levels of self-compassion, and lower levels of self-compassion were associated with lower levels of mindful parenting.

The three studies that looked at relationship quality and satisfaction varied greatly in the cultural demographic of their samples. **Bolt et al.'s (2019)** UK/USA sample looked at romantic relationships, whereas **Amani and Khosroshahi (2020)** and **Sebastian (2018)** both looked at marital relationships specifically which likely reflects the more conservative view on relationships in Iranian and Indian cultures. **Amani and Khosroshahi (2020)** used structural equation modelling to create a model of the variables mediating the pathway between secure attachment and marital quality. They found that self-compassion, resilience and dyadic perspective taking (i.e., a mental tendency to empathise with another person's situation) all significantly mediated the pathway in their samples of 300 Iranian married couples.

Sebastian (2018) was interested in determining the variables involved in the pathway to marital satisfaction within Keralan culture. They based their analyses on **Raque-Bogdan et al.'s (2011)** model of functional health by looking at self-compassion and "mattering" as potential mediators. Interestingly, they found the attachment anxiety was not related to self-compassion and, although attachment avoidance was related to self-compassion, self-compassion did not significantly mediate the pathway to marital satisfaction. They did, however, find that mattering was a significant mediator for both attachment dimensions. The researcher also completed semi-structured interviews with a small subset of the couples which scored high on marital satisfaction. The data from these interviews supported the importance of the feeling that "I matter" within the relationship and the idea that this lessens the experience of attachment avoidance and attachment anxiety in order to improve the relationship.

Bolt et al. (2019) was the only other study to analyse the negative and positive items of the self-compassion scale separately, in this case they termed the two dimensions "compassionate" and "uncompassionate." They examined whether self-compassion and compassion for one's partner mediates the association between attachment insecurity and relationship outcomes (relationship quality and relationship satisfaction). Using structural equation modelling they tested two mediation models, with either relationship quality or relationship satisfaction as the outcome variables. Attachment anxiety and attachment avoidance were used as the predictor variables and compassionate and uncompassionate attitude towards self, and compassionate and uncompassionate attitude towards one's partner were used as simultaneous parallel mediators.

They found that the association between attachment anxiety and poor relationship quality was mediated by low self-compassionate attitude. Furthermore, the association between attachment avoidance and poor relationship quality was mediated by low compassionate

attitude and high uncompassionate attitude towards one's partner. They did not find a mediating effect for relationship satisfaction, but both attachment dimensions showed a direct negative impact on both relationship measures.

Subsequent analysis which looked at gender found that, in both models, gender moderated the effect of attachment anxiety and avoidance on compassionate attitude towards partner. In particular, they found that the effect of attachment on compassion towards their partner was a stronger negative relationship in males. However, the authors did not comment on why they thought this might be.

Two studies looked at qualities which I have categorised as involving a relationship to self. **Raque-Bogdan et al. (2016)** were interested in body appreciation. Body appreciation involves positive thoughts and feelings about the body, an awareness of and attention to the body's needs, participation in behaviours that promote the body's health, and rejecting unrealistic body ideals portrayed in the media (Tylka & Wood-Barcalow, 2015a).

They tested a hypothetical model which predicted that peer and romantic attachment anxiety would mediate the link between maternal attachment and self-compassion. They predicted that self-compassion would then mediate the link between peer/romantic attachment anxiety and body appreciation. They found that their structural model significantly predicted 40% of the variance on body appreciation. Using bootstrap mediation analysis, they found that self-compassion mediated the negative association between peer attachment anxiety and body appreciation and between romantic attachment anxiety and body appreciation.

Finally, **Beduna and Perrone-McGovern (2019)** were interested in shame in the context of childhood bullying. They created a hypothetical model made up of attachment security, self-compassion, and emotion regulation and hypothesized that these constructs might buffer against experiences of shame in adulthood.

Using structural equation modelling in a sample of 322 college students, they found a direct relationship between attachment security and shame, self-compassion and shame and attachment and self-compassion. In addition, they found that self-compassion partially mediated the pathway from attachment to shame as well as from bullying to shame.

Summary

This section provided evidence for the role of self-compassion in mediating the pathway between attachment and relating to self and other. Self-compassion was found to mediate the pathway between attachment anxiety (but not avoidance) and mindful parenting. It was also found to mediate the relationship between attachment and relationship quality. Interestingly however, it did not mediate the relationship between attachment and relationship satisfaction. This result was found across varying cultures. Finally, self-compassion significantly mediated the relationship between attachment and self-relating, in terms of both shame and body appreciation.

Table 8. Mediation analysis for relationship and inter /intrapersonal relating variables.

Reference	Model	Correlations / Beta			Mediation analysis		
		a	b	c	Beta	SE	CI (95%)
Romantic relationships							
Amani & Khosroshahi, 2020	Secure Attachment (general) - Self-compassion - Marital quality	0.89* / **0.53***	0.60* / nr	0.60* / **0.45***		Sobel test = 7.10*	
Bolt, et al., 2019	Attachment Anxiety (romantic) - Compassionate attitude towards - Relationship quality	−0.21** / **-0.18***	0.26** / **0.11***	−0.45** / **−0.35***	−0.02	nr	[-0.03, -0.00]
	Attachment Anxiety (romantic) - Uncompassionate attitude towards -Relationship quality	0.36** / 0**.33***	−0.19** / **0.09**	−0.45** / **−0.35***	0.02	nr	[-0.00, 0.05]
	Attachment Avoidance (romantic) - Compassionate attitude towards - Relationship quality	−0.12* / **-0.07**	0.26** / **0.11***	−0.51** / **−0.21***	−0.01	nr	[-0.03, 0.00]
	Attachment Avoidance (romantic) - Uncompassionate attitude towards -Relationship quality	a = 0.17* / **0.09**	−0.19** / **0.09**	−0.51** / **−0.21***	0.01	nr	[-0.00, 0.02]

	Attachment Anxiety - Compassionate attitude towards -Relationship satisfaction	−0.21** / **-0.18***	0.16* / nr	−0.36** / nr	0.15	nr	[-0.44, 0.08]
	Attachment Anxiety - Uncompassionate attitude towards -Relationship satisfaction	0.36** / 0**.33***	−0.13* / nr	−0.36** / nr	−0.326	nr	[-0.10, 0.79]
	Attachment Avoidance (romantic) - Compassionate attitude towards - Relationship satisfaction	−0.12* / **-0.07**	0.16* / nr	−0.45** / nr	−0.08	nr	[-0.35, 0.05]
	Attachment Avoidance (romantic) - Uncompassionate attitude towards -Relationship satisfaction	0.17* / **0.09**	−0.13* / nr	−0.45** / nr	0.11	nr	[-0.05, 0.35]
Sebastian, 2018	Attachment Anxiety (romantic) - Self-compassion - Marital satisfaction	0.20 / **0.04**	-0.17* / **0.16***	-0.38* / **0.40***	Robust path analysis, $R^2 = 0.00$		
	Attachment Avoidance (romantic) - Self-compassion - Marital satisfaction	0.01 / **0.11***	-0.17* / **0.17***	-0.24*/ **0.28***	Robust path analysis, $R^2 = 0.11$		
Interpersonal factors							
Moreira et al., 2016	Attachment Anxiety (mother) - Self-compassion - Mindful parenting	-0.18* / **-0.25***	0.61* / **0.63****	-0.22* / **-0.20***	**0.16**	nr	[0.28, 0.06]

	Attachment Avoidance (mother) - Self-compassion - Mindful parenting	-0.21* / **-0.09**	0.61* / **0.63****	-0.22* / -0.22*	**0.06**	nr	[0.16, 0.06]
Intrapersonal factors							
Beduna et al.,	Attachment Security (general) - Self-compassion - Shame	nr / **-0.37***	nr / **-0.64***	nr / **-0.17***	primary model estimate = **-0.27**		
Raque-Bogdan et al., 2016	Attachment Anxiety (peer) - Self-compassion - Body appreciation	-0.36** / **−0.26****	0.58** / **0.63****	−0.28** / nr	−0.10	nr	[−0.22, −0.11]
	Attachment Anxiety (romantic) - Self-compassion - Body appreciation	-0.38** / **−0.28****	0.58** / **0.63****	−0.29** / nr	−0.18	nr	[−0.23, −0.12]

Adjustment to external factors

The remaining three studies looked at adjustment to an external factor as their outcome variable. Please see Table 9 for a summary of the findings. Firstly, **Arambasic et al. (2019)** were interested in the adjustment to illness in the context of long-term breast cancer survivors. The authors found that, after controlling for perceived physical health, higher attachment anxiety and attachment avoidance were significantly associated with increased levels of stress (reported under the emotional distress results table) and perceived negative impact of cancer. They also found that self-compassion significantly mediated the pathways between attachment anxiety and attachment avoidance and both stress and perceived negative impact of cancer.

Holt (2014) and **Reizer (2019)** both looked at adjustment in an occupational or educational setting. **Reizer (2019)** was interested in organizational outcomes. They looked at four main outcome variables: job performance, organizational citizenship behaviours, turnover intentions, and emotional exhaustion. The sample included 202 Israeli service-sector employees who had been employed for at least two months. After controlling for age and gender, they found that self-compassion significantly mediated the pathway between attachment anxiety and the four outcome measures and attachment avoidance and the four outcome measures. Furthermore, all the direct associations between attachment and organizational outcomes were non-significant supporting a full mediation model rather than a partially mediated one.

All the papers discussed so far have the obvious limitation of using a cross-sectional design, in that they cannot infer causality. In order to address this limitation, **Holt (2014)** utilized a short-term longitudinal design to assess the effect of attachment style on college students' academic, social, and personal/emotional adjustment after their first semester of college (time

two). They were then able to control for their adjustment measures at the start of the semester (time one) in order to infer causality.

They tested three different models to analyse how attachment might affect college adjustment. For one of the models, personal/emotional adjustment at time two was regressed onto parental attachment. They selected social competence and self-compassion as mediators, and also controlled gender and personal/emotional adjustment at time one by including them as covariates. Contrary to other research, however, this study did not find a direct association between parental attachment and self-compassion. Rather, personal/emotional adjustment at time one predicted self-compassion exclusively. As hypothesized, self-compassion did predict personal/emotional adjustment at time two (as did personal/emotional adjustment at time one), but as there was no significant association between attachment and self-compassion, self-compassion was not confirmed as a mediator. The author concluded that the reason for this inconsistent result was not clear but questioned whether it was due to their measure of attachment, which focused solely on the parent-child relationship.

Summary

This section found evidence to support a significant relationship between self-compassion and an individual's ability to adjust to external stressors. Self-compassion significantly mediated the pathway between both attachment anxiety and attachment avoidance to adjustment to cancer and to the working environment. The only study that used a longitudinal design, however, did not find a relationship between attachment and self-compassion. Its role as a mediator within the pathway from attachment to adjustment to college, therefore, has not been confirmed.

Table 9. Mediation analysis for adjustment to external factor variables

Reference	Model	Correlations / Beta			Mediation analysis		
		a	b	c	Beta	SE	CI (95%)
Adjustment to illness							
Arambasic et al., 2019	Attachment Anxiety (general) - Self-compassion -IOC	−0.62* / −1.96**	−0.53* / −0.08**	0.48* / 0.14	0.16	0.48	[0.33, -2.20]
	Attachment Avoidance (general) - Self-compassion -IOC	−0.63* / −1.86**	−0.53* / −0.08**	0.36* / 0.02	0.19	0.06	[0.09, -0.320]
Adjustment to work / college							
Holt, 2014	Attachment Security (primary caregiver) - Self-compassion - Personal/emotional adjustment	0.12 / nr	0.50** / nr	0.90 / nr	0.09	0.06	nr
Reizer, 2019	Attachment Anxiety (general) - Self-compassion - Performance	-0.42** / **-.32****	0.21* / **0.22***	-0.06 / **-0.08**	**-0.07**	0.02	[-0.12, -0.03]
	Attachment Anxiety (general) - Self-compassion - OCB	-0.42** / **-.32****	0.31** / **0.30****	-0.12* / **-0.08**	**-0.09**	0.03	[-0.16, -0.05]
	Attachment Anxiety (general) - Self-compassion - Turnover intentions	-0.42** / **-.32****	-0.21* /**-0.19***	0.18* / **0.07**	**0.06**	0.02	[0.02, 0.11]
	Attachment Anxiety (general) - Self-compassion - Emotional exhaustion	-0.42** / **-.32****	-0.30** / **-0.30****	0.22* / **0.07**	**0.10**	0.02	[0.05, 0.16]
	Attachment Avoidance (general) - Self-compassion - Performance	−0.36** / **−0.22***	0.21* / **0.22***	-0.17* / **−0.14**	**-0.05**	0.02	[-0.10, -0.01]
	Attachment Avoidance (general) - Self-compassion - OCB	−0.36** / **−0.22***	0.31** / **0.30****	-0.23* / **−0.06**	**-0.07**	0.03	[-0.12, -0.02]

Attachment Avoidance (general) - Self-compassion - Turnover intentions	−0.36** / **−0.22***	-0.21* / **-0.19***	0.07 / **−0.01**	**0.04**	0.02	[0.02, 0.09]
Attachment Avoidance (general) - Self-compassion - Emotional exhaustion	−0.36** / **−0.22***	-0.30** / **-0.30****	-0.19* / **0.08**	**0.07**	0.03	[0.01, 0.12]

*Please note: a = pathway from attachment to self-compassion, b = pathway from self-compassion to the outcome variable, c = pathway from attachment to the outcome variable, nr = not reported, numbers in bold = standardised beta, *=p<.05, **=p<.001*

Discussion

There is a considerable evidence base highlighting the importance of attachment development on psychological functioning and well-being. However, less is known about the underlying processes by which attachment impacts on these factors. To our knowledge, this is the first review aiming to collate and evaluate the literature assessing whether self-compassion is a key mediating link between attachment and psychological health. Twenty-four studies were identified and from these 46 different mediation analyses were reviewed. All the studies found used correlational data and 23 of the 24 studies used a cross-sectional design. This means that the following summary of results should be interpreted as hypothetical and not necessarily reflecting causation.

There were four main areas of interest; emotional distress and associated behaviours, well-being and quality of life, relationships and inter/intra-personal relating and adjustment to external factors. The majority of studies found self-compassion to be a significant mediator between attachment and the outcome measure assessed. These included anxiety, stress, depression, NSSI, well-being, QoL, life satisfaction, mental health, relationship quality, mindful parenting, shame, body positivity, adjustment to illness and occupational outcomes. The only study that did not use a cross-sectional design, Holt (2014), was also one of the two studies to not find a relationship between attachment and self-compassion (the other was Sebastian, 2018) and so temporal precedence was still not assessed. Other measures which also did not show significance included physical health, relationship satisfaction, life autonomy (one of the variables of eudaimonic well-being) and the HADS measure of depression. The only other non-significant results were found when either attachment or self-compassion were broken down into sub-categories.

Attachment dimensions

The studies varied in their methods of assessing attachment, but the majority of studies looked at two dimensions of attachment: attachment anxiety and attachment avoidance. Cassidy and Kobak (1988) wrote about the "secondary attachment strategies" that individuals high in attachment insecurity use, i.e., either hyperactivating or deactivating their attachment system in an effort to cope with threats. It is thought that individuals scoring high on the avoidance dimension will tend to rely on deactivating strategies, denying their attachment needs and avoiding closeness and dependency in relationships. In contrast, individuals scoring high on the anxiety dimension will tend to rely on hyperactivating strategies, desperately trying to achieve closeness and support but without the confidence that the attachment figure will provide this. This theory has important implications for the development of self-compassion as when people rely on external sources for validation (i.e., using the hyperactivating strategies associated with attachment anxiety), they are not likely to rely on their internal resources to generate self-compassion (Neff & McGehee, 2010). The relationship between attachment avoidance and self-compassion, however, is likely to be more complex as deactivating strategies could lead to a positive or negative sense of self (Pietromonaco & Feldman Barrett, 2000). Individuals high in attachment avoidance, for example, may either learn to rely on themselves for validation or they may learn to repress their emotions and be less self-compassionate because being kind to themselves may make them feel vulnerable (Mikulincer et al., 2003). More than half of the papers reviewed, which looked at attachment anxiety and attachment avoidance separately, found disparities between the two dimensions. Interestingly, and in support of Cassidy and Kobak's theory, the majority of these found a stronger relationship with attachment anxiety than attachment avoidance.

This theory would suggest that the two dimensions are orthogonal. In a meta-analysis of the association between attachment anxiety and avoidance, however, Cameron et al. (2012)

found that the two dimensions were significantly associated. Reviewing 242 studies that used the ECR as a measure of attachment, they found an average correlation between the two dimensions of 0.20 (in the small to medium range), but that the strength of the correlation varied greatly between studies (ranging from −.22 to .68) suggesting that moderating variables might explain some of the variance. The most significant moderating variable was the chosen version of the ECR used, with the shorter version showing a significantly higher correlation between dimensions. In the current review, 16 of the studies used the ECR, and half of these used a shorter version.

Only one study (Murray et al., 2021) in the review, however, controlled for the two dimensions' shared variance and found that the pathway from attachment avoidance to depression via self-compassion was no longer significant after controlling for attachment anxiety. This supports Cameron et al.'s recommendation to control for any shared variance between the two dimensions in order to determine which dimension emerges as the main predictor of any given outcome or mediating process. In this context, the studies that did find a significant mediating pathway for attachment avoidance may have done so due to its shared variance with attachment anxiety.

Measures of self-compassion

All of the studies found for this review used a version of Neff's Self-Compassion Scale. Muris and Otgaar (2020) conducted a search of the Web of Science database in 2019 using self-compassion as the search term. The search generated 927 publications, of which 597 were empirical studies. They found that 96% of these empirical papers also used the SCS or the SCS-SF to measure self-compassion. This demonstrates the influence the measure has on how self-compassion is conceptualised within academia.

Only two of the studies looked at the negative and positive traits of self-compassion separately. Interestingly, both studies provided evidence to support their separation. Brophy et al. (2020) assessed depression and QoL as their outcome measures and found that it was the negative traits of the scale that significantly mediated the relationship between attachment anxiety and avoidance. Bolt et al.'s (2019) study of relationships, however, found the opposite pattern of results. They found that it was the positive traits of the scale, rather than the negative traits, that significantly mediated the relationship between attachment and relationship quality. It has been argued that the negative items of the self-compassion scale (i.e., self-judgment, isolation and overidentification) reflect psychopathology more strongly than the positive items (self-kindness, common humanity and mindfulness; Muris et al., 2019), and so it might be that the positive items, instead, may be a more specific predictor of positive personal relationships (i.e., relationship quality) than the negative items.

The rest of the studies used the total score and doing so has been heavily criticised by Muris and colleagues. They argue that the negative components inflate the link between self-compassion and psychopathology and that it creates a tautology (Muris & Otgaar, 2020). Neff (2020) points out that this criticism seems to suggest that the authors believe that uncompassionate self-responding is the same as psychopathology, rather than it being a correlated risk factor. Neff (2020) argues that because the SCS is a multidimensional measure it makes sense for its distinct subscales to predict outcomes differentially. She argues that this, however, is not evidence against the use of the total score. Instead, she has provided evidence using a bifactor-exploratory structural equation modelling framework to support using either the higher-order structure with one global self-compassion factor or the six subscales (self-kindness, reduced self-judgement, common humanity, reduced isolation, mindfulness and reduced overidentification; Neff, 2019). These subscales are thought to

mutually affect one another and operate together as a system (Neff, 2016). None of the studies in this review, however, looked at these dimensions separately.

Limitations and future research

Following on from the discussion on measuring self-compassion, it is important to acknowledge that this review did not include papers that used other self-relating qualities: self-esteem, self-reassurance and self-criticism. Irons et al. (2006), for example, looked at self-criticism and self-reassurance as mediators between attachment and parental recall, and depression. They found that the impact of recall of negative parenting on depression was mediated through the form of self-criticism and the effect of parental warmth on depression was mediated by the ability to be self-reassuring. Both self-compassion and self-reassurance are ways of relating to oneself with care and concern in the face of adversity. Despite their similarities, research on these two constructs have mainly developed as separate lines of inquiry (Hermanto & Zuroff, 2016). Due to the overlap of self-compassion with other self-relating qualities, as well as the emergence of alternative conceptualisations of self-compassion and measurements to assess it (e.g., the Sussex-Oxford Compassion Scales; SOCS; Gu et al., 2020), further research is needed to clarify the core elements of self-relating which drive the relationship between attachment and psychological health.

The majority of studies found that self-compassion partially mediated the pathway between attachment and the outcome variable. This offers clear implications for empirically testing other indirect effects that are operating (Rucker et al., 2011). A large proportion of the studies did look at one or two other possible mediating variables and a few studies looked at self-compassion within a much larger and more complex model. Whilst cross-sectional studies are useful to confirm theoretical associations, more rigorous longitudinal research is now needed to confirm the nature of the underlying mechanisms. In a longitudinal study by Donald et

al. (2018), they found that across a four-year time period, self-esteem predicted self-compassion but not vice versa. They concluded, therefore, that self-esteem appears to be an important antecedent of the development of self-compassion. Moving forward, it will be important to ascertain the temporal nature of the pathway from attachment to self-compassion development as, theoretically, it could make sense for the reverse relationship to also be true (as demonstrated by Wei et al., 2011).

There have been several studies which have found that experimentally inducing attachment security increases levels of self-compassion. Intervention studies, however, have also shown that teaching skills in developing self-compassion can also cause shifts towards a more secure attachment style (e.g., Irons & Heriot-Maitland, 2020). It may be that the direction of the pathway may depend on whether you are looking at trait or state measures of the variables. Neff and colleagues have recently developed the State Self-Compassion Scale (SSCS; Neff et al., 2021), and this will help in future research aiming to make causal inferences.

All of the studies found in the review relied on self-report measures. This runs the risk of inflated associations due to shared method variance. Future research should aim to support the current findings with observational data and/or informant data from friends and family.

This review included a large range of culturally diverse samples. In a recent paper by Tóth-Király and Neff (2020) assessing the use of the SCS across different groups, they found that while the measurement of self-compassion does not vary by culture, levels of self-compassion do. In this current review we focused on the relationship between variables rather than overall scores and found similar patterns of results across countries. Cultural differences in parenting style are likely to influence self-compassion (Pepping et al., 2015), and so it would be interesting to determine whether the overall scores of attachment style support the differing levels of self-compassion found across different groups (Tóth-Király & Neff, 2020).

Finally, this study focused on self-compassion, but more research is now needed on the two other flows of compassion (i.e., compassion to others and compassion from others). It would also strengthen the theoretical understanding of the pathway between attachment and psychological health if "fear of compassion" was taken into consideration. It is thought that fear of compassion may act as an inhibitor or barrier for developing a compassionate stance towards oneself or others (Jazaieri et al., 2013) and it is speculated that a fear of compassion may develop in the same way as compassion itself, during early life experiences with an attachment figure (Gilbert et al., 2011). One of the studies in the review (Joeng et al., 2017) included fear of compassion in their model and found support for its role within the mediating pathway.

Implications

Identifying mediating variables is fundamental to understanding mechanisms of effect and there have been exciting developments in the statistical methods to analyse these relationships (Abu-Bader & Jones, 2021). There was, unfortunately, no clear way to assimilate the data as a meta-analysis in this review due to the range in outcomes assessed. Despite this, the review provides support for a promising theoretical model of the pathway from attachment to a wide range of psychological outcomes. It has also helped point out the gaps in the model which need addressing, i.e., the need to differentiate between the dimensions of self-compassion and attachment, to provide evidence of causation and to determine other possible mediators/confounding variables.

Understanding the mechanism of effect can help determine how best to develop interventions for attachment insecurity. Unlike other traits, such as self-esteem, self-compassion appears to be amenable to change (Germer & Neff, 2019). While self-compassion is a dispositional trait, research assessing compassion interventions in both clinical and community populations

suggests that it is also a skill that can be taught, practised, and strengthened in those who are low in self-compassion (Germer & Neff, 2013; Gilbert & Procter, 2006). For example, in a recent meta-analysis, Ferrari et al. (2019) reviewed 27 randomized controlled trials of self-compassion interventions and found moderate to strong effect sizes for increases in self-compassion and reductions in psychopathology. Assessing baseline scores of attachment and compassion could help tailor interventions for an individual's specific needs. For example, individuals high in attachment anxiety might particularly benefit from strengthening the flow of compassion to the self, whereas individuals high in attachment avoidance might benefit more from strengthening the flow of compassion to others (Bolt et al., 2019).

The wide range of outcome measures assessed in this review shines light on the diversity of the possible benefits of developing self-compassion. In line with this, the review supports the importance of cultivating self-compassion in everyday life and not just reserving interventions for clinical populations later in adulthood. Instead, self-compassion initiatives should be embedded into parenting programmes, schools and the workplace.

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Part Two

Empirical Paper

"Developing self-compassion online: Assessing the efficacy and feasibility of a brief online intervention."

Abstract

Objective

The aim of the study was to assess the efficacy of a newly designed online self-compassion training programme on increasing levels of self-compassion, well-being and self-reassurance and in reducing levels of self-criticism, shame, depression, anxiety and stress in a general population convenience sample. We also aimed to assess the effects of the intervention on fear of self-compassion and attachment, as well as assessing whether these traits affected engagement. A further aim was to assess the feasibility of the intervention by reviewing attrition rate and practice diaries.

Method

Two hundred and forty-nine participants were randomly assigned to have either immediate or delayed access to a four-week online self-compassion training programme. This programme was based on Compassionate Mind Training and was made up of psychoeducational sessions and in-between session practices and readings. Out of the 179 participants who completed the pre-intervention measures, 81 participants completed the waiting list control design (45.25%) and 50 participants went on to complete all five sessions (27.9%).

Results

Compared to the control group, participants in the intervention group showed statistically significant increases in self-compassion and well-being and significant decreases in uncompassionate attitude towards self, shame, self-criticism, depression, anxiety, stress, levels of fear of compassion and attachment avoidance and anxiety. These effects remained at a one month follow up. The number of sessions completed was significantly predicted by baseline levels of well-being.

Conclusion

This study provides promising results for the use of online self-compassion interventions to improve the mental wellbeing of the general public. However, further research is now needed to help understand the barriers to engagement and to help tailor its format to better suit participants who disengaged.

Introduction

The coronavirus outbreak has caused a time of heightened anxiety and uncertainty, and it appears that it has never been more important for us to learn to be kinder and more compassionate towards ourselves. Compassion is defined as "a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it" (Gilbert et al., 2017). Compassion is a central component of many of the world's religions, in particular Buddhism, and has been under discussion for thousands of years. However, over the past 20 years scientific interest in self-compassion has greatly increased due to the growing understanding of its positive impact on psychological well-being (MacBeth & Gumley, 2012), as well as general physical health (e.g. genetic expression, Fredrickson et al., 2013 and immune system effectiveness, Klimecki et al., 2013). Furthermore, there is supporting evidence to suggest that increasing compassion for oneself can also lead to increased levels of compassion for others, with greater motivation to alleviate others' suffering (Condon et al., 2013) and resolve conflict (Yarnell & Neff, 2013).

An operationalised definition of self-compassion coined by Neff (2003), which is widely used in research, describes self-compassion as being made up of three main components: self-kindness (being warm and understanding toward ourselves when we suffer, fail, or feel inadequate), common humanity (an understanding that suffering is a universal part of the human experience) and mindfulness (the ability to hold a non-judgmental, open mind state in which one observes thoughts and feelings as they are, without trying to suppress or deny them). Self-compassion is understood theoretically as promoting psychological resilience by facilitating individuals to use more adaptive coping and emotion regulation strategies (Inwood & Ferrari, 2018) in order to maintain healthy psychological functioning (Zessin et al., 2015) and protect against the development of mental health problems (MacBeth & Gumley, 2012).

The origins of compassion

Using an evolutionary framework of psychology and behaviour is thought to promote a compassionate understanding of human suffering. Gilbert and colleagues' claim that we can focus on our common humanity by understanding that the way that the human brain has evolved means that it is not perfectly adapted to the contemporary human environment (Gilbert, 2020). Over the past two million years, it has evolved greatly in cognitive complexity; enabling humans to anticipate, imagine, reflect, and have an objective sense of "self". However, this comes at a price as these new capabilities must work with the "old brain" motives and emotions (Gilbert, 2014; Nesse, 2005). This makes humans very vulnerable to rumination, self-criticism and negativity bias (Baumeister et al., 2001; Gilbert, 2009a). The commonly used example to illustrate this point is to think of a zebra running away from a lion; once it has escaped it will quickly settle down. However, if a human were to be chased by a lion, they would likely remain feeling traumatised thinking about what might have happened if they had got caught or what would happen if they saw another lion (Gilbert, 2014). Such insights into how our brain has evolved, and knowing that we did not choose any of this, can help shift attention from blaming and shaming the self for these difficulties to how to work with them compassionately (Gilbert & Choden, 2013).

A simplified version of the theory suggests that our emotions are organized into three basic emotional systems; "threat and self-protection", "incentive and resource seeking" and "self-soothing and contentment". The idea is that if these three systems become unbalanced then we will suffer in some way. The fast paced, competitive, and goal-driven nature of our modern-day capitalist western society overactivates our threat and protection system (e.g. through high work pressure and the increased chance of negative social comparisons through social media) and our incentive and resource-seeking system (e.g. through the encouragement

to constantly seek more successes and more material rewards). This in turn means that there is less time to activate our self-soothing and contentment system (Gilbert, 2009a).

The self-soothing and contentment system is thought to have been built on attachment and care-giving mentalities (Gilbert, 2005). A child's early experiences of their environment and their caregivers' behaviour (i.e. whether they feel cared for, secure and safe) impacts on the development of this system. Through a "secure" attachment with a caregiver, hormones in our brain (endorphins and oxytocin) are released to give us the feeling of warmth, social-safeness and a calm sense of well-being. When a baby or child is distressed, the love of the parent soothes and calms the infant and it is thought that, through this relationship, we learn to be able to self-soothe ourselves (Gilbert, 2010). Cultivating self-compassion is thought to activate the same neurological systems as when we are cared for by others. This has been shown to have links with increased psychological well-being and emotional resilience (Beaumont et al., 2016; Gilbert & Procter, 2006; Warren et al., 2016), increased resources to manage stress (Leary et al., 2007) and reduced levels of negative self-relating (Zhang et al., 2019).

Difficulties with compassion

Despite the benefits mentioned, it is not uncommon for people to experience a fear of self-compassion (Gilbert et al., 2011), and this is particularly prevalent in individuals who were not provided with a safe environment in infancy or a secure attachment to a caregiver was not formed. Early shame memories (Matos, Duarte & Pinto-Gouveia, 2017) and childhood abuse and maltreatment (Boykin et al., 2018; Miron et al., 2016) have been linked to high levels of fear of compassion and poorer mental health outcomes (Gilbert et al., 2011; Kirby et al., 2019). However, there is promising new research to suggest that improvements in self-compassion can mediate change towards a more secure attachment style (Irons & Heriot-

Maitland, 2020; Navarro-Gil et al., 2020), and that, although fear of compassion can interfere with the therapeutic process, CFT can still show improvements in those high in this trait (Jazaieri et al., 2013).

Cultivating compassion

Motivated by the link between self-compassion and increased mental well-being, a range of compassion-based therapies have been developed. Compassion-Focused Therapy (CFT; Gilbert, 2009a) is the intervention that most explicitly aims to increase self-compassion. CFT aims to help individuals to deliberately choose to foster self-compassion and develop a sense of contentment in order to soothe both the incentive and resource-seeking system and the threat and self-protection system. It was developed for high shame and self-critical people with complex mental health problems and there is good evidence for its effectiveness in this population (e.g. Kirby, 2016; Leaviss & Uttley, 2014). While CFT requires face-to-face treatment delivery (either in person or online) in order to target clinical conditions, Compassionate Mind Training (CMT; Gilbert & Procter, 2006), an aspect of CFT, may be particularly useful to promote mental well-being and target public health concerns among the general population (Matos, Duarte, Duarte, Pinto-Gouveia et al., 2017). A serious public health concern that we are currently facing is, of course, the impact of coronavirus on global mental health. The pandemic has caused significant life changes for all of us, and this has impacted on mental well-being (Paredes et al., 2021). Our threat and safety system has been constantly activated due to constant threats to our health, our freedom, our social support networks, and our sense of safety (e.g. uncertainty over financial security and the future). Encouraging compassion at the present time is therefore an important initiative. Mental health promotion initiatives should aim to be accessible, sustainable and adaptable (Christensen & Hickie, 2010; Kazdin & Blase, 2011) and “light-touch” approaches, such as

CMT, can provide a cost effective and time efficient means of engaging a broad range of people.

CMT has been found to increase self-compassion through providing education on the evolution of human psychology and compassion, developing ways to activate and strengthen the self-soothing and contentment system, and by teaching techniques to calm the threat system and to challenge self-criticism and uncompassionate attitudes towards self (Gilbert, 1997; Gilbert et al., 2004). Studies of CMT have demonstrated effectiveness in reducing clinical psychological symptoms (Beaumont & Martin, 2013; Gilbert & Procter, 2006; Mayhew & Gilbert, 2008) and more recently studies have started to assess the effectiveness of CMT in non-clinical populations (Irons & Heriot-Maitland, 2020; Matos, Duarte, Duarte, Pinto-Gouveia et al., 2017; Matos, Duarte, Duarte, Gilbert et al., 2017; Kim, et al., 2020), demonstrating that even interventions as short as a couple of weeks can significantly increase self-reported symptoms of mental well-being, reduce negative symptoms associated with psychopathology and increase neurophysiological biomarkers of the "self-soothing" system.

Online interventions

Due to the social distancing restrictions in place because of the coronavirus outbreak, developing online interventions seems more relevant than ever. There have now been several pilot studies using a pre-post intervention design, which have shown promising benefits of accessing brief compassion focused interventions online in a variety of populations. These include university students (McEwan & Gilbert, 2016), psychology trainees (Finlay-Jones et al., 2017), healthcare professionals (Rao & Kemper, 2017) and mothers of infants (Gammer et al., 2020; Kelman et al., 2018; Lennard et al., 2021; Mitchell et al., 2018).

Only recently, however, has there started to be research using more rigorous designs. Eriksson et al. (2018) completed a randomised control trial of an online 6-week mindfulness-

based compassion programme for practicing psychologists and found increased levels of self-compassion and reduced levels of stress and burnout post-intervention. There have also been a few studies specifically aimed at new mothers (Gammer et al., 2020; Kelman et al., 2018; Lennard et al., 2021), which have shown varying degrees of effectiveness. Krieger et al. (2019) conducted a randomised control trial of an 8-week online version of the Mindfulness-Based Compassionate Living (MBCL) programme (developed by Van den Brink & Koster, 2018) for those suffering with high levels of self-criticism (recruited through online self-help forums for people who suffer with depressive or anxiety disorders). They found promising results (i.e. medium to large effect sizes) in reducing self-reported symptoms of depression, anxiety and stress in the intervention group and increasing levels of self-compassion.

Halamová and colleagues, however, were the first to examine compassion focused online interventions in a general population sample using a waitlist-control design. They examined the impact of four different compassion-based online interventions on reducing self-criticism and increasing self-compassion. Each intervention was designed so that a different exercise was accessed over 14 consecutive days via email. The first study (Halamová, Kanovský, Jakubcova, & Kupeli, 2020) looked at the Mindful Self-Compassion programme (MSC; developed by Neff) and found increased levels of self-compassion but only immediate reductions in self-criticism which did not last until the two month follow up. Similar results were found for the second two studies: an online version of the Mindfulness-Based Compassionate Living (MBCL) programme and an online version of The Emotion Focused Training for Self-Compassion and Self-Protection (EFT-SCP). However, in these two studies the reduction in self-criticism remained at the two months follow up (Halamová, Kanovský, Varšová, Kupeli, 2021; Ondrejková et al., 2020).

Finally, the fourth study looked at CMT (Halamová, Kanovský, Pačutová, Kupeli, 2020). It was found that the CMT intervention was effective at reducing self-criticism and self-

uncompassionate responding but did not increase self-compassion or self-reassurance. It might be questioned whether the mixed results found for the CMT intervention were due to its design; a new exercise each day might not give participants enough time to reflect on the concepts and utilise them in their everyday lives. Furthermore, no information was gathered about the participants' mental well-being or potential barriers i.e., levels of fear of compassion or attachment style.

Given these considerations my research partner, Jack Deacon, and I aimed to assess a newly developed online self-compassion training programme, based on CFT theory and CMT practices. The programme was designed to be short and accessible to the general population, with four psychoeducational sessions spread out with enough time to practice the exercises in the week between each session. I aimed to complete the quantitative analysis while Jack opted to conduct the qualitative analysis (follow up interviews with a subset of our participants; please see Appendix A for further details of our contributions). The first aim of the research project, and the main focus of this paper, was to:

1. Explore, using quantitative analysis, initial outcomes and efficacy of the training programme and follow-up exercises by assessing whether the online self-compassion training programme would lead to:
    a. Improved levels of self-compassion, self-reassurance and mental well-being in the adult general population.
    b. Decreased levels of self-criticism, shame, depression, anxiety and stress in the adult general population.
    c. Decreased levels of fear of compassion and attachment anxiety or avoidance.

The Medical Research Council's (MRC) guidelines for complex interventions emphasise the importance of assessing feasibility and acceptability in order to identify implementation problems. Piloting interventions should use mixed method designs in order to understand

barriers to engagement, understand the underlying processes which made the intervention successful/unsuccessful, and identify contextual factors associated with variation in outcomes (Craig et al., 2008; Moore et al., 2014). Our secondary aim for the study was, therefore, to:

2. Complete a mixed methods process evaluation of the programme and follow-up exercises by:
    a. Assessing the feasibility of delivering the self-compassion online training programme by using quantitative analysis (i.e., the secondary focus on this paper) to measure:
        i. Attrition rate
        ii. Compliance with the programme's materials and exercises.
    b. Assessing the acceptability and feasibility of the self-compassion online training programme by using qualitative analysis (i.e., Jack's interviews) to review:
        i. Participants' experiences of the programme and follow-up exercises (e.g. what participants found helpful/less helpful)
        ii. Participants' experiences of the barriers and facilitators to engaging with the programme.
        iii. Participants' experiences of the effects of the training programme (e.g. whether the participants felt that the programme led to any changes in their thoughts, feelings and/or behaviour, and what underlying processes led to these changes).

It was hoped that the research project would help to understand and explain the intervention's outcomes and identify ways to optimise its design.

Method

Recruitment

The research study was advertised on various social media websites (Facebook, Instagram, Twitter and Reddit) with the aim of reaching a diverse population, i.e. through community groups rather than university groups. The advert asked whether the reader was someone who "struggles with being too hard of themselves" and whether they were "interested in learning how to be more self-compassionate". Potential participants self-identified themselves by clicking the link to read the full information sheet, sign the consent form and then provide their email address. They were randomly allocated to the intervention or waitlist control group based on the order that they signed up (e.g., first person allocated to group 1, second person allocated to group 2, third person to group 1, and so on).

We based our power analysis (using G*Power3, Faul et al., 2007) on our main waitlist control analysis using a medium effect size of .25 (with alpha set at .05, beta at .8, number of groups= 2, number of measures= 2, correlation among repeated measures = .5 and nonsphericity correction=1) producing a minimum total sample size of 34. An estimated medium effect size was based on previous online intervention studies showing increases in self-compassion (Krieger et al., 2019). Previous studies using a similar online design have found high attrition rates between 30-60% (Halamová, Kanovský, Pačutová, Kupeli, 2020; Krieger et al., 2019) and so we aimed to err on the side of caution by recruiting at least 100 participants.

The advert was closed after six days as we had already recruited 249 participants and there was only one researcher to manage the sample. Participants were randomly allocated to either group 1 or 2 based on the order in which they signed up. All participants were over 18 years

old, with the only exclusion criterion being an inability to understand spoken and written English.

Protocol

Participants were emailed and asked to provide a preferred start date. They were asked to try and complete the session on the same day each week to help them build the practice into their routine. Email alerts were set up to send out a link to the sessions in the morning of that day. All of the sessions, questionnaires and follow-up materials were accessed through Qualtrics and participants had to enter a self-generated unique code to access them (the first three letters of their mother's maiden name and last three digits of their mobile number). This unique code allowed us to track the participants' data from week to week whilst keeping their data separate from their email addresses and thus anonymous.

Before the first session, participants were asked to complete the package of pre-session outcomes measures. Following the completion of each session, participants were able to download follow-up guided audio exercises and written handouts covering ideas discussed in the session.

One week after each session (before they accessed the next session) participants were asked to complete the Compassionate Mind Practice Recording Diary (taken from Matos, Duarte, Duarte, Gilbert et al., 2017) to assess how much they practiced the exercises during that week.

One week after the last session of the programme, participants were sent a final link to Qualtrics to watch a brief closing session, complete the package of outcome measure and the final Compassionate Mind Practice Recording Diary.

Finally, participants were sent a link to complete the outcome measures one month after completing the online programme. Participants who completed this final stage of the study were then asked if they would like to enter themselves into a prize draw for a high street voucher or donation to charity for having participated in the study. Please see Figure 1 for a diagram of the protocol.

Ethical approval was obtained from University of College London (UCL) Psychology Ethics Committee (ref: CEHP/2020/581). Please see the appendices for all supporting materials.

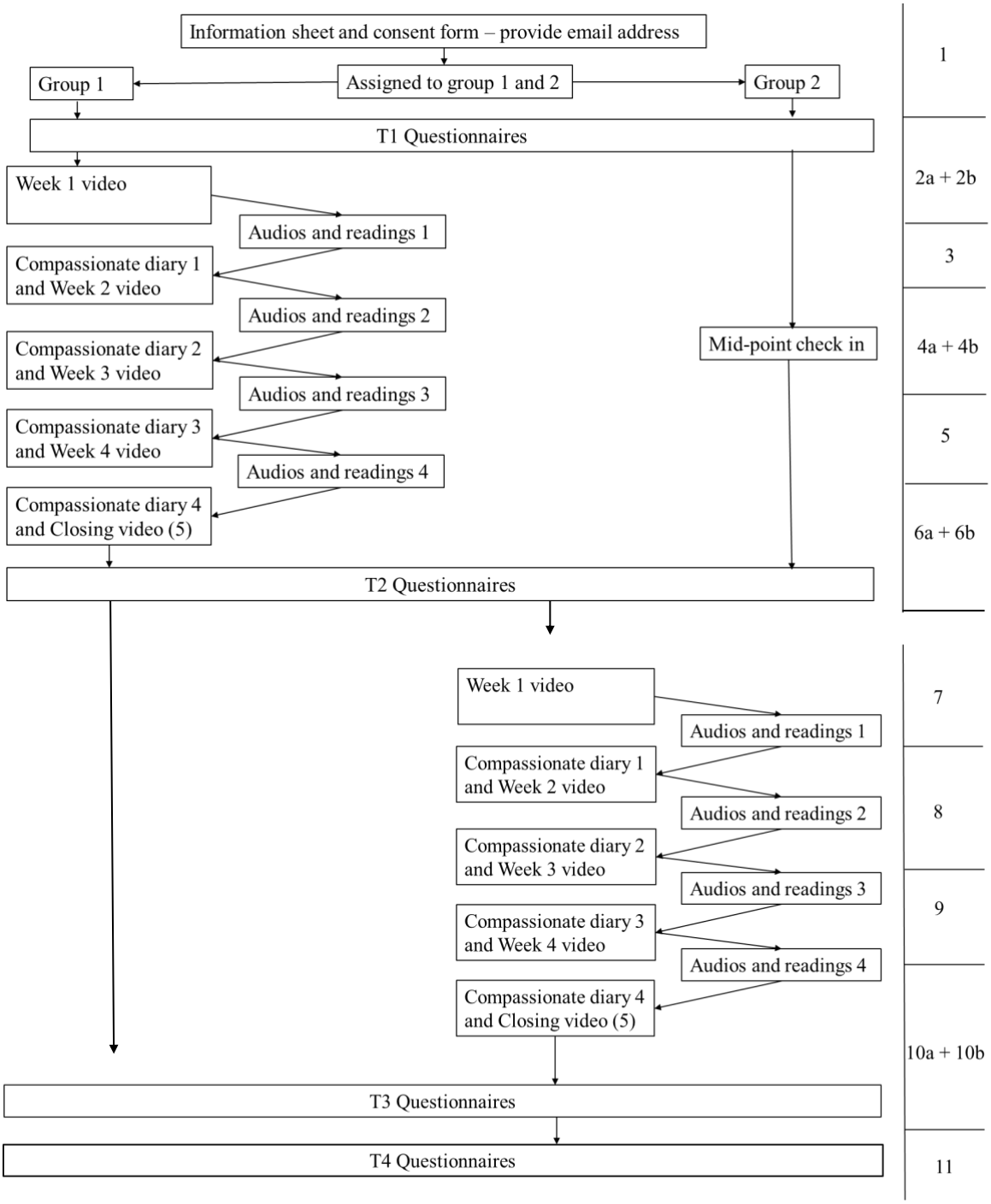

Figure 1. Diagram of protocol for groups 1 and 2.

1. Notification that someone had signed the consent form and provided their email address. Participant contacted with assigned group and asked to provide a preferred start date.

2a. Group 1 was emailed link to Qualtrics to complete: Pre-intervention questionnaires and session 1 (including a supported reading and link to the first guided audio).

2b. Group 2 was emailed link to Qualtrics to complete: Pre-waitlist questionnaires.

3. Group 1 was emailed link to Qualtrics to complete: practice diary 1 and session 2 (including a supported reading and link to the first guided audio).

4a. Group 1 was emailed link to Qualtrics to complete: practice diary 2 and session 3 (including a supported reading and link to the first guided audio).

4b. Group 2 was emailed a mid-point reminder email.

5. Group 1 was emailed link to Qualtrics to complete: practice diary 3 and session 4 (including a supported reading and link to the first guided audio).

6a. Group 1 was emailed link to Qualtrics to complete: practice diary 4, the closing session and post-intervention questionnaires.

6b. Group 2 was emailed link to Qualtrics to complete: post-waitlist questionnaires and session 1 (including a supported reading and link to the first guided audio).

7. Group 2 was emailed link to Qualtrics to complete: practice diary 1 and session 2 (including a supported reading and link to the first guided audio).

8. Group 2 was emailed link to Qualtrics to complete: practice diary 2 and session 3 (including a supported reading and link to the first guided audio).

9. Group 2 was emailed link to Qualtrics to complete: practice diary 3 and session 4 (including a supported reading and link to the first guided audio).

10a. Group 2 was emailed link to Qualtrics to complete: practice diary 4, the closing session and post-intervention questionnaires.

10b. Group 1 was sent follow up questionnaires one month after closing session.

12. Group 2 was sent follow up questionnaires one month after closing session.

Intervention content

The content for the online training was drawn principally from CFT theory, practice, and research (e.g. Gilbert, 2009; Matos, Duarte, Duarte, Pinto-Gouveia et al., 2017; Irons & Beaumont, 2017). The exercises were all from CMT groups. The sessions were created and delivered by Dr Chris Irons, one of the leading researchers, trainers and supervisors of Compassion Focused Therapy.

Session 1 - this session explored how to lay the foundations for self-compassion by understanding the affection regulation (i.e. "three-systems") model in CFT (Gilbert, 2009a). Participants then engaged in an exercise called soothing rhythm breathing which is linked to accessing and developing the parasympathetic nervous system (which has been found, amongst other things, to be related to threat regulation and social connection - see Kirby et al., 2017).

Session 2 - this session explored the concept of developing a compassionate self and helped participants to begin to direct a sense of compassion and good will towards themselves. This practice has been found to be associated with reductions in shame and stress, and an increase in self-compassion (see Matos, Duarte, Duarte, Pinto-Gouveia et al., 2017 and Kim et al., 2020).

Session 3 – this session involved learning to switch from a "threat mind", to a "compassion mind", and further develop self-compassion through compassionate imagery (see Gilbert & Irons, 2004; Gilbert, 2009b; Irons & Beaumont, 2017).

Session 4 - this session explored self-compassion principally through compassionate letter writing, which utilises adaptations to expressive writing to help participants develop a more compassionate relationship with themselves (Gilbert, 2010).

Closing session – this final session included a brief summary of the training programme.

Measures

Demographic measures

The first questionnaire asked participants to fill out some brief demographic details. The categories of personal data used in the study were as follows:

- Gender
- Age
- Ethnicity
- Highest level of education
- Occupation
- Previous experience of therapy

Feasibility measures

In order to assess the quantitively measured aspects of feasibility, data was collected regarding attrition rates and participants were asked to complete the Compassionate Mind Practice Recording Diary (taken from Matos, Duarte, Duarte, Gilbert et al., 2017) each week to assess how often they practiced the exercises. In order to assess the other aspects of feasibility, my research partner, Jack Deacon, conducted follow up interviews with a subset of participants to uncover barriers and enabling factors for engaging with the training programme.

Acceptability measures

In order to assess acceptability, Jack Deacon also aimed to explore participants' subjective experience of the intervention. He has written up the findings from this analysis in his doctoral thesis.

Efficacy measures

In order to assess efficacy, the participants were asked to complete a package of outcome measures at the three time points: pre online-programme/waiting list, post online-programme/waiting list, and one month after the programme. The package of outcome measures included:

The Self-Compassion Scale - Short form (SCS-SF; Raes et al., 2011). We used this 12-item self-report questionnaire to measure self-compassion. This measure is a shorter version of the original 26-item questionnaire (Neff, 2003) but has been shown to have near perfect correlation with its total scores ($r \geq 0.97$) and has good internal reliability (Cronbach's alpha ≥ 0.86; Raes et al., 2011). Participants are asked to indicate how often they behave in the stated manner (e.g., 'When I fail at something important to me, I become consumed by feelings of inadequacy') using a 5-point Likert scale (1-Almost never to 5-Almost always).

Although the SCS is the most commonly used measure of self-compassion, its validity has recently come under scrutiny (please see Muris et al., 2019 for a review). The measure is made up of positive items: "compassionate attitude towards self" (i.e. self-kindness, common humanity, and mindfulness), and negative items: "uncompassionate attitude towards self" (i.e., self-judgment, isolation, and overidentification), with the total SCS score including reversed scoring of the negative items. However, the inclusion of the negative items has been criticised as it has been argued that these symptoms too closely parallel symptoms of

psychopathology, inflating the link between self-compassion and psychopathology and creating a tautology. Neff (2020) has since defended the use of the full SCS scale, but due to the argument that these two dimensions may relate differentially to external constructs (e.g. Brenner et al., 2017, 2018), we will assess compassionate and uncompassionate attitude towards self separately in our analyses.

Forms of Self-Criticizing/Attacking & Self-Reassuring Scale (FSCRS; Gilbert et al., 2004). We used this 22-item self-report questionnaire to measure trait self-criticism and self-reassurance. This measure is comprised of three subscales: inadequate self; hated self; reassured self. Gilbert et al. (2004) found good internal reliability with Cronbach's alpha of .90 for inadequate self and .86 for both hated and reassured self and the measure has been validated in both healthy and clinical populations (Baião et al., 2015). The scale assesses participants' thoughts and feelings about themselves in reaction to a perceived failure or mistake using a 5-point Likert scale (0-not at all like me to 4-extremely like me).

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Tennant et al., 2007). We used this 14-item self-report questionnaire to measure subjective well-being and psychological functioning. Participants were asked to rate their experience of various statements in regard to thoughts (e.g. "I've been thinking clearly") and feelings (e.g. "I've been feeling cheerful") over the past two weeks on a 5-point Likert scale (1 = None of the time, 5 = All of the time). The measure has shown good internal consistency, with a Cronbach's alpha score of 0.91 (population sample; Tennant, et al., 2007).

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21; Lovibond & Lovibond, 1995). We used this 21-item self-report instrument (a shortened version of the original DASS-42) comprising of three subscales, each with seven items, to measure symptoms of depression, anxiety and stress. The scale has good internal consistency, with Cronbach's

alphas of .94 for depression, .87 for anxiety, and .91 for stress (Antony et al., 1998). Participants were asked to rate how much each statement applied to them over the past week, on a 4-point Likert scale (0 = did not apply to me at all, 3 = applied to me very much, or most of the time).

External and Internal Shame Scale (EISS; Ferreira et al., 2020). We used this 8-item measure to assess the experience of external and internal shame across 4 core domains of: Inferiority/inadequacy, Exclusion, Emptiness, and Criticism. Participants were asked to rate how often they felt each statement on a 5-point Likert scale (0 = Never, 4 = Always). Good internal consistency has been found for internal shame (Cronbach's alpha = .82), external shame (Cronbach's alpha = .80) and the global score (Cronbach's alpha = .89; Ferreira et al., 2020). We chose to analyse the dimensions separately (i.e. external and internal shame) because it is thought that the two forms of shame have different origins, are related to different self-constructs, and need different types of therapeutic management (Gilbert, 1997).

Fears of Compassion Scale (FCS; Gilbert et al., 2011). We used the fear of compassion for *self*-subscale. This subscale is made up of 15 items. Participants were asked to score statements (e.g. "I feel that I don't deserve to be kind and forgiving to myself ") on a 5-point Likert scale (0 = Don't agree at all, 4 = Completely agree). Internal consistency was found to be good in both a student sample (Cronbach's alpha = .92) and a therapist sample (Cronbach's alpha = .85; Gilbert et al., 2011).

Experience of Close Relationships - Short Form (ECR-S; Wei et al., 2007). We used this 12 item self-report adult attachment style questionnaire to measure two key dimensions of attachment, the degree to which one feels anxious in attachment relationships (e.g.,' I need a lot of reassurance that I am loved by my partner'.), and the degree to which one feels avoidant (e.g., 'I try to avoid getting too close to my partner'.). Participants were asked to

respond on a 7-point Likert scale (1=disagree strongly, 7=agree strongly) with a score of 4 as neutral. Internal consistency, as measured by Cronbach's alpha, was found to be good for both avoidance (.94) and anxiety (.91).

Participants

Although 249 participants initially signed our consent forms, 179 went on to complete the pre-intervention measures and 53 participants completed the intervention. Please see figure 2 for the flow diagram of participant engagement across the study.

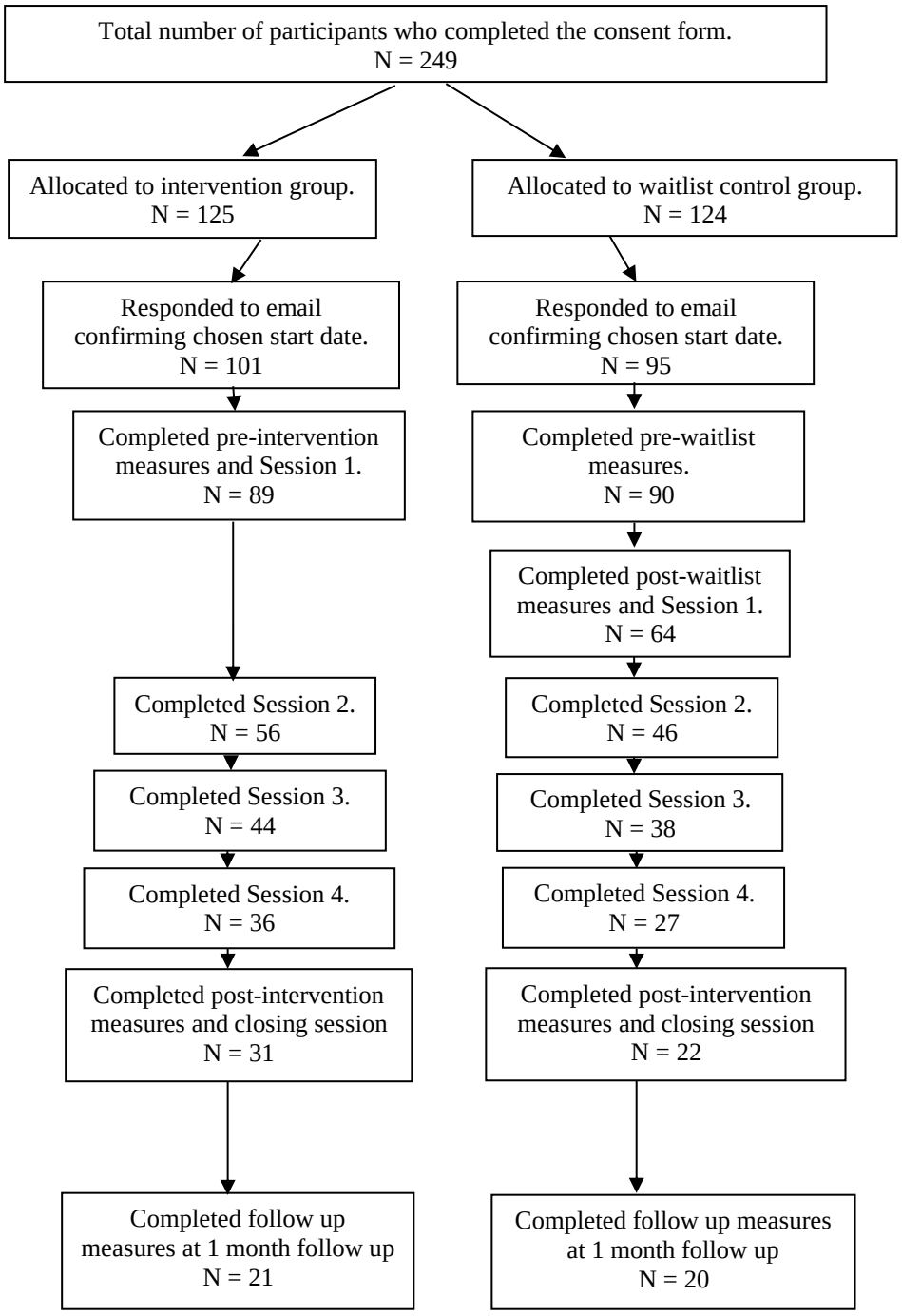

Figure 2. Flow diagram of participant completion rate. The numbers reflect total completion rate at each stage. Some of the participants had to later be removed from the analysis due to missing questionnaire data.

Data Analysis

The analyses were all conducted using SPSS version 26. Extreme outliers were identified using box plots and removed (i.e. the value was either three times the interquartile range below quartile one or three times the interquartile range above quartile three). In order to decide whether to remove milder outliers, we completed all of the analyses before and after removing them but did not find any difference in the test results and so chose to include them. We reviewed skewness and kurtosis on all measures (pre and post intervention) and found that 37.5% of the variables were significantly different from a normal distribution (using the Shaprio-Wilk test). We therefore decided to use the bootstrap sampling method (95% bias corrected and accelerated confidence intervals based on 1,000 samples) on all t-tests and correlations to overcome this (Field, 2014). We chose to use the bootstrapping method rather than non-parametric tests or transformation because it is simple and straightforward to use, retains power and allows for the estimate of confidence intervals (Guan et al., 2012). For our repeated-measures analyses, where the assumption of sphericity was violated (tested using Mauchley's test of sphericity), we corrected the degrees of freedom using the Greenhouse-Geisser procedure. For our between-subjects' analyses, where the assumption of equal variance was violated (tested using the Levene's test of equal variance), the degrees of freedom were also corrected. We chose to not adjust for multiple comparisons because, as the results were complementary towards the same hypothesis, there was reduced risk of false positives (Althouse, 2016). However, we have marked where the result would have remained significant after correcting for this for completeness.

Two main designs were used to analyse the effectiveness to the study:

1) Waitlist-control design

This analysis included all participants who completed the outcome measures at pre-intervention / pre-waitlist and post-intervention / post-waitlist ("completers"). Differences between the demographic characteristics of completers and "non-completers" were first assessed using chi squared. Independent sample t tests were also used to compare the baseline effectiveness measures for completers and non-completers.

Independent sample t tests were then performed to analyse differences between the intervention and waitlist control groups at baseline. We used a 2 × 2 mixed ANOVA design with the two conditions (intervention vs. waitlist control) as the between-group factor and time (pre and post intervention/waiting list) as the within-group factor. We followed up any significant interactions with paired samples t tests (in order to use bootstrapping) to explore differences between pre- and post-intervention/waiting list for both groups separately.

2) Repeated-measures design

This analysis included all participants who completed the intervention. Completers from both groups were combined to increase power. Differences between the demographic characteristics of completers and non-completers was first assessed using chi squared. Independent sample t tests were also used to compare the baseline effectiveness measures for completers and non-completers.

We employed a repeated measures one-way ANOVA with "time" being the independent variable (pre, post and 1 month follow up). Where significant results were found, paired samples t tests were performed (in order to use bootstrapping) to explore differences between the three time points.

Effect sizes for the ANOVAs were calculated using partial eta squared (η^2p), with $\eta^2p = 0.01$ referring to a small effect size, 0.06 to a medium effect size and 0.14 to a large effect size

(Tabachnick & Fidell, 2013). The effect sizes for the t tests were calculated using Cohen d, with 0.2 indicating a small effect, 0.5 a medium effect and 0.8 a large effect (Cohen, 1988).

In order to assess feasibility, descriptive data from participants' practice diaries was reviewed. We also used a correlational design to look at whether any of the baseline outcome measures had a significant relationship with compliance of the intervention, i.e. number of sessions completed. From this, we created a linear regression model, inputting the variables in order of correlation coefficient strength.

Results

Waitlist-control analysis

Out of the 179 participants who completed the pre-intervention questionnaires, 81 participants went on to complete the post-intervention/post-waiting list questionnaires (45.25%). Independent samples t-tests showed that completers scored significantly higher on baseline measures of self-reported "well-being" (WEMWBS) and "reassured self" (FSCRS) but lower on scores of self-reported "depression" (DASS) and "internal and external shame" (EISS), compared to non-completers. We found no significant differences between groups on demographic characteristics using chi squared. Please see the table below for the details of the significant test results.

Table 1. Statistically significant t-tests between the "completers" and "non-completers" of the waitlist-control design.

Measure	Completers (n=81) Mean (SD)	Non-completers (n=98) Mean (SD)	Difference	BCa 95% CI	t-test	*d*
Well-being	43.01 (8.44)	39.66 (8.64)	-3.35	-5.94, -.83	$t(177)= -2.61$, $p= .01$	-0.39
Reassured self	16.49 (6.27)	14.27 (6.14)	-2.23	-3.91, -.57	$t(177)= -2.39$, $p= .02$	-0.36
Depression	13.11 (9.97)	17.10 (10.81)	3.99	.90, 7.08	$t(177)= 2.55$, $p= .01$	0.38
Internal shame	7.63 (3.45)	9.09 (3.54)	1.46	.48, 2.48	$t(177)= 2.78$, $p= .01$	0.42
External shame	7.37 (3.60)	8.47 (3.35)	1.1	.09, 2.18	$t(177)= 2.11$, $p= .04$	0.32

Please note: Bootstrapping method based on 1,000 samples.

Out of the 81 participants who completed the pre and post measures, 29 participants were from the intervention group and 52 were from the waitlist control group. Chi squared analyses showed that there were no significant differences in demographic characteristics between the groups apart from "current work status", which showed higher rates of full-time employment in the intervention group [$\chi^2(10, N = 81) = 36.18$, $p < .001$], and for "previous therapeutic experience". We found that more participants in the intervention group had

attended longer-term individual therapy with a private therapist [$\chi^2(1, N = 81) = 4.62, p = .03$], and more had attended a psychoeducational workshop [$\chi^2(1, N = 81) = 4.20, p = .04$]. Due to the concern that any improvements caused by the training programme could be due to the programme working as a "refresher" of their previous therapy, we looked within the intervention group and compared those who had had long term private therapy compared to those who had not. We found a trend for increased effectiveness (a larger difference between pre and post scores in the expected direction depending on the variable) for the group that had not previously had longer term private therapy, although it was not significant for any of the outcome measures. We also compared those who had completed a psychoeducation group and again found increased effectiveness in those who had not attended a group; although confirming this pattern with a statistical test seemed inappropriate due to the small number of participants who had attended a group. Please see table 2 for demographic characteristics of the two groups.

Table 2. Demographic characteristics

	Intervention group (n=29)	Waiting-list control (n=52)
Gender, n (%)		
Female	24 (80.0)	48 (92.3)
Male	5 (16.7)	3 (5.8)
Non-binary	0 (0)	1 (1.9)
Age, n (%)		
18-24	0 (0)	9 (17.3)
25-34	14 (46.7)	23 (44.2)
35-44	8 (26.7)	13 (25.0)
45-54	7 (23.3)	4 (7.7)
55-64	0 (0)	1 (1.9)
65-74	0 (0)	1 (1.9)
75+	0 (0)	1 (1.9)
Ethnicity, n (%)		
White	26 (86.7)	45 (86.5)
Mixed/multiple ethnic groups	0 (0)	2 (3.8)
Asian/Asian British	1 (3.3)	2 (3.8)

Black/African/Caribbean/Black British	0 (0)	3 (5.8)
Other ethnic group	2 (6.7)	0 (0)
Highest level of Education, n (%)		
Before high/secondary school	0 (0)	2 (3.8)
High school/secondary school graduate	0 (0)	2 (3.8)
College/sixth form graduate or equivalent	3 (10.0)	1 (1.9)
Bachelor's degree of equivalent	8 (26.7)	20 (38.5)
Master's degree of equivalent	6 (20.0)	14 (26.9)
PhD or equivalent	6 (20.0)	7 (13.5)
Graduate or professional degree	6 (20.0)	6 (11.5)
Current work status, n (%)		
Employed full-time	14 (46.7)	1 (1.9)
Employed part-time	7 (23.3)	24 (46.2)
Interning	0 (0)	9 (17.3)
Studying	1 (3.3)	5 (9.6)
Unemployed - looking for work	1 (3.3)	1 (1.9)
Unemployed - not looking for work	0 (0)	3 (5.8)
Homemaker	1 (3.3)	3 (5.8)
Retired	0 (0)	2 (3.8)
Not able to work	0 (0)	1 (1.9)
Other	3 (10.0)	2 (3.8)
Self-employed/freelancing	2 (6.7)	1 (1.9)
Previous experience of therapy, n (%)		
No experience	5 (16.7)	12 (23.1)
Short-term individual therapy through the NHS (6-12 sessions)	4 (13.3)	14 (26.9)
Longer-term individual therapy through the NHS (12+ sessions)	3 (10.0)	4 (7.7)
Short-term individual therapy with a private therapist (6-12 sessions)	6 (20.0)	17 (32.7)
Longer-term individual therapy with a private therapist (12+ sessions)	12 (40.0)	10 (19.2)
Computerised/online therapy	0 (0)	5 (9.6)
Psychoeducation workshop	6 (20.0)	3 (5.8)
Group therapy	3 (10.0)	3 (5.8)
Couple's therapy	1 (3.3)	3 (5.8)
Family Therapy	0 (0)	2 (3.8)
Other	3 (10)	4 (7.7)

Independent samples t-tests of the baseline outcome measures (i.e. pre-intervention) showed no significant differences apart from self-reported “anxiety” (DASS) which was higher (mean difference = 4.57, BCa 95% CI = .87, 8.14) in the intervention group [$t(79) = 2.50$, $p = .03$, d=0.6]. However, we did not feel there was a strong enough theoretical basis to include this as a confounder in subsequent analysis.

Please see table 3 for the results of the mixed model ANOVAs. The tests showed that for every outcome variable there was a significant effect of time and a significant time x group interaction. There was no significant effect of group for any of the analyses apart from for compassionate and uncompassionate attitude towards self. Paired samples t tests (using the bootstrapping method) were used with each group to assess effect of time within each group. There was a significant difference between time points for all the measures used for the intervention group but there were no significant differences between time points for the waitlist-control group, apart from for fear of self-compassion which showed a significant increase.

Table 3. Mean scores, standard deviations, and statistics for both groups at pre- and post-intervention.

Measure	Time	Intervention (n=29) Mean (SD)	Waitlist (n=52) Mean (SD)	Time	Group	Time x Group	Significant post-hoc paired t-test	BCa 95% CI
Compassionate	T1	17.10 (5.02)	17.35 (4.12)	$F(1, 79) = 18.49$, $p<.000$, $\eta^2p = .19$	$F(1, 79) = 6.73$, $p=0.01$, $\eta^2p = .08$	$F(1, 79) = 289.13$, $p<.000$, $\eta^2p = .27$	Intervention group T1<T2 $t(28) = -4.12$, $p=.01$, $d = 0.79$	[-7.00, -2.48]
	T2	21.69 (4.29)	16.83 (4.21)					
Uncompassionate	T1	23.41 (4.21)	22.94 (4.31)	$F(1, 79) = 41.71$, $p<.000$, $\eta^2p = .35$	$F(1, 79) = 6.35$, $p=.01$, $\eta^2p = .07$	$F(1, 79) = 34.70$, $p<.000$, $\eta^2p = .31$	Intervention group T1>T2 $t(28) = 5.27$, $p=.002$, $d = 1.00$	[3.80, 8.10]
	T2	17.55 (5.19)	22.67 (4.36)					
Internal Shame	T1	8.10 (3.62)	7.37 (3.37)	$F(1, 79) = 17.94$, $p<.000$, $\eta^2p = .19$	ns	$F(1, 79) = 17.13$, $p<.000$, $\eta^2p = .18$	Intervention group T1>T2 $t(28) = 3.94$, $p=.005$, $d = 0.66$	[1.72, 5.00]
	T2	4.76 (3.08)	7.33 (3.37)					
External shame	T1	7.52 (4.44)	7.29 (3.08)	$F(1, 79) = 9.60$, $p=.003$, $\eta^2p = .11$	ns	$F(1, 79) = 15.43$, $p<.000$, $\eta^2p = .16$	Intervention group T1>T2 $t(28) = 3.27$, $p=.02$, $d = 0.62$	[1.30, 4.62]
	T2	4.59 (3.51)	7.63 (3.53)					

Well-being	T1	43.89* (7.03)	44.11* (6.62)	$F(1, 76) = 16.93$, $p<.000$, $\eta^2p = .18$	ns	$F(1, 79) = 12.34$, $p<.000$, $\eta^2p = .14$	Intervention group T1<T2 $t(26) = -4.29$, $p=.001$, $d = 0.60$	[-9.16, -3.41]
	T2	50.11 (7.82)	44.61 (7.01)					
Inadequate self	T1	23.52 (7.97)	21.94 (7.17)	$F(1, 79) = 22.13$, $p<.000$, $\eta^2p = .22$	ns	$F(1, 79) = 32.48$, $p<.000$, $\eta^2p = .29$	Intervention group T1>T2 $t(28) = 4.33$, $p=.001$, $d = 0.84$	[4.73, 12.14]
	T2	15.07 (9.12)	22.94 (7.17)					
Reassured self	T1	15.62 (7.07)	16.98 (5.79)	$F(1, 79) = 21.39$, $p<.000$, $\eta^2p = .21$	ns	$F(1, 79) = 22.87$, $p<.000$, $\eta^2p = .23$	Intervention group T1<T2 $t(28) = -4.06$, $p=.008$, $d = -0.76$	[-8.50, -3.26]
	T2	21.34 (6.53)	16.89 (5.70)					
Hated self	T1	5.82* (4.97)	4.96 (4.65)	$F(1, 78) = 11.63$, $p=.001$, $\eta^2p = .13$	ns	$F(1, 78) = 12.52$, $p=.001$, $\eta^2p = .14$	Intervention group T1>T2 $t(27) = 2.86$, $p=.008$, $d = 0.68$	[1.08, 5.36]
	T2	2.71* (3.39)	5.02 (4.75)					
Depression	T1	14.55 (11.32)	12.50 (8.49)	$F(1, 79) = 22.15$, $p<.001$, $\eta^2p = .22$	ns	$F(1, 79) = 16.13$, $p<.001$, $\eta^2p = .17$	Intervention group T1>T2 $t(28) = 3.80$, $p=.002$, $d = 0.67$	[4.34, 13.47]
	T2	5.93 (6.53)	11.77 (7.97)					
Anxiety	T1	12.21* (9.65)	7.85 (6.82)	$F(1, 78) = 16.64$, $p<.001$, $\eta^2p = .18$	ns	$F(1, 78) = 25.05$, $p<.001$, $\eta^2p = .24$	Intervention group T1>T2 $t(27) = 4.20$, $p<.001$, $d = 0.64$	[4.52, 11.66]
	T2	5.36* (5.17)	8.65 (7.28)					

Stress	T1	21.6 (10.42)	18.18 (7.31)	$F(1, 79) = 18.34$, $p<.000$, $\eta^2p = .19$	ns	$F(1, 79) = 22.15$, $p<.000$, $\eta^2p = .22$	Intervention group T1>T2 $t(28) = 4.23$, $p=.004$, $d = 0.75$	[5.34, 14.66]
	T2	11.86 (7.48)	18.65 (8.23)					
Fear of compassion	T1	21.69 (15.13)	15.85 (9.48)	$F(1, 79) = 13.42$, $p<.000$, $\eta^2p = .15$	ns	$F(1, 79) = 27.70$, $p<.000$, $\eta^2p = .26$	Intervention group T1>T2 $t(28) = 3.87$, $p=.01$, $d = 0.72$ Waiting list group T1<T2 $t(51) = -2.09$, $p=$**0.04**, $d=0.28$	[6.61, 16.96]
	T2	10.10 (9.30)	17.92 (11.63)					
Avoidant attachment	T1	21.00 (9.51)	17.94 (7.97)	$F(1, 79) = 15.77$, $p<.000$, $\eta^2p = .17$	ns	$F(1, 79) = 9.40$, $p=.003$, $\eta^2p = .11$	Intervention group T1>T2 $t(28) = 3.04$, $p=$**.026**, $d = 0.62$	[1.89, 7.56]
	T2	16.52 (7.78)	17.37 (7.33)					
Anxious attachment	T1	24.31 (7.75)	23.87 (7.81)	$F(1, 79) = 5.12$, $p=.03$, $\eta^2p = .06$	ns	$F(1, 79) = 8.80$, $p=.004$, $\eta^2p = .10$	Intervention group T1>T2 $t(28) = 2.41$, $p=$**.04**, $d = 0.46$	[1.10. 7.64]
	T2	20.31 (7.36)	24.40 (7.08)					

*Please note: All means, standard deviations, t-tests and confidence intervals are bootstrapped (1,000 samples); *=extreme outliers removed before the mean was calculated so N is smaller (indicated in the degree of freedom); p values in bold =did not remain significant after controlling for multiple comparisons using the Bonferroni method.*

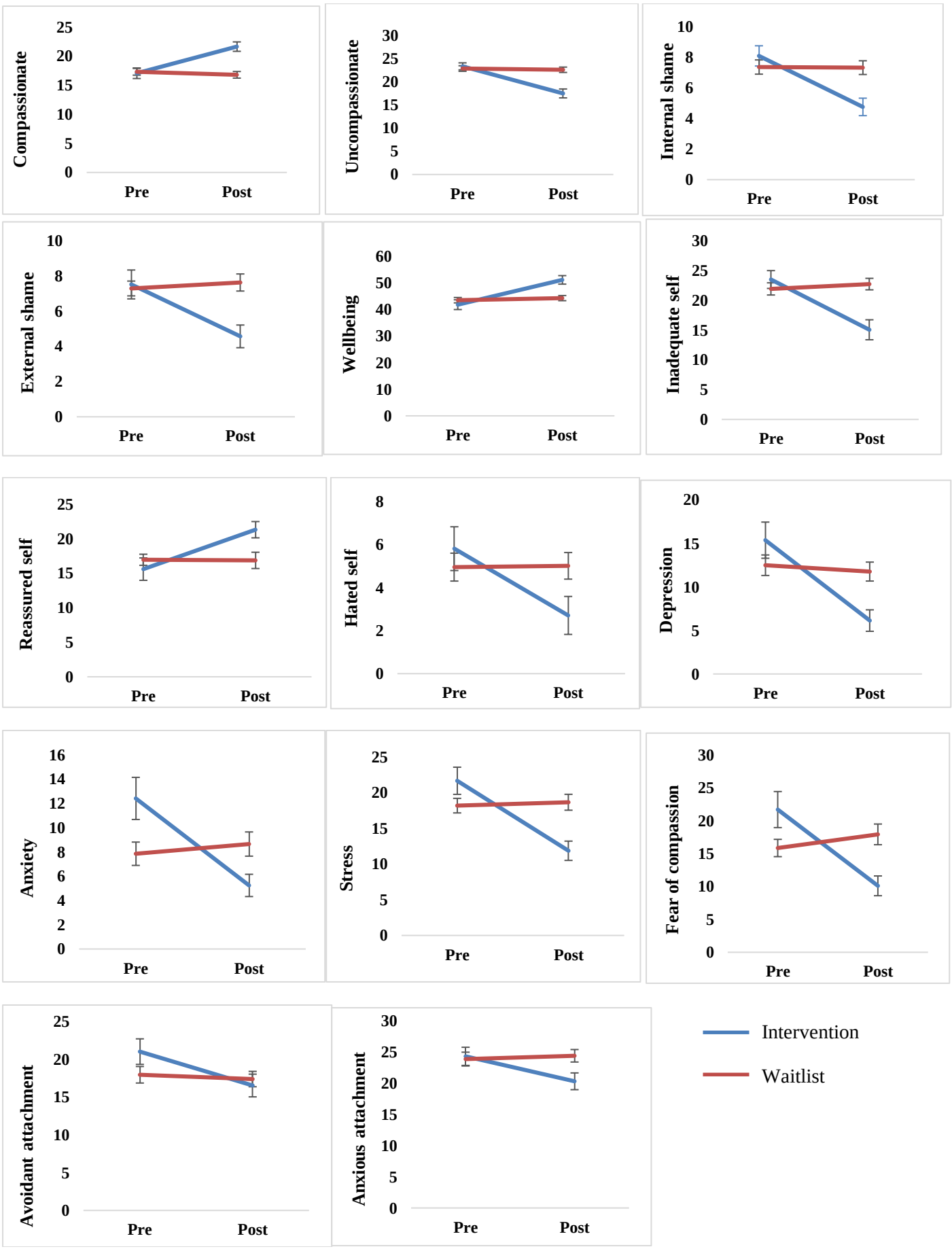

Figure 3. Pre- and post-intervention / waitlist (bootstrapped) means for all the outcome measures. Error bars = +/- 1 standard error.

Assessing temporal change

We combined the completers from the intervention group (n=29) with the participants from the waitlist control group that went on to complete the full intervention (n=21). We found no significant difference in baseline outcome measures or demographic characteristics between the intervention completers (n=50) and non-completers (n=129). Out of the 50 participants who completed the intervention, 31 completed the one month follow up questionnaires.

Please see table 4 for the results of the repeated measures ANOVAs which compared the outcome measures over the three time points. The tests showed significant results for all the outcome measures. Subsequent paired samples t-tests (with bootstrapping) showed that there were significant differences on all measures between pre and post and pre and follow-up questionnaires. There were no significant differences between post and follow-up questionnaires for any of the measures apart from “fear of compassion” (FCS) which showed further reductions in scores at the one month follow up.

Table 4. Mean scores, standard deviations, and statistics for "completers" at pre-, post-intervention and one month follow up.

Measure	Time	N	Mean (SD)	Time	Significant post-hoc paired t-test	BCa 95% CI
Compassionate	T1	50	17.24 (4.41)	$F(1.56, 46.73) = 28.03$, $p<.001$, $\eta^2p=.48$	T1<T2: $t(49) = -6.29$, $p=.001$, $d = 0.89$	[-6.02, -3.28]
	T2	50	22.42 (3.54)		T1<T3: $t(30) = -6.07$, $p=.001$, $d = 1.09$	[-8.00, -4.14]
	T3	31	22.23 (3.65)		T2<T3: ns	ns
Uncompassionate	T1	50	22.80 (4.19)	$F(1.56, 46.78) = 32.93$, $p<.001$, $\eta^2p=.52$	T1>T2: $t(49) = 7.11$, $p=.001$, $d = 1.01$	[4.16, 7.16]
	T2	50	17.24 (4.62)		T1>T3: $t(30) = 6.39$, $p=.001$, $d = 1.15$	[4.92, 9.07]
	T3	31	15.83 (4.07)		T2>T3: ns	ns
Internal Shame	T1	50	7.82 (3.39)	$F(2, 60) = 27.00$, $p<.001$, $\eta^2p=.47$	T1>T2: $t(49) = 4.27$, $p=.001$, $d = 0.77$	[1.46, 3.66]
	T2	50	4.76 (3.11)		T1>T3: $t(30) = 6.88$, $p=.001$, $d = 1.24$	[3.11, 5.55]
	T3	31	4.39 (2.55)		T2>T3: ns	ns
External shame	T1	50	7.42 (3.83)	$F(1.59, 47.60) = 15.39$, $p<.001$, $\eta^2p=.34$	T1>T2: $t(49) = 4.27$, $p=.001$, $d = 0.60$	[1.46, 3.66]
	T2	50	4.90 (3.44)		T1>T3: $t(30) = 4.06$, $p=.002$, $d = 0.73$	[1.90, 4.77]
	T3	31	4.90 (2.55)		T2>T3: ns	ns
Well-being	T1	49	43.53 (7.75)*	$F(1.39, 40.22) = 15.70$, $p<.001$, $\eta^2p=.35$	T1<T2: $t(48) = -5.56$, $p=.001$, $d = 0.79$	[-10.60, -4.78]
	T2	49	50.98 (6.95)*		T1<T3: $t(29) = -4.34$, $p<.001$, $d = 0.79$	[-12.48, -4.50]
	T3	31	51.19 (6.66)		T2<T3: ns	ns
Inadequate self	T1	50	22.86 (7.47)	$F(1.52, 45.55) = 35.14$, $p<.001$, $\eta^2p=.54$	T1>T2: $t(49) = 6.49$, $p=.001$, $d = 0.92$	[5.90, 10.91]
	T2	50	14.56 (8.16)		T1>T3: $t(30) = 7.20$, $p=.001$, $d = 1.29$	[8.47, 14.82]
	T3	31	12.58 (5.95)		T2>T3: ns	ns
Reassured self	T1	50	16.30 (6.04)	$F(1.48, 44.26) = 20.71$, $p<.001$, $\eta^2p=.41$	T1<T2: $t(49) = -5.35$, $p=.001$, $d = 0.76$	[-6.80, -3.36]
	T2	50	21.30 (5.78)		T1<T3: $t(30) = -5.13$, $p=.002$, $d = 0.92$	[-9.54, -4.51]
	T3	31	22.32 (4.78)		T2<T3: ns	ns

Hated self	T1	50	5.34 (4.85)	$F(1.23, 35.57) = 13.82$, $p<.001$, $\eta^2p=.32$	T1>T2: $t(48) = 3.71$, $p=.001$, $d = 0.53$	[1.43, 3.71]
	T2	49	2.57 (3.10)*		T1>T3: $t(30) = 4.63$, $p<.001$, $d = 0.83$	[2.48, 6.07]
	T3	31	2.16 (2.67)		ns	[0.39, 1.94]
Depression	T1	50	13.88 (10.13)	$F(1.40, 42.10) = 13.25$, $p<.001$, $\eta^2p=.31$	T1>T2: $t(49) = 4.28$, $p=.001$, $d = 0.61$	[4.32, 10.17]
	T2	50	6.60 (6.72)		T1>T3: $t(30) = 4.10$, $p=.002$, $d = 0.74$	[5.11, 13.81]
	T3	31	6.32 (4.82)		T2>T3: ns	ns
Anxiety	T1	48	10.45 (8.93)*	$F(1.21, 33.75) = 18.10$, $p<.001$, $\eta^2p=.39$	T1>T2: $t(47) = 5.07$ $p<.001$, $d = 0.73$	[4.04, 9.11]
	T2	48	4.00 (3.67)*		T1>T3: $t(30) = 4.11$, $p<.001$, $d = 0.74$	[4.11, 11.857
	T3	31	4.58 (5.27)		T2>T3: ns	ns
Stress	T1	50	20.12 (9.77)	$F(1.62, 48.54) = 22.87$, $p<.001$, $\eta^2p=.43$	T1>T2: $t(49) = 5.93$, $p=.001$, $d = 0.84$	[6.09, 11.71]
	T2	50	11.28 (6.50)		T1<T3: $t(30) = 5.38$, $p=.001$, d =0.97	[7.00, 14.27]
	T3	31	11.23 (6.60)		T2>T3: ns	ns
Fear of self-compassion	T1	50	20.64 (14.42)	$F(1.33, 38.59) = 22.66$, $p<.001$, $\eta^2p=.44$	T1>T2: $t(49) = 5.45$, $p=.001$, $d = 0.77$	[7.34, 15.32]
	T2	50	9.66 (8.29)		T1<T3: $t(29) = 5.85$, $p<.001$, $d = 0.99$	[10.82, 21.18]
	T3	29	6..41 (5.16)*		T2<T3: $t(29) = 3.04$, $p=.01$, $d = 0.44$	[1.19, 6.25]
Avoidant attachment	T1	50	20.08 (8.24)	$F(1.23, 36.94) = 11.55$, $p=.001$, $\eta^2p=.28$	T1>T2: $t(49) = 4.27$, $p=.002$, $d = 0.60$	[2.14, 5.90]
	T2	50	16.12 (6.81)		T1<T3: $t(30) = 3.66$, $p=.$**02**, d =0.66	[2.62, 7.65]
	T3	31	16.48 (6.96)		T2<T3: ns	ns
Anxious attachment	T1	50	24.33 (7.77)	$F(1.48, 44.40) = 10.37$, $p=.001$, $\eta^2p=.26$	T1>T2: $t(49) = 3.90$, $p=.003$, $d = 0.55$	[2.19, 6.58]
	T2	50	19.64 (6.88)		T1<T3: $t(30) = 3.67$, $p=.005$, $d = 0.66$	[2.81, 8.93]
	T3	31	18.61 (7.54)		T2>T3: ns	ns

*Please note: All means, standard deviations, t-tests and confidence intervals are bootstrapped (1,000 samples); *=extreme outlier(s) removed before the mean was calculated so N is smaller (indicated in the degrees of freedom); p values in bold =did not remain significant after controlling for multiple comparisons using the Bonferroni method.*

Assessment of feasibility

We found that 27.93% of the original 179 participants who completed the pre-intervention measures went on to complete the post-intervention outcome measures. Out of these 179 participants, 68 (38%) completed 1 session, 26 (14.5%) completed 2 sessions, 18 (10.1%) completed 3 sessions, 22 (12.3%) completed 4 sessions and 45 (25.1%) completed all 5. The number of sessions completed by the 179 participants correlated significantly with baseline self-compassion, well-being, shame, inadequate, reassured and hated self, depression, anxiety, and fear of compassion. Please see table 5 for a summary of the correlations.

Table 5. Pearson correlations between number of sessions completed and baseline measures.

	No. sessions	Std. Error	BCa 95% CIs
Compassionate attitude	0.15	0.08	[-0.00, 0.30]
Uncompassionate attitude	-0.20*	0.08	[-0.35, -0.06]
Well-being	0.23**	0.08	[0.05, 0.40]
External shame	-0.19*	0.08	[-0.33, -0.03]
Internal shame	-0.21**	0.07	[-0.35, -0.07]
Inadequate self	-0.18*	0.08	[-0.33, -0.03]
Reassured self	0.17*	0.08	[0.01, 0.31]
Hated self	-0.18*	0.08	[-0.33, -0.03]
Depression	-0.20*	0.07	[-0.33, -0.06]
Anxiety	-0.10	0.08	[-0.24, 0.05]
Stress	-0.06	0.08	[-0.20, 0.07]
Fear of compassion	-0.12	0.08	[-0.27, 0.04]
Avoidant attachment	0.01	0.07	[-0.13,0.15]
Anxious attachment	-0.08	0.07	[-0.22, 0.06]

*Please note: Bootstrapping completed with 1,000 samples. *=p<.05, **=p<.001.*

We used this information to create a hierarchal regression model. At step one, we included well-being as a predictor variable and found that it significantly predicted 5% of the variance in sessions completed. In step 2 we added "inadequate self". However, it did not significantly add to the explanation of the variance. We therefore stopped entering predictor variables at this step. Please see table 6 for a summary of the regression statistics.

Table 6. Linear model of predictors of number of sessions completed.

		b	BCa 95% CI	*SE B*	β	*p*
Step 1						
	Constant	0.92	[-0.52, 2.32]	0.67		0.16
	Well-being	0.04	[0.01, 0.08]	0.02	.23	0.01
Step 2						
	Constant	1.83	[0.32, 5.36]	0.94		0.04
	Well-being	0.04	[-0.01, 0.08]	0.02	.19	0.03
	Inadequate self	-0.03	[-0.04, 0.03]	0.02	-.12	0.15

Please note: R^2 = .05 for step 1; ΔR^2 = .01 (p = .13); Confidence intervals and standard errors based on 1,000 samples.

Out of the 50 participants who completed the intervention, 40 completed all 5 sessions (80%), 9 completed 4 sessions (18%) and 1 completed 3 sessions (2%). Descriptive data regarding practice frequency is presented in table 7 and showed that the majority of participants practiced the exercises between 1-4 times a week. The majority of participants (between 62-84% across the 4 weeks and increasing week by week) considered the practices as "quite helpful" or "very helpful", and 82-90% (depending on the week) responded "yes" when asked whether they were able to act or feel as their compassionate self.

Table 7. Frequency of reported practice across the four weeks.

	Week 1		Week 2		Week 3		Week 4	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Never	1	2	5	10	2	4	5	10
1-2 times	9	18	13	26	19	38	20	40
3-4 times	21	42	18	36	17	34	14	28
5 or 6 times	10	20	10	20	7	14	7	14
7 or more times	5	10	2	4	3	6	2	4
Missing	4	8	2	4	2	4	2	4

Discussion

To our knowledge, this is the most thorough assessment to date of an online self-compassion training programme (CMT) aimed at the general population. The results indicated that, compared to the waiting-list control group, the online programme was effective at increasing levels of self-reported self-compassion, well-being and self-reassurance and decreasing levels of uncompassionate feeling towards self, self-criticism (i.e. "hated" and "inadequate" sense of self) internal and external shame, depression, anxiety and stress, levels of fear of compassion, and attachment avoidance and anxiety (all with a medium to large effect size). Furthermore, in those that completed the follow up measures, the positive effects were still prevalent one month later and levels of fear of self-compassion showed even further reductions.

These results extend the preliminary results of other studies of brief online CMT interventions for the general population (e.g. Halamová, Kanovský, Pačutová, Kupeli, 2020) by looking at a more extensive range of outcome measures. We found that participants who completed the intervention showed improvements in both the positive and negative items of the self-compassion scale, whereas Halamová et al. (2020) only found decreases in negative self-relating. We found similar results to those found in more intensive interventions, such as an 8-week CMT group for the general population (Irons & Heriot-Maitland, 2020), which also found medium to large effect sizes. It is encouraging to find such promising results using a low-cost, online format as it will enable widened access to compassion focused interventions for the general population.

CFT was designed for people high in shame and self-criticism and so it is confirming that we found decreases in both internal and external shame, as well as reductions in both types of self-criticism measures; "inadequate self" and "hated self.". Internal shame is conceptualized as self-focused negative evaluations and feelings about the self, whereas external shame is

focused on the experience of the self as seen in a judgemental way by others (Ferreira et al., 2020). Research suggests that self-compassion may moderate the link between shame and psychological distress (Callow et al., 2021), and our findings support the theory that increasing self-compassion helps enable a positive self-view even when an individual has failed to live up to their own expectations, or feels judged or devalued by others (Gilbert, 2009a; Leary et al., 2007).

Comparatively, we found higher rates of anxiety, depression, and stress than in other general population studies (e.g. Irons & Heriot-Maitland, 2020; Matos, Duarte, Duarte, Pinto-Gouveia et al., 2017). It is likely that this is due to the study having been conducted within the context of a pandemic, as there is recent research demonstrating significant increases in the reported mental health symptoms of the general public (Pieh et al., 2021). It may be that the intervention was particularly effective because it was a well-timed intervention for a non-clinical sample going through a transient and difficult time. Previous studies looking at non-clinical samples have found varied effectiveness in reducing symptoms of psychological distress (e.g. Irons & Heriot-Maitland, 2020; Matos, Duarte, Duarte, Pinto-Gouveia et al., 2017), which they suggested may have been due to a floor effect. It may be the case, therefore, that we would not find the same pattern if we were to repeat the study after lockdown restrictions have eased.

Despite concerns that fear of self-compassion might be a barrier to engagement, we found that fear of self-compassion was not related to the number of sessions completed. In fact, we found that the intervention resulted in significant reductions in this trait, with medium to large effect sizes, and that there continued to be reductions one month later. As suggested by (Matos, Duarte, Duarte, Pinto-Gouveia et al. (2017), it appears that although individuals high in fear of compassion might at first respond to compassion with a threat response (Rockliff et al., 2008), as they learn more about the evolution of the human mind and about compassion

ideas and practice, their fears and resistances may settle. This is in line with other CMT interventions that also found a reduction in fear of compassion (e.g. Matos, Duarte, Duarte, Pinto-Gouveia et al., 2017). Surprisingly, the control group reported a significant increase in their fear of compassion score following their four week wait. It may be that completing these measures twice resulted in participants feeling more attuned to their concerns and fears whilst anticipating the start of the intervention.

We also found reductions in anxiety and avoidant attachment traits in participants who completed the intervention. It is thought that CMT may be at least partly effective through stimulating the attachment system (Gilbert, 2009b) and our results support this by showing that participants were led towards greater attachment security. There is a growing evidence base which suggests that self-compassion may mediate the relationship between attachment and psychological health (see chapter 1 for a review) and, in response to this, there has been an increased interest in developing compassion-focused interventions for new mothers (Gammer et al., 2020; Kelman et al., 2018; Lennard et al., 2021; Mitchell et al., 2018).

Finally, in line with other studies on CFT/CMT (e.g. Sommers-Spijkerman et al., 2018) we found that the intervention led to increases in self-reported well-being. However, we also found that baseline well-being levels significantly predicted the number of sessions completed. In a recent study on physical activity levels during the pandemic, Marashi et al. (2021) found a "mental health paradox" whereby mental health was both a motivator and a barrier to physical activity. Due to this, it is clear that a variety of interventions are needed to serve a diversity of individuals. It appears that the course was effective for those who completed it, but shorter courses or courses that include some contact with a professional online may be better suited to the participants who dropped out. Further research is now needed to help determine this.

Limitations and future research

We did not ask participants to disclose mental health diagnoses and we had no exclusion criteria based on this. The mean scores for self-reported anxiety, depression and stress fell within the "mild-moderate" ranges before the intervention and "mild-normal" ranges after the intervention (ranges according to Lovibond & Lovibond, 1995). The DASS-21 has no direct implications for the allocation of participants into diagnostic categories. However, due to the range of scores found in this study ("normal" to "extremely severe"), it is likely that the sample included participants who would reach criteria for a diagnosable mental health condition. Further investigation into the usefulness of this intervention should more thoroughly analyse participants' mental health history and/or assess the efficacy of the intervention within different clinical groups. Analyses could then be conducted to determine whether the intervention can lead to clinically significant reductions in psychopathology.

We asked participants about their previous psychotherapy experience but did not explicitly ask them about when this was, or if they were currently in therapy. We also did not ask participants if they had had experience of CFT or CMT in particular. We cannot therefore rule out that the training programme acted as a "refresher" to participants who had previously attended a CMT group or a "booster" to participants currently in therapy. However, we did find a trend towards the group being more effective in people who had not had previous therapy which suggests that this is not the case.

Due to wanting to keep the questionnaire data anonymised, we were unable to connect participants' email addresses to their progress. This meant that we could not identify participants who had dropped out. It is difficult to determine whether the high attrition rates were due to the nature of the intervention itself, the research design or the pandemic. The pandemic caused a lot of instability, with many losing their usual routine or facing new time

pressures and having to juggle additional responsibilities (e.g. working from home and covering child care). Halamová, Kanovský, Pačutová, and Kupeli's (2020) randomised control trial of an online CMT intervention for the general population started with 144 participants (who completed the pre-measures) but only 46 participants completed the post-measures (32%). Their intervention, however, was only two weeks long, participants were sent an email every day, and they had a larger incentive to complete the programme (the chance to win a tablet). Furthermore, the study was conducted before the pandemic. Anecdotally, some of the participants emailed to apologise for falling behind and/or dropping out. They commented that, although they felt that the programme was helpful and worthwhile, they could not find the motivation or time to make space for it. My research partner conducted interviews with a subset of participants who completed the intervention. It would have been beneficial, however, to have qualitative data from participants who disengaged. We found that baseline well-being scores significantly predicted the number of sessions completed, but the model only explained 5% of the variance. We hypothesised that this percentage might have been higher if we had used a measure of well-being at the point of drop out, rather than at baseline.

A follow up study inviting all participants who disengaged to either fill out a questionnaire or take part in an interview would be an important next step in assessing the training programme. This would help determine the barriers and facilitators to engaging in this type of intervention. My research partner, Jack, was able to uncover important internal and external factors that impacted a subset of participants who completed the programme. However, there may be differing or other factors contributing to engagement/disengagement in those who did not complete it.

Following further research to explore this, we feel that there would be a great opportunity to improve this training programme by developing it to increase motivation and engagement

levels. The materials could be made more readily accessible, for example, by using a mobile phone app where all the sessions and supporting materials could be easily stored and accessed. It is likely that daily reminders to practise would be of benefit. It is also likely, however, that the training programme might be easier to engage with if individuals are not also asked to complete the research questionnaires and practice diaries.

In line with common limitations of this kind of research, we found that participants were mainly female (e.g., Karyotaki et al., 2017) and highly educated. We did not ask participants what their professions were, but participants self-selected themselves and volunteered to take part in the project and so it is likely that the advert would have attracted people already interested in psychology and self-compassion. Furthermore, the results were solely based on self-report measures and the results are, therefore, susceptible to responder bias, i.e. demand characteristics. Further research should aim to strengthen the conclusions made in this study by triangulating the data collected from self-reported measures with physiological measures of the self-soothing system (as done in Matos et al., 2017).

As this was the first study of this newly developed training programme, we used a waiting list group as our control in order to measure feasibility and acceptability. Further research is now needed using a treatment control group to refine and improve the programme's content and format. Post intervention focus groups should also be used to attain thorough feedback on the session content and the programme's materials. Further research is also needed to assess sustainability. We found improvements remained for the four weeks after the end point, but a longitudinal design would help identify whether the effects remain after a longer time period and help determine whether participants could benefit from repeating the programme at a later date or from having a "refresh" session.

Conclusion

This study found promising results for the effectiveness of this new online training programme in cultivating self-compassion and improving the mental health of the general population. Many individuals in need of mental health services are unable to access treatment (Kessler et al., 2005), and it is expected that many more people will need support moving forward due to the continuing effects of the pandemic. Further research is now needed to tailor the intervention's delivery to increase engagement.

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Part Three

Critical Appraisal

“Critical Compassion”

Introduction

In this critical appraisal I will discuss three main areas which I have reflected on during the undertaking of this project. I will first critically appraise the method chosen for measuring self-compassion and then provide my reflections on the use of self-report measures more generally. I will then reflect on my personal journey in choosing this research area and my experiences of undertaking research on the topic of compassion. Finally, I will take a look at the wider ethical considerations of using ancient eastern ideas in modern western society.

Measuring self-compassion

A large part of the reason for the progress in compassion research, is due to the development of its measurement tools (Mascaro et al., 2020). Within the research field of health and social science, however, the most common method of measurement is still self-report measures that use first-person data (Sinclair et al., 2017). The majority of these self-report measures assess compassion as a dispositional or trait-like quality and also ask individuals to summarize their experience retrospectively (Mascaro et al., 2020). The Self-Compassion Scale (SCS; Neff, 2003), for example, asks individuals to score their answers based on how they "typically act towards themselves in difficult times". It is likely, however, that the answers reflect participants' beliefs about themselves rather than their actual feelings, behaviour, or physiological experience (Mauss & Robinson, 2009). An alternative to this is to use a hypothetical scenario-based questionnaire and ask participants to imagine how they would feel and act. This approach, however, is likely to lead to "affective forecasting" – underestimating or overestimating how you might feel in a given situation (Wilson & Gilbert, 2003).

Choosing a method of measurement should be based on the researchers' questions and framework for compassion. For self-compassion, where we are interested in an individual's internal thoughts and emotions, it seems justified to prioritize a first-person perspective. It is generally agreed, however, that compassion is made up of both an emotional and a motivational/behavioural component. It may be that self-report measures are not as accurate at capturing the motivational/behavioural component as, for example, observational scoring by an informant. In our empirical paper we used a compassionate mind diary which asked participants various questions once a week about how easy they found it to be self-compassionate. We used this measure to assess compliance with the programme's materials (i.e., practice rates) rather than as an assessment of levels of compassionate self-relating. With hindsight, however, it might have been useful to have given a similar diary to the waiting-list control group and then used this as an additional experimental measure of self-compassion to strengthen the validity of the findings. In addition, we could have asked participants to fill out the diaries after certain prompts throughout the day in order to provide a momentary assessment, known as "experience sampling" (Mascaro et al., 2020), rather than relying on retrospective or hypothetical reports. Studies using such measures have shown scores are more closely associated with real-time physiology and behaviour patterns (Conner & Barrett, 2012). Doing this, however, would have been time-consuming and it is likely that the data would have still been affected by social desirability and participant expectations, although perhaps to a lesser degree (Mascaro et al., 2020).

All of the studies found in the systematic review used Neff's Self-Compassion Scale (SCS) to measure self-compassion. The prevalence of this measure in previous compassion literature also confirmed it as the most suitable measure of self-compassion for the purposes of the empirical paper, as the findings could be compared to previous studies. It is important, however, to acknowledge that its popularity does not necessarily confirm its validity. While

there are a commonly agreed set of processes for compassion, as with all such approaches the output of a factor analysis depends on what variables were chosen to put into it (Gilbert, 2020), and as highlighted in the previous chapters, the scale has come under heavy scrutiny due to the inclusion of reversely scored negative items (e.g., Muris & Otgaar, 2020).

Due to this concern, we analysed the negative and positive items of the SCS separately, as well as using the Fears of Compassion Scale (FCS; Gilbert et al., 2011) and the Forms of Self-Criticizing/Attacking & Self-Reassuring Scale (FSCRS; Gilbert et al., 2004) to compare their findings. The results of these different measures supported the conclusion that the intervention led to an increase in positive self-relating (i.e., self-compassion and self-reassurance) and a reduction in negative self-relating (i.e., uncompassionate, inadequate and hated self, and fear of self-compassion). As with psychiatric diagnoses, however, there is a problem with relying on statistical approaches to understand the complex processes of a specific syndrome. Statistical approaches may help us identify core ways of being "self-compassionate", but Gilbert (2020) argues that we now need to better understand the different contributing processes to compassion. He suggests that, by understanding how and why compassion evolved, we can understand the basic algorithms and physiological infrastructures needed for its development, as well as the potential facilitators and inhibitors. He argues that in doing so we will be better equipped to develop contexts and interventions that are specifically aimed at stimulating different contributing processes to compassion (Gilbert, 2020).

I have reflected on the reductionist nature of using questionnaires to capture elements of the human experience which feel so rich and complex. There will obviously always be pros and cons of using quantitative or qualitative analysis for this type of research and I was pleased to be completing the research as part of a bigger project which would be seeking a richer understanding of the underlying processes. Before starting this clinical training, my previous

research experience had also involved quantitative methods, and I have always seen the great importance of having robust, scientific, and systematic methods for assessing human behaviour. Working clinically, however, often feels to be at the other end of the spectrum and so I have felt like I had to shift back into a different mode of working. In the field of psychology, we are often treading the line between what feels like opposing disciplines. Clinical psychology reflects both a science and an art; we help clients develop rich and meaningful narratives of their experiences but also discuss psychiatric labels. We also reflect on wide systemic issues of power and oppression but will often work one-to-one with clients to treat their problems. Researching compassion also reflects this contrast and so it feels important to reflect on the wider implications of measuring a concept such as compassion within a scientific framework. Before doing this, I have thought about my own journey of researching compassion.

The compassionate researcher

I left lectures one Friday afternoon at the beginning of March 2020 without any idea that it would be the last time that I would sit with my university cohort in person. The pandemic hit the UK halfway through my doctoral programme and impacted every part of it. My next two placements fell through, and I spent a year working from my bedroom. Our original research project, which involved going into schools and sharing cutting-edge virtual reality technology, had to be abandoned shortly after confirming the schools and receiving ethical approval and we had to start from scratch. Given these setbacks and the context of the pandemic, it felt very fitting to be completing a thesis about "self-compassion" – the ability to be kind and compassionate to oneself in the face of adversity.

Individuals drawn to a career in healthcare, such as clinical psychologists, have been shown to be high in compassion towards others but, rather paradoxically, can also tend to be high in self-criticism (Kotera et al., 2019). I assume that this may have been part of my initial

attraction to the topic; hoping that through study and increased knowledge, I would become a master in the skill myself.

I described clinical psychology as treading the line between opposing disciplines, and religion and science are often thought to be fundamentally opposing. On reflection, however, I have often felt that developing my understanding of evolutionary psychology and reading about the science of "the self" has felt somewhat like a spiritual experience. Spirituality has been defined as the feeling of belonging to something greater and more permanent than oneself (Kaye, 2006). Reading Julian Baggini's (2011) "The ego trick: in search of the self", a philosophical examination of what it means to be "you", transformed my view of selfhood. Understanding that my sense of self was a "trick" (or more accurately a "narrative"), which is performed by the left cerebral hemisphere and thought to separate humans from other species, was both unnerving and liberating. This created a large shift in how I related to myself (one small example being that I dropped the narrative that I was "not a sporty person" and signed up to a marathon) as well as how I wanted to relate to other people. Feeling a true sense of oneness (i.e., Neff's idea of "common humanity"), or understanding human psychology from an evolutionary framework, provided me with the sense of "belonging to something greater" that is often associated with religion. Changing the focus from wanting to remove all suffering to acknowledging that suffering is part of the human experience has felt like an important shift in my understanding and has changed how I relate to myself and to others - with more compassion.

I knew I wanted my thesis to be on the subject of compassion and was looking forward to completing a project using VR technology to give teenagers, known to be particularly high in self-criticism, the opportunity to experience compassion from themselves – or at least a photorealistic avatar version of themselves. Once it was confirmed that this project could not

go ahead, we were rather serendipitously put in touch with Dr Chris Irons and the project that ended up being the foundation of this thesis started to take shape.

Undertaking a research project completely online was unknown territory for me but the pandemic forced us all to adapt quickly to new ways of working. There was an increased sense of global connection caused by the pandemic, but I felt a juxtaposition in providing an intervention that stressed the importance of feeling a shared sense of common humanity, whilst completing the whole project online and without meeting a single participant face to face. I felt a sense of connectedness imagining individuals across the UK engaging in the programme and exercises, yet at the same time it was difficult reading participants' questionnaire data (e.g., some reporting that they "felt isolated") and, unlike in my clinical work, being unable to offer direct contact.

Although lockdown restrictions may ease, it is predicted that the shift to online formats will continue to develop, and this leaves me with mixed feelings. On the one hand, I feel excited at the possibility for new interventions which can reach a much larger and diverse group of people, and on the other hand it is hard to not feel a sense of loss. Given the reality of long NHS waiting lists, however, it is difficult to ascertain whether this is a real loss or the loss of an imagined and idealistic image of what compassion interventions should be. The field of compassion is always evolving but it can be helpful to take a step back and reflect on its origins in order to determine the path forward it should take.

The origins of self-compassion

This thesis highlighted the exponential growth rate of newly published research on the topic of compassion and the rise of related interventions in clinical settings. Self-compassion is currently seen as a "hot new topic" in popular media, with recent articles in the Guardian (Hunt, 2021) and Forbes magazine (Zucker, 2020). The concept of self-compassion, however, is not new and originates from ancient philosophical and religious teachings.

The foremost example of this is Buddhism, which originated approximately 2,500 years ago and is largely based on the teachings of Siddhartha Gautama. He is said to have gained enlightenment and become the Buddha (or The Awakened One) through his study of the mind while meditating. Siddhartha Gautama famously concluded that our lives are shaped by our minds and that we become what we think. Over the centuries that followed, the Buddhist philosophers of India created an intellectual tradition combing religion with psychology and philosophy, with a large focus on deliberately developing compassion (Dalai Lama, 1995). This generated many different schools of thought which spread through Asia.

Due to the Buddhist origins of the concept, I have questioned to what degree the use of "compassion" within the western scientific community may be seen as a form of cultural appropriation. "Mindfulness", another concept with eastern religious origins, was brought to the west in the 1970s, when Jon Kabat-Zinn founded the Center for Mindfulness at the University of Massachusetts. He trained with various Buddhist teachers before developing the influential and widely used "mindfulness-based stress reduction programme" (MBSR). Despite its roots, Kabat-Zinn intentionally avoided references to Buddhism (Cheung, 2018).

Critics of the secular use of mindfulness have argued against the splitting of mindfulness from the teachings of its ethical components. Purser and Loy (2013), for example, have argued that promoting the use of mindfulness as stress reduction without an ethical basis only

patches up the surface symptoms without addressing the systemic or institutional causes. In support of this, Hickey (2010) has expressed concern about "medicalizing meditation" (e.g., the use of mindfulness-based cognitive therapy for the treatment of anxiety and depression) because it puts the onus on the individual while ignoring social structural problems.

Since the 1970s, mindfulness has grown exponentially in popularity and selling mindfulness has turned into a lucrative business. Mindfulness has been commodified through books, classes, retreats, yoga workouts, and smartphone apps (Ferguson, 2016), and it has also been utilised by a wide range of corporations as a tool for staff well-being, with the underlying hope that it will increase worker productivity. This is a far cry from its collectivist, religious and moralistic roots. Alongside the clear ethical concerns of misusing mindfulness as another self-improvement fad, it also raises the issue of whether this trend reflects darker and entrenched neo-colonial attitudes (Poceski, 2020). Clearly there is a need to weigh up the potential harm caused by using such interventions as well as the harm caused by not using them, as the evidence base for the clinical utility of Buddhist-derived interventions is unequivocal.

Cultural appropriation has been defined as the "the unacknowledged or inappropriate adoption of the customs, practices, ideas, etc. of one people or society by members of another and typically more dominant people or society" (Oxford England Dictionary, 2018). Social media is full of heated accusations and debates surrounding the topic of cultural appropriation. These debates have understandably become more intense and frequent in recent years as more difficult conversations about racism are opening up. This is likely to be in part due to the use of social media shining an unfiltered spotlight on numerous stark and horrifying examples of racism and white supremacy in today's society, as well as offering a platform which encourages polarizing views. This has left parts of society feeling inspired to

self-reflect and do more, but others are left feeling victimised, demonised and defensive. Twitter wars can often feel like a trivialisation of important topics, but discussions around cultural appropriation are crucial so that the views of individuals of ethnic minorities are not dismissed in multicultural societies.

In a recent paper by Lenard and Balint (2020) the differences between cultural appropriation, cultural appreciation, and cultural exchange are discussed. They argue that for an act to be cultural appropriation, it must meet four conditions: a "taking" condition (i.e., the idea, style or practice did not originate with the appropriator), a "value" condition (i.e., the thing being taken needs be of value to those it is taken from, and this value needs to be claimed in some way), a "knowledge, or culpable ignorance" condition (i.e. that it is done with knowledge of its value or the appropriator ought to have known), and a "contested context" condition (i.e., its use by other parties must be challenged by those from whom it is taken). They argue that the "wrongness" of such an act is amplified when there is a power imbalance (i.e., those with more power have taken from those with less) and when a profit is being made that goes directly to the appropriator.

Much of the theoretical literature pertaining to self-compassion has Buddhist theories/practices at its core. For example, Neff's (2003) conceptualisation of self-compassion is tied closely to Buddhist practice, and Gilbert (2005) highlights how compassion is intimately intertwined with Buddhist approaches. They both, quite rightly, pay tribute to these influences in their thinking. Compassion-focused therapy (CFT), however, is also rooted in an evolutionary functional analysis of human behaviour. It has integrated Buddhist insights with scientific understanding of the origins and functions of the brain. On reflection, and despite its similarities with religious teachings, I would conclude that compassion-focused interventions should not be considered an appropriation. You could argue that it meets the "value", "taking" and "knowledge" conditions put forward by Lenard

and Balint (2020) but, due to the humanitarian motives and benefits of its use, it is unlikely to meet the last condition - that its use is "contested". Perhaps it is not cultural appropriation that should concern us, but the misuse of the ideas and practices that have been taken. As with mindfulness, it will be important to keep an eye on how these practices are being used. For example, there has been an increase in self-compassion interventions being delivered to frontline health care workers in the face of the pandemic. Conversations need to be had about whether this is an important and crucial development, or a useful tactic to hide wider systemic injustices (e.g., not increasing pay or reducing working hours), but most likely it is a combination of the two.

All being said, given that I am a white, western woman, with many known (and potentially more unknown) blind spots, I will keep these conclusions tentative, the discussion open and my critical eye focused on whether such compassionate interventions continue to be used with compassionate motives.

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Appendices

Appendix A: Contributions to the joint project

The empirical paper was conducted as part of a joint project with another trainee clinical psychologist at UCL, Jack Deacon. The aim of Jack's part of the research project was to investigate the participants' subjective experiences of engaging with online self-compassion training. Further details of this project can be found in his submission: Deacon, J. (2021). 'A way of being in the world': an exploration of the experience of developing self-compassion through brief online training. Unpublished doctoral dissertation. University College London, London.

Parts of the project completed together: overall study design, research governance, setting up intervention content online, participant recruitment via social media.

Parts completed my me: design of quantitative analysis and selection of questionnaires, uploading questionnaires onto Qualtrics, setting up system of contacting participants and managing their engagement with the programme, data analysis and paper write up.

Parts completed by Jack: design of qualitative analysis and interview script, interviews of 15 participants, thematic data analysis and paper write up.

Appendix B: Ethical approval

A4	**Approval from the Departmental Ethics Committee**	
	(Approval cannot be given by the principal researcher of this project – if necessary the application must be sent to an Ethics Officer from a different Research Department, or to the College Ethics Committee, for approval)	
	Declaration by the Research Department Ethics Chair: **I have reviewed this project and I approve it.** X **The project is registered with the UCL Data Protection Officer and a formal signed risk assessment form has been completed.**	
	Allocated Departmental Project ID Number for the approved application: **CEHP/2020/581**	
	Name of the Research Department Ethics Chair (type in): Jean-Baptiste Pingault Date: 01/08/2020	[redacted]

Appendix C: Information sheet for participant

Developing self-compassion online: Assessing the effectiveness and acceptability of a brief online intervention

Department: Research Department of Clinical, Educational and Health Psychology

Name of the Researchers: Dr Chris Irons, Dr John King, Dr Michelle Wilson, Dr Clare Northover and Jack Deacon

Name of the Principal Researchers: Dr Chris Irons, Clinical Psychologist and Director at 'Balanced Minds'

Thank you very much for showing an interested in our research project. You are being invited to take part in the evaluation of an online self-compassion training programme.

Before you decide to take part in this evaluation study, it is important for you to understand why it is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish to. Please ask us if there is anything that is not clear or you would like additional information. You can email us at clare.northover.18@ucl.ac.uk or j.deacon.17@ucl.ac.uk.

Online self-compassion training
The content of this online training programme is based on Compassion-Focused Therapy and designed by an expert in this area. The aim of the training is to help individuals develop their understanding and skills in self-compassion. It will be a four-session online course, with each weekly session lasting approximately 30 minutes. Following the sessions, participants will have access to supporting reading material and a 5-10 minute audio exercise, which participants are encouraged to practice each day before the subsequent session.

Purpose of this evaluation study
This study aims to evaluate the feasibility, acceptability and effectiveness of the online self-compassion training. Specifically, if you participate in the study then you will anonymously complete some online questionnaires in relation to the training. We will also invite you to express interest in taking part in further follow-up interviews about your experience of the training at a later date.

Can I take part in the study?
You are being invited to take part in this evaluation study because you have expressed an interest. You are eligible to partake if you are over 18 years old, are fluent in English and have access to the internet. We are interested in evaluating this intervention and your experience of it.

Do I have to take part?
Participation in this study is voluntary. You do not need to agree to participate in the training nor complete the questionnaires, and you can withdraw from the evaluation study at any stage without giving a reason and without any negative consequences.

What will happen to me if I take part?
If you decide to take part in the evaluation study, you will first complete the consent form and then provide us with your email address. You will then be randomly assigned to either Group 1 or Group 2. Both groups will be emailed a link to complete a series of questionnaires. This will roughly take 5-10 minutes. Group 1 will then be sent the link to session 1 of the online self-compassion training programme. If you are in Group 2, you will be sent the same link after a four week delay.

We will ask you to complete the questionnaires at three time points: just before the training, just after finishing the training and one month later, as well as a weekly diary to record how much you have been able to use the materials. These questionnaires will assess a range of topics, including stress, self-criticism, self-compassion and overall mental well-being. The questionnaires will also explore your experience of the training, e.g. whether you feel it has been helpful or not. We will review responses to the questionnaires to explore the potential benefits of the training.

All information that you provide will remain strictly anonymous and cannot be linked to any identifiable details (e.g. your email address).

All participants will be asked if they would like to take part in a follow-up interview, and we will contact you separately regarding this if you express an interest.

Are there possible disadvantages and/or risks in taking part?
We do not anticipate any disadvantages or risks to taking part in this evaluation study. In the unlikely event that completing the questionnaires, taking part in the self-compassion training or giving feedback becomes distressing, you are free to withdraw and you will be able to contact the Principal Researcher to discuss what action might be helpful.

What are the possible benefits of taking part?
The aim of the online training is to help individuals gain a better understanding of self-compassion and hopefully help them to strengthen this ability. This training will eventually require a fee but you will have access to it for free. Participating in the evaluation study will help us to determine the acceptability and feasibility of the online training, as well as its effectiveness. This will help us to improve it and its future delivery for the general population.

What if something goes wrong?
If you wish to make a complaint about this evaluation study, please contact the Principal Researcher at chris@balancedminds.com. If you feel that your complaint has not been handled to your satisfaction, you can contact the Chair of the UCL Research Ethics Committee at ethics@ucl.ac.uk. If something happens to you during or following your participation in this evaluation study that you think might be linked to taking part, please contact the Principal Researcher. If you have any concerns about the online training, then please also discuss this with the Principal Researcher.

Will my taking part in this study be kept confidential?
Any responses you give are completely confidential and anonymous and will be stored according to the Data Protection Act 2018. Only the research team will have access to the data. The study is conducted through a web survey run using a programme called Qualtrics.

The web survey does not leave any trace of individual participants other than recording the date and time of responses. In addition, you will not be identifiable in any ensuing reports or publications.

Limits to confidentiality
You will need to provide us with an email address so that we can send you the links to the online self-compassion training and the questionnaires. However, it will not be possible to identify you from the completed questionnaires because they are anonymous and confidential. Nonetheless, if you do discuss any of your responses with us and there is a risk to self or others, then the Principal Researcher for this evaluation study may need to agree that confidentiality needs to be breached in order to safeguard yourself or others. If this were to happen, we would try to discuss this with you before we need to share any information. Confidentiality will therefore be respected unless there are compelling and legitimate reasons for this to be breached.

What will happen to the results of the study?
Results of this study will be used to inform future studies and your feedback will help us in further developing this compassion-based intervention. The study will enable us to gauge the feasibility and acceptability of the delivering the intervention for the general population and will therefore provide key insights for follow-up studies. Dr Clare Northover and Jack Deacon will write up the results for their DClinPsy theses. We will also aim to publish the results in a peer-reviewed journal within the next year. You can contact the researchers directly using their contact details at the start of this information sheet, to ask for a copy of any publication on the data. You will not be identifiable in any report or publication.

Local Data Protection Privacy Notice
Notice:
The controller for this project will be University College London (UCL). The UCL Data Protection Officer provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk

This 'local' privacy notice sets out the information that applies to this particular study. Further information on how UCL uses participant information can be found in our 'general' privacy notice.

The information that is required to be provided to participants under data protection legislation (GDPR and DPA 2018) is provided across both the 'local' and 'general' privacy notices.

The categories of personal data used in the study will be as follows:
- Gender
- Age (through broad categories)
- Ethnicity (through broad categories)
- Highest level of education
- Work status
- Previous experience of therapy
- Where you saw the study being advertised

The lawful basis that will be used to process your personal data are: 'Public task' for personal data.

Your personal data will be processed so long as it is required for the research project. If we are able to anonymise or pseudonymise the personal data you provide we will undertake this, and will endeavour to minimise the processing of personal data wherever possible.

If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk.

As stated above, you have the right to withdraw from the study at any time and to request that all your data are immediately destroyed.

Who is organising and funding the research?
The study is being organised by the Research Department of Clinical, Educational and Health Psychology, University College London (UCL).

Complaints
If you wish to complain about our use of personal data, please send an email with the details of your complaint to the UCL Data Protection Officer so that they can look into the issue and respond to you. Their email address is data-protection@ucl.ac.uk. You also have the right to lodge a complaint with the Information Commissioner's Office (ICO) (the UK data protection regulator). For further information on your rights and how to complain to the ICO, please refer to the ICO website: https://ico.org.uk/

Ethical review of the study
This study has been ethically approved by the UCL Division of Psychology and Language Sciences ethics committee.

Contact for further information
If you have any further questions about this study before or after participation, please feel free to contact us and we will be happy to answer any questions: clare.northover.18@ucl.ac.uk or j.deacon.17@ucl.ac.uk.

Thank you for reading this information sheet and for considering taking part in the evaluation of this online self-compassion training. If you are still interested in taking part in our research study, then please complete our consent form on the next page.

Appendix D: Consent form

CONSENT FORM FOR PARTICIPANTS

Please complete this form after you have read the Information Sheet

Study Title: *Developing self-compassion online: Assessing the effectiveness and acceptability of a brief online intervention*

Department: Research Department of Clinical, Educational and Health Psychology

Name of the Researchers: Dr Chris Irons, Dr John King, Dr Michelle Wilson, Dr Clare Northover and Jack Deacon

Name of the Principal Researcher: Dr Chris Irons, Clinical Psychologist and Director at 'Balanced Minds'. If participants wish to contact Dr Chris Irons they can do so via email (chris@balancedminds.com).

Name and Contact Details of the UCL Data Protection Officer: Alexandra Potts, email: data-protection@ucl.ac.uk

This study has been approved by the UCL Research Ethics Committee: Project ID number: XXXX

Thank you for considering taking part in this study. The Participant Information Sheet provides detailed information about this evaluation study. If you have any questions arising from the Information Sheet, please contact Dr Chris Irons at chris@balancedminds.com before you decide whether to participate.

I confirm that I understand that by clicking the "Start" button below I am consenting to ALL the below elements of the study. If I do not consent to all the below elements of the study, I should not click on the "Start" button to begin the survey.

Statement	**Tick Box**
I confirm that I have read and understood the Information Sheet for this evaluation study	
I have had an opportunity to consider the information and what will be expected of me	
I have also had the opportunity to ask questions which have been answered to my satisfaction. I would like to take part in completing the questionnaires for this evaluation study	
I consent to participate in the evaluation study	
I understand that my responses on questionnaires will be used for the purposes explained to me	
I understand that according to data protection legislation, 'public task' will be the lawful basis for processing	

I understand that the researchers will use my email address to contact me and send me the links for the online self-compassion intervention and evaluation study. They will delete this email address from their records as soon as the study is over or if I decide to withdraw early.	
I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified	
I understand that confidentiality will be respected unless there are compelling and legitimate reasons for this to be breached. If this were the case I understand that I would be informed of any decision that might limit my confidentiality	
I understand that my data gathered in this study will be stored anonymously and securely. It will not be possible to identify me in any publications	
I understand that my information may be subject to review by responsible individuals from the University for monitoring and audit purposes	
I understand the potential risks of participating and the support that will be available to me should I become distressed during the course of the study	
I understand the benefits of participating	
I understand that the data will not be made available to any commercial organisations but is solely the responsibility of the researchers undertaking this study	
I understand that I will not benefit financially from this study or from any possible outcome it may result in in the future	
I agree that my anonymised data may be used by others for future research. [No one will be able to identify you when this data is shared.]	
I consent to my questionnaire responses being stored anonymously, using password-protected software and will be used for analyses, quality control, and research purposes	
I hereby confirm that I understand the inclusion criteria as detailed in the Information Sheet	
I hereby confirm that I understand why I have been invited to take part in this evaluation study and I am eligible to take part	
I am aware of who I should contact if I wish to lodge a complaint	
I would be happy for the data I provide to be archived at University College London	

_____

Date

Appendix E: Debrief form

Debrief

Study Title: Developing self-compassion online: Assessing the effectiveness and acceptability of a brief online intervention.

Department: UCL's Research Department of Clinical, Educational and Health Psychology

Name of the researchers: Dr Chris Irons, Dr John King, Dr Michelle Wilson, Dr Clare Northover and Jack Deacon

Name of the Principal Researcher: Dr Chris Irons, Clinical Psychologist and Director at 'Balanced Minds'. If participants wish to contact Dr Chris Irons they can do so via email (chris@balancedminds.com).

Thank you very much for participating!

The self-compassion training was designed to help people relate to themselves in a kind and compassionate way, and this study had a couple of aims in relation to this.

As this was a newly developed training programme, one of our aims was simply to see how acceptable and useful it is for its users. To gauge this, we will be looking at your written feedback as well as what some of you shared in follow-up interviews with us.

The training was based on a type of therapy called Compassion-Focused Therapy, which is aimed at reducing shame and self-criticism, so we were also specifically interested in whether the training would have this effect for people. This is why we asked you to fill in a range of questionnaires before and after the training programme.

If participating in this study brought up any difficult thoughts or emotions that you would like to explore further, then please see below for information on available support organisations. This is by no means an exhaustive list and there are multiple avenues available for support.

If there is anything else you would like to ask or talk with us about, please feel free to contact our Principle Researcher, who will be happy to answer any questions:

Dr Chris Irons (Clinical Psychologist and Director at 'Balanced Minds') Email: chris@balancedminds.com

Improving Accessing to Psychological Therapies (IAPT)
- IAPT services offer a range of NHS-funded psychological therapies. You can self-refer or get referred via your GP. You can find your nearest service at http://www.nhs.uk/Service-Search/Psychological%20therapies%20(IAPT)/LocationSearch/10008

Samaritans
- Samaritans offer confidential, non-directive emotional support. You can call them for free on 116 123 or email them at jo@samaritans.org

Mind
- Mind provide advice and support to people experiencing a mental health difficulties. You can call them on 020 8519 2122 or email them at supporterservices@mind.org.uk

Other organisations

- This link provides a list of many other mental health organisations, charities and support groups that can offer guidance https://www.nhs.uk/conditions/stress-anxiety-depression/mental-health-helplines/

Thank you for reading this debrief sheet and thank you again for taking part in the study!

Please click through to the next page to ensure your responses are saved and to enter a prize draw.

Appendix F. Social media advert

Are you self-critical and hard on yourself when faced with life's difficulties? Do you think you might benefit from learning how to be more self-compassionate?

We are offering the opportunity to access a brief online self-compassionate training programme designed and delivered by Dr Chris Irons (Clinical Psychologist & Director of Balanced Minds) for free. Jack and I (Trainee Clinical Psychologists at University College of London) are conducting a research project with the aim of reviewing the acceptability, feasibility, and effectiveness of this online intervention.

If you are interested in taking part in this research and accessing the online programme, then please follow the link below to read our information sheet which will outline what is involved in more detail. If you know anyone else who you think might benefit from this programme, then please share. Thank you very much!

https://uclpsych.eu.qualtrics.com/.../SV_6qTnc8sAgy6H24J

Appendix G: Measures and practice diary

The Self-Compassion Scale-Short Form (SCS-SF; Raes, Pommier, Neff & Van Gucht, 2011)

How I typically act towards myself in difficult time

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

		1 Almost Never	2	3	4	5 Almost Always
1	When I fail at something important to me, I become consumed by feelings of inadequacy					
2	I try to be understanding and patient towards those aspects of my personality I don't like					
3	When something painful happens, I try to take a balanced view of the situation					
4	When I'm feeling down, I tend to feel like most other people are probably happier than I am					
5	I try to see my failings as part of the human condition					
6	When I'm going through a very hard time, I give myself the caring and tenderness I need					
7	When something upsets me, I try to keep my emotions in balance					
8	When I fail at something that's important to me, I tend to feel alone in my failure					
9	When I'm feeling down, I tend to obsess and fixate on everything that's wrong.					
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 disapproving and judgmental about my own flaws and inadequacies					
12	I'm intolerant and impatient towards those aspects of my personality I don't like					

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Tennant et al, 2007)

Below are some statements about feelings and thoughts.

Please select the box that best describes your experience of each over the last 2 weeks.

		None of the time	Rarely	Some of the time	Often	All of the time
1	I've been feeling optimistic about the future					
2	I've been feeling useful					
3	I've been feeling relaxed					
4	I've been feeling interested in other people					
5	I've had energy to spare					
6	I've been dealing with problems well					
7	I've been thinking clearly					
8	I've been feeling good about myself					
9	I've been feeling close to other people					
10	I've been feeling confident					
11	I've been able to make up my own mind about things					
12	I've been feeling loved					
13	I've been interested in new things					
14	I've been feeling cheerful					

External and Internal Shame Scale (EISS; Ferreira et al., 2015)

Please answer the below questions:

I feel that…

		Never 0	1	2	3	Always 4
1	…people around me see me as not being up to their standards					
2	…other people don't understand me					
3	…others are judgmental and critical of me					
4	…other people see me as uninteresting					
5	…I am isolated					
6	…I am different and inferior to others					
7	…I am unworthy as a person					
8	…I am judgmental and critical of myself					

The Forms of Self-Criticizing/Attacking & Self-Reassuring Scale (FSCRS; Gilbert et al., 2004)

Please rate how well each item describes you:

		Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
1	I am easily disappointed with myself.					
2	There is a part of me that puts me down					
3	I am able to remind myself of positive things about myself					
4	I find it difficult to control my anger and frustration at myself					
5	I find it easy to forgive myself.					
6	There is a part of me that feels I am not good enough.					
7	I feel beaten down by my own self-critical thoughts.					
8	I still like being me					
9	I have become so angry with myself that I want to hurt or injure myself.					
10	I have a sense of disgust with myself					
11	I can still feel lovable and acceptable.					
12	I stop caring about myself.					
13	I find it easy to like myself.					
14	I remember and dwell on my failings.					
15	I call myself names.					
16	I am gentle and supportive with myself.					
17	I can’t accept failures and setbacks without feeling inadequate.					
18	I think I deserve my self-criticism					
19	I am able to care and look after myself.					
20	There is a part of me that wants to get rid of the bits I don’t like					
21	I encourage myself for the future.					
22	I do not like being me.					

The Depression, Anxiety and Stress Scale – 21 Items (DASS-21; Lovibond & Lovibond, 1995)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

		0 Did not apply to me at all	1 Applied to me to some degree, or some of the time	2 Applied to me to a considerable degree, or a good part of time	3 Applied to me very much, or most of the time
1	I found it hard to wind down				
2	I was aware of dryness of my mouth				
3	I couldn't seem to experience any positive feeling at all				
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)				
5	I found it difficult to work up the initiative to do things				
6	I tended to over-react to situations				
7	I experienced trembling (e.g., in the hands)				
8	I felt that I was using a lot of nervous energy				
9	I was worried about situations in which I might panic and make a fool of myself				
10	I felt that I had nothing to look forward to				
11	I found myself getting agitated				
12	I found it difficult to relax				
13	I felt down hearted and blue				
14	I was intolerant of anything that kept me from getting on with what I was doing				
15	I felt I was close to panic				
16	I was unable to become enthusiastic about anything				
17	I felt I wasn't worth much as a person				
18	I felt that I was rather touchy				

19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)				
20	I felt scared without any good reason				
21	I felt that life was meaningless				

Fears of Compassion Scale (Gilbert, et al., 2011)

Below are a series of statements that we would like you to think carefully about and then circle the number that best describes how each statement fits you.

		0 Don't agree at all	1	2 Somewhat agree	3	4 Completely agree
1	I feel that I don't deserve to be kind and forgiving to myself					
2	If I really think about being kind and gentle with myself, it makes me sad					
3	Getting on in life is about being tough rather than compassionate					
4	I would rather not know what being 'kind and compassionate to myself' feels like					
5	When I try and feel kind and warm to myself, I just feel kind of empty					
6	I fear that if I start to feel compassion and warmth for myself, I will feel overcome with a sense of loss/grief					
7	I fear that if I become kinder and less self-critical to myself then my standards will drop					
8	I fear that if I am more self-compassionate, I will become a weak person					
9	I have never felt compassion for myself, so I would not know where to begin to develop these feelings					
10	I worry that if I start to develop compassion for myself, I will become dependent on it					
11	I fear that if I become too compassionate to myself, I will lose my self-criticism and my flaws will show					
12	I fear that if I develop compassion for myself, I will become someone I do not want to be					
13	I fear that if I become too compassionate to myself others will reject me					

14	I find it easier to be critical towards myself rather than compassionate					
15	I fear that if I am too compassionate towards myself, bad things will happen					

The Experiences in Close Relationship Scale – Short Form (ECR-S; Wei, Russell, Mallinckrodt & Vodel, 2007)

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.

		1 Disagree Strongly	2	3	4 Neutral / Mixed	5	6	7 Agree Strongly
1	It helps to turn to my romantic partner in times of need.							
2	I need a lot of reassurance that I am loved by my partner.							
3	I want to get close to my partner, but I keep pulling back.							
4	I find that my partner(s) don't want to get as close as I would like.							
5	I turn to my partner for many things, including comfort and reassurance							
6	My desire to be very close sometimes scares people away.							
7	I try to avoid getting too close to my partner.							
8	I do not often worry about being abandoned.							
9	I usually discuss my problems and concerns with my partner.							
10	I get frustrated if romantic partners are not available when I need them.							
11	I am nervous when partners get too close to me.							
12	I worry that romantic partners won't care about me as much as I care about them.							

Compassionate Mind Practice Diary (Taken from Matos et al., 2017)

Practice frequency:	How often did you practice the exercises during this week?	Never		1-2 times		3-4 times		5 or 6 times		7 or more times per week	
Helpfulness:	How helpful did you find these practices?	Unhelpful		Not very helpful		Neither helpful nor unhelpful		Quite helpful		Very helpful	
Presence of embodiment:	Looking back over the week, can you recall acting or feeling as your compassionate self?	Yes					No				
	In which situations did you find yourself acting or feeling as your compassionate self?										
Frequency:	How often did you act as your compassionate self?	Never 1	2	3	4	5	6	7	8	9	A lot of the time 10
	How often did you feel as your compassionate self?	Never 1	2	3	4	5	6	7	8	9	A lot of the time 10
Power:	How powerful were your compassionate feelings?	Not at all powerful 1	2	3	4	5	6	7	8	9	Very powerful 10
Easiness:	How easy was it it act as your compassionate self?	Not easy at all 1	2	3	4	5	6	7	8	9	Very easy 10
Duration:	How long did your compassionate feelings last?	Fleeting 1	2	3	4	5	6	7	8	9	Most of the day 10
Sothing effect:	How comforting were your compassionate feelings?	Not comforting at all 1	2	3	4	5	6	7	8	9	Very comforting 10
Impact:	How was the impact of your compassionate actions?	Very negative 1	2	3	4	5	6	7	8	9	Very positive 10