

Evaluating the impact the Self-Compassion App has on levels of compassion, psychological distress and well-being

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Abstract

Introduction: The Self-Compassion App is the first commercially available, smart-phone app based upon the ideas and practices of Compassion-Focused Therapy. Through 28 sessions, the app supports individuals to develop compassionate minds and, in doing so, promotes well-being and reduces psychological distress (e.g. self-criticism and shame).

Aim: This study evaluated the impact the app had on participants' levels of compassion, well-being, self-criticism and psychological distress.

Methodology: Fifty-two participants—consisting of staff and students at the University of Salford—took part in this study. Pre-, post- and follow-up measures were collected to explore changes in levels of compassion, self-criticism, emotion regulation, well-being and psychological distress.

Findings: Statistically significant increases were observed in levels of self-compassion, self-reassurance, emotion regulation skills and well-being. Significant reductions were found in self-criticism, anxiety and stress, and post-study, participants became more open to receiving compassion from others.

Implications: Results from this study are promising and suggest that using the Self-Compassion App reduces psychological distress and enhances psychological well-being. Considering interventions that utilise technology with the aim of boosting well-being, levels of compassion and reducing self-criticism are potentially important given the difficulties that many students and educators experience, and the current waitlist times for psychological help and support.

Further Research: A randomised control trial and longitudinal study would be beneficial to explore the long-term benefits of using the app. Further studies, in clinical and non-clinical populations, will clarify how the app might benefit people and what type of engagement is necessary to derive change.

KEYWORDS

compassion focused therapy, compassionate mind training, mobile technology, psychotherapy and counselling approaches, self-help app, well-being, mental health

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1 | INTRODUCTION

In recent years, there has been a rapid increase in compassion-focused research internationally, with studies worldwide consistently reporting benefits to mental and physical health through focusing on the cultivation of compassion for others and oneself (Best et al., 2021; Gilbert, 2017, 2019; Kirby, Doty, et al., 2017; Northover et al., 2021; Petrocchi et al., 2023; Seppälä et al., 2017). Research findings suggest that compassion training contributes to changes in the functioning of the autonomic nervous system, particularly the vagus nerve (Di Bello et al., 2020; Petrocchi & Cheli, 2019) and changes in neurophysiological responses in the brain (Kim et al., 2020).

Compassion-focused therapy (CFT) and its associated format of compassionate mind training (CMT) were created as a transdiagnostic approach, initially for people with high levels of shame and self-criticism who struggled with traumatic experiences in their lives (Gilbert, 2010, 2014). CFT and CMT are grounded in a variety of sciences, including evolutionary, attachment and social mentality theory, along with research from neuroscience and neurophysiology (Gilbert, 2010, 2014, 2020). Outcome studies have shown that CFT may be an effective psychotherapeutic approach for a variety of mental health difficulties, such as depression, anxiety, post-traumatic stress and personality disorders (Beaumont et al., 2012; Beaumont, Irons, et al., 2016; Kirby, Tellegen, & Steindl, 2017; Leaviss & Uttley, 2015; Lucre et al., 2024; Petrocchi et al., 2023). The growing interest in compassion research has led to an increase in the creation of compassion programmes both for clinical and non-clinical populations internationally (Kirby, 2017; Kirby, Doty, et al., 2017; Leboeuf et al., 2022; Matos et al., 2024; Petrocchi et al., 2023). CMT programmes have been found useful for members of the public (Irons & Heriot-Maitland, 2020), healthcare professionals enrolled on a CFT training module (Beaumont et al., 2021) and for staff and students in educational settings (Beaumont et al., 2017; Bell et al., 2017; Maratos et al., 2019; Matos et al., 2017, 2024).

CFT and CMT involve psychoeducation on the nature of compassion that involves three flows—compassion for self, compassion for others and receiving compassion from others. Psychoeducation also involves developing an understanding of the evolved nature of the human mind and body. Evolution has left us with 'tricky brains' that get caught up in thinking-feeling loops, which are 'not our fault' and proposes that human emotions evolved to serve specific functions that are represented by three systems—threat, drive and soothing (Gilbert, 2009, 2014, 2020). Within CFT and CMT, exploration of common fears, blocks and resistances to compassion are an integral part of the process (Gilbert, 2009, 2014, 2020). CMT comprises a variety of physiological and psychological practices, such as attention training, mindfulness, soothing rhythm breathing, compassionate thinking, compassionate behaviour and compassion-based imagery (Gilbert, 2009; Irons & Beaumont, 2017). CMT has been found to increase self-compassion, positive emotions and behaviours associated with self-reassurance and has been found to

Implications for practice and policy

- Apps have the potential to help boost mental health; however, further robust research is necessary to test the efficacy of mobile app programmes (Wang et al., 2018).
- Apps such as the Self-Compassion App could be a useful tool for people waiting for psychological support. This is an important consideration given the current waitlist times for counselling and psychotherapy in the United Kingdom.
- Considering the recent pandemic, and the impact it has had on people's well-being, it is important that the counselling and psychotherapy community examine and test interventions that utilise technology with the aim of boosting well-being and levels of compassion and reducing self-criticism.
- Anecdotally, clients in therapy, along with their therapists, have reported finding that the app may also support the process of compassion-focused therapy (CFT). Given this, and the data from this study, it may be that using the app alongside CFT sessions could be beneficial and help aid the therapeutic process for some people.

reduce self-criticism, feelings of shame and psychological distress (Beaumont, Durkin, et al., 2016; Irons & Heriot-Maitland, 2020; Lucre et al., 2024; Matos et al., 2017; McEwan & Gilbert, 2016; Petrocchi et al., 2023). CMT has also been found to activate the parasympathetic nervous system and increase heart rate variability (Kirby, Tellegen, & Steindl, 2017).

2 | THE NEED TO BROADEN ACCESS TO COMPASSIONATE MIND TRAINING PROGRAMMES

Whilst CFT and CMT have shown promising results in both reducing distress and increasing well-being, to date, there have been few ways for people to access these, outside of accessing therapy or using a self-help book. Mobile technology based on CFT could potentially play a role in filling this gap.

There have been well reported increases in psychological distress across many populations, particularly since the COVID-19 pandemic (Cénat et al., 2021; Paredes et al., 2021; Taylor et al., 2020). One group often experiencing high levels of psychological distress are university students (Hughes et al., 2023; Schmits et al., 2021). Auerbach et al. (2018) report that there has been an increase in students seeking support from university well-being services, with many students reporting symptoms of stress, depression and anxiety. Alongside students, educators have also reported increasing levels of psychological distress (Cortés-Álvarez et al., 2023), with researchers proposing

that CMT may help educators cultivate compassion, regulate emotions and ease self-critical judgement (Beaumont et al., 2021, 2022; Maratos et al., 2019; Matos et al., 2024).

Digital interventions and, in particular, smartphone apps offer the opportunity to help meet increasing demands, with research suggesting that self-guided, smartphone apps may help to reduce the symptoms associated with psychological distress and increase levels of self-compassion (Andersson et al., 2021; Chandrashekar, 2018; Goldberg et al., 2020; Schaab et al., 2024). Ninety-four percent of 18- to 33-year-olds are dedicated to making personal improvements, which potentially creates a demand for practice-based apps (Beaton, 2016). Given that more people are digesting information about mental health by turning to technology makes testing app-based programmes essential. Oliveira et al. (2021) conducted a systematic review of international studies and found evidence to support the effectiveness of mobile app-based interventions for anxiety, stress and depression in a student population. In a qualitative study, Beaumont et al. (2022) found that following the use of the Self-Compassion App, students and educators reported that they were more supportive of themselves, connected with their compassionate self, were able to manage their inner critic, experience gratitude and apply compassion during times of personal struggles.

Whilst apps have the potential to help boost mental health, further robust research is necessary to test the efficacy of mobile app programmes (Wang et al., 2018). de Krijger et al. (2023) reviewed 24 internationally available compassion apps looking at their quality using the Mobile App Rating Scale (Stoyanov et al., 2015) and their consistency with current evidence by comparing them to existing compassion interventions. The review found the Self-Compassion App was the highest rated app and stood out with the high quality of the information and the engaging way in which this information was offered, such as customisation and interactive features (for example, measurement of heart rate variability).

Apps based on the principles of CFT could potentially be useful for students, educators and people waiting for psychological support. We therefore wanted to evaluate the impact the app had on the well-being of staff and students at a UK university.

3 | THE SELF-COMPASSION APP

The Self-Compassion App (Beaumont, Irons & Psychological Technologies [PSYT], 2020) is based on the bestselling book *The Compassionate Mind Workbook* (Irons & Beaumont, 2017) and aims to help people cultivate compassion. A mobile app based on the content of the workbook could have a positive impact on a wider population, especially as individuals are looking to digest information via their phones (Beaton, 2016). Mobile technology can incorporate content from self-help books into daily routines and practices and could potentially help people compassionately challenge unhelpful behaviours, thinking patterns and regulate emotion. The Self-Compassion App (<https://www.selfcompassion.me/>) is based on Gilbert's CFT model (2009, 2010, 2014, 2020)

and includes information about the theory, philosophy, principles and practices of CFT. App users can track well-being, receive optional daily nudges and reminders and tailor use to meet their own needs. To our knowledge, this is the first commercially available app to focus on the principles of CFT, and therefore, it is essential that the effectiveness and acceptability of the app is examined.

As many people find accessing information and resources through mobile technology preferable to other formats (Beaton, 2016), we wanted to explore whether using this app for 28 days would reduce levels of psychological distress, self-criticism and emotion regulation difficulties. We were also interested in whether the app would lead to an increase in compassionate motivation (e.g. caring for well-being) and compassionate action (e.g. acting in ways that are helpful when suffering is experienced; Gilbert et al., 2017).

4 | METHODOLOGY

4.1 | Design

This mixed methods study collected pre-, post- and follow-up outcome measures from staff and students at the University of Salford. Questionnaires were used to collect quantitative data, and qualitative data were collected via two focus groups (staff and students attended different focus groups). This paper reports on the quantitative findings of the project. See Beaumont et al. (2022) for the findings from the collection of qualitative data.

4.2 | Participants and recruitment strategy

Lecturers posted information about the research project on university module sites. Student and staff well-being services posted information about the project on online sites and the university's internal communications team posted information in staff newsletters. All staff and students at the university were given the opportunity to take part in the study, with the only limiting criteria being having access to an iPhone (at the time of conducting the study, the app was only available on that platform).

4.3 | Procedure

Ethics approval was obtained from the University of Salford Post Graduate Research Ethics Panel (ref: HSR1920-085). Once participants had read the participant information sheet and had read, signed and returned the consent forms to the principal researcher, they were asked to complete questionnaires via Jisc Online Surveys (<https://www.onlinesurveys.ac.uk/>) before being given access to the app (<https://www.selfcompassion.me/>). Participants were asked to complete one session a day, for 28 days. At the end of this time, participants completed the same set of questionnaires and then once again 6 weeks post completion of using the app.

4.4 | Quantitative data collection

The questionnaires used to collect the data were as follows.

4.5 | The Self-Compassion Scale-SF (Raes et al., 2011)

The Self-Compassion Scale (SCS) is a 12-item questionnaire and explores self-compassion. This scale is a shortened version of the original 26-item SCS (Neff, 2003). The scale consists of six subscales (self-kindness, self-judgement, mindfulness, common humanity, isolation and overidentification) and examines how individuals act towards themselves when they experience difficulties. Total self-compassion mean scores were calculated by collating data from all six subscales. A mean score of between 1 and 2.5 indicates low self-compassion; a mean score between 2.5 and 3.5 indicates moderate self-compassion, and a mean score of 3.5 or above indicates high self-compassion (Neff, 2003). The original SCS (Neff, 2003) has demonstrated good psychometric properties, with the SCS-SF demonstrating a high correlation with the long form SCS ($r=.97$ all samples) and good internal consistency (Cronbach's $\alpha=.86$ for the total scale).

There has been a lot of debate about whether the SCS is best represented as a total score, two subscales (one measuring positive aspects of self-compassion and one measuring uncompassionate responses), or even as just the six subscales mentioned above (see Muris & Otgaar, 2022; Neff, 2019). For this study, we calculated both a total score, but also subscale scores measuring self-compassionate responding (by collating data from the self-kindness, common humanity and mindfulness subscales) and uncompassionate responding (by collating data from the isolation, self-judgement and overidentification subscales).

4.6 | Compassionate Engagement and Action Scales (Gilbert et al., 2017)

The *Compassionate Engagement and Action Scales* (CEAS) consist of three scales, which measure self-compassion ('I am motivated to engage and work with my distress when it arises'), the ability to be compassionate to others in distress ('I am motivated to engage and work with other peoples' distress when it arises') and the third subscale measures the ability to receive compassion from people in the respondent's life ('Other people are actively motivated to engage and work with my distress when it arises'). The first section of each scale examines the six compassion attributes in the CFT model: *sensitivity to suffering, sympathy, non-judgemental, empathy, distress tolerance and care for well-being*. Two reversed filler items are also included. The second section of the scale includes four items that reflect specific compassionate actions to deal with distress and includes a reversed filler item. Respondents are asked to rate each statement on a scale of 1 to 10 (1=Never; 10=Always). The same approach is used to measure both compassion for others and being

open to compassion from others. The scale has good factor structure and internal consistency (Gilbert et al., 2017).

4.7 | The Forms of Self-criticising/Attacking Scale (Gilbert et al., 2004)

This 22-item scale measures people's critical and self-reassuring self-evaluative responses to setbacks or disappointments. Participants are asked to rate on a 5-point scale how they might typically think and react when things go wrong for them. The scale measures two kinds of self-criticism: inadequate self, which focuses on a sense of personal inadequacy, and hated self, which measures the desire to hurt or persecute the self. A third factor on the scale is reassured self, which measures how self-reassuring and supportive respondents are when things go wrong for them. The scale has Cronbach's alphas of .90 for inadequate self, .86 for hated self and .86 for reassured self (Gilbert et al., 2004).

4.8 | Beliefs about Emotions Scale (Rimes & Chalder, 2010)

This 12-item scale measures different types of beliefs about the unacceptability of experiencing and expressing negative emotions. Such beliefs impact negatively on well-being and have implications for emotion regulation. Using a 7-point scale from 'Totally agree' to 'Totally disagree', respondents rate their feelings towards their emotions (e.g. 'If I lose control of my emotions in front of others, they will think less of me'). The authors of the scale found good internal reliability, with Cronbach's $\alpha=.91$.

4.9 | The Short Warwick and Edinburgh Mental Wellbeing Scale (Tennant et al., 2007)

The *Short Warwick and Edinburgh Mental Wellbeing Scale* (SWEMWBS) is a 7-item measure with a 5-point scale that measures subjective well-being. There are seven statements: 'I've been feeling optimistic about the future', 'I've been feeling useful', 'I've been feeling relaxed', 'I've been dealing with problems well', 'I've been thinking clearly', 'I've been feeling close to other people' and 'I've been able to make up my own mind about things'. Respondents have five options to choose from: (1) none of the time, (2) rarely, (3) some of the time, (4) often and (5) all of the time. The SWEMWBS has high internal consistency.

4.10 | Generalised Anxiety Disorder Scale (Plummer et al., 2016)

The *Generalised Anxiety Disorder Scale-2* (GAD-2) is a screening tool and consists of the first two questions of the GAD-7 scale.

Respondents are asked to rate the frequency at which they have been disturbed by each symptom over the past 2 weeks using a 4-point Likert scale.

4.11 | The Patient Health Questionnaire (Kroenke et al., 2003)

The *Patient Health Questionnaire-2* (PHQ-2) is a screening tool and explores the frequency of depressed mood over the previous 2 weeks. Individuals are asked to rate the frequency at which they have been disturbed by each symptom using a 4-point Likert scale.

4.12 | Perceived Stress Scale-10 items (Cohen et al., 1983)

The *Perceived Stress Scale* (PSS) is a 10-item scale that measures the perception of stress and which situations in the respondent's life are appraised as stressful. Questions on the scale were designed to explore how unpredictable, uncontrollable and overloaded respondents find their lives. The PSS has been found to have good internal reliability.

5 | OVERVIEW OF THE SELF-COMPASSION APP

Table 1 provides an overview of each of the 28 sessions. The sessions in the app aim to help boost well-being and help the individual cultivate a compassionate mind. The content includes psychoeducation about the CFT model, meditations, quotes, a daily wisdom and practice, audios and prompts. In each session, the user is given the option to either read or listen to the daily wisdom before moving on to a daily practice. For example, the wisdom in Sessions 5, 6 and 7 focus on gaining an understanding of the threat, drive and soothing systems and the impact each system has on the mind and body when activated. The daily practice is interactive and asks the user to rate on a scale of 1–10 how often each system was activated and what tended to activate it. Other daily practices focus on meditations or audio exercises. For example, Session 14 explores how we can create a *compassionate other* using a guided imagery exercise. Each session takes approximately 10 to 20 min to complete, and app users have the option to receive daily reminders, prompts and reflections. For example, they have the option each morning to respond to the prompt, 'what would make this a good day?'. Figure 1 gives an outline of the first three sessions in the app. Figure 2 is a screenshot of an interactive exercise which explores the difference in sizes between the three systems, and Figure 3 is a screenshot from Session 18, which aims to help users become familiar with different feelings.

TABLE 1 Session number and topic.

1.	What is compassion?	15.	Loving kindness
2.	Loops in the mind	16.	Difficulties with compassion
3.	The gift of the present	17.	Compassionate thinking
4.	The many paths to mindfulness	18.	Getting familiar with your feelings
5.	The three systems model	19.	Accepting difficult emotions
6.	The drive system	20.	Multiple selves
7.	The soothing system	21.	Compassionate planning
8.	Using the body to support the mind	22.	Assertive compassion
9.	Space to breathe	23.	Meeting your inner critic
10.	A calm, peaceful or safe place	24.	Compassion over criticism
11.	The power of positive emotions	25.	A letter to myself
12.	Remembering compassion	26.	The compassionate selfie
13.	Developing your compassionate self	27.	Compassionate kit bag
14.	Your compassionate other	28.	Your compassionate mind

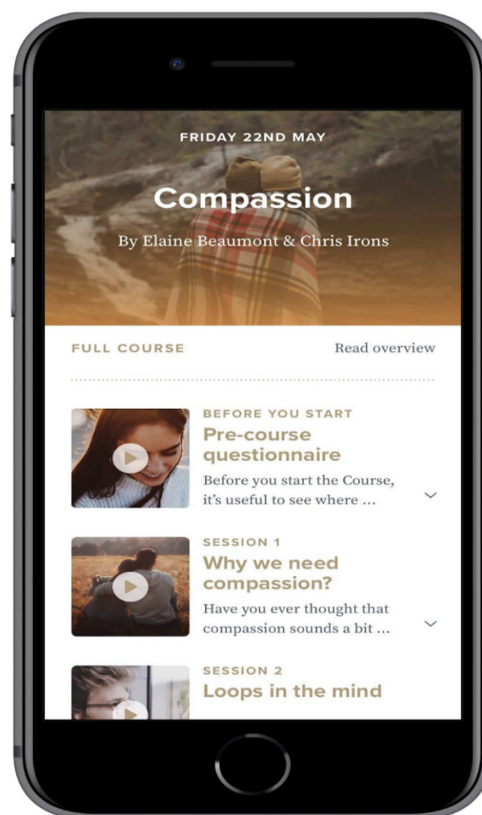


FIGURE 1 Outline of the first three sessions.



FIGURE 2 Interactive session exploring the impact the three systems have on the individual.

6 | RESULTS

Fifty-two participants completed pre- (Time Point 1), post- (Time Point 2) and 6-week follow-up (Time Point 3) study measures. The overall sample comprised of ages ranging from 18 to 65 years (18–25 years, $n=5$, 9.6%; 26–35 years, $n=8$, 15.4%; 36–55 years, $n=19$, 36.5%; 46–55 years, $n=19$, 36.5%; 56–65 years, $n=1$, 1.9%); there were 48 females (92%) and four males (8%), with nine staff and eight students agreeing to take part in the focus groups. Within the sample, 75% ($n=39$) were students and 25% ($n=13$) were staff. In terms of ethnicity, 88.5% ($n=46$) were White; 5.8% ($n=3$) were Black/African/Caribbean/Black British, 1.9% ($n=1$) were Mixed/Multiple ethnic groups, and 3.8% ($n=2$) were Other. All participants were over 18 years old.

Differences between pre- and post-app scores were analysed using a series of independent t -tests (see Table 2). A Bonferroni correction for multiple comparisons was applied, and the adjusted significance level was $p=.003$.

Comparison between scores pre- (T1) and post- (T2) use of the app highlighted significant changes in most variables. There were significant increases in self-compassion (both on the SCS and the self-compassion subscale of the Compassionate Engagement and Action Scales) and in self-reassurance, suggesting that using the app led to increases in the ability to be compassionate and reassuring to oneself. We also found significant reductions in self-criticism, as highlighted by changes in the inadequate and hated components on the Forms of Self-Criticism Scale and in the composite subscale (including over-identification, rumination and self-judgement) on the SCS.

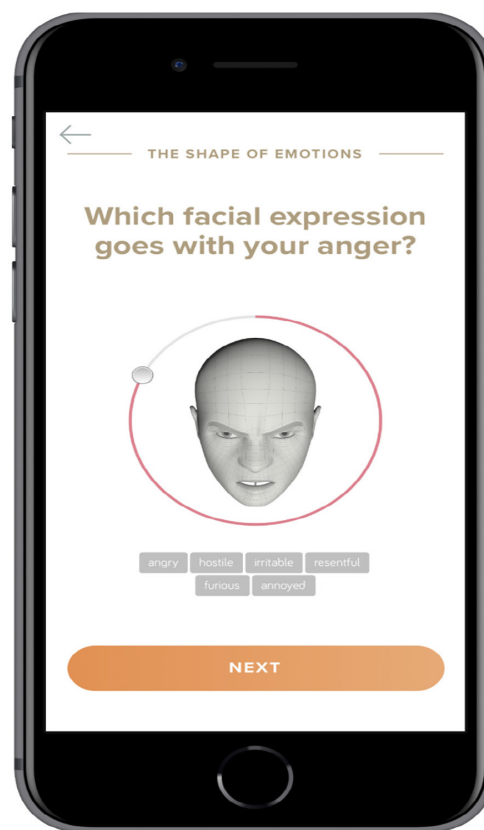


FIGURE 3 Shape of emotions.

We found a mixed picture in terms of the other flows of compassion (to others and from others). Whilst scores on the compassion to others subscale on the Compassionate Engagement and Action Scales increased, this did not meet statistical significance. However, we found significant increases in participants' perceptions that other people were more compassionate to them.

In terms of other measures, we found that following the use of the app, participants had fewer negative beliefs about experiencing and expressing their negative emotions and significant reductions in anxiety and stress. However, although there was no reduction in levels of depression, participants reported significant increases in well-being following the use of the app.

We compared post scores (T2) with 6-week follow-up data (T3). Following Bonferroni correction, the analysis found a small, non-significant increase in scores on the Self-Compassion Scale ($M=43.29$, $SD=8.62$). Similarly, there were small, non-significant increases in scores on the Compassionate Engagement and Action Scales between post (T2) and follow-up (T3) for self-compassion ($M=73.85$, $SD=13.19$), compassion to others ($M=82.61$, $SD=8.21$) and compassion from others ($M=68.25$, $SD=16.90$).

Although there were no significant statistical differences between post (T2) and six-week follow-up scores (T3) on the remainder of the measures, mean scores suggest benefits were maintained on the inadequate self-subscale ($M=15.15$, $SD=8.38$), the self-hatred subscale ($M=3.92$, $SD=4.21$) and the reassure-self subscale ($M=22.90$, $SD=6.92$). It was a similar picture for the Beliefs about

TABLE 2 Mean scores, standard deviations and independent *t*-tests pre- and post-app use.

	Time point				<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>	
	T1		T2						
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>					
SCS total	31.15	10.29	41.98	9.15	−9.827	51	< .001	1.12	
SCS-positive	15.15	5.71	21.35	4.79	−9.945	51	< .001	1.19	
SCS-negative	22.13	5.57	16.75	5.45	9.589	51	< .001	0.99	
CEAS									
Self-compassion	56.37	16.45	71.46	15.13	−6.228	51	< .001	0.96	ns
Comp to others	79.31	9.1	82.1	10.98	−1.769	51	0.041	0.21	
Comp from others	56.37	15.26	65.58	16.78	−1.345	51	< .001	0.58	
FSCRS									
Inadequate	22.73	9.02	17.42	9.1	5.723	51	< .001	0.59	
Self-reassure	18.92	7.18	22.97	6.45	−4.669	51	< .001	0.6	
Self-hatred	5.37	4.87	3.92	4.22	3.656	51	<.001	0.32	
Emotions	43.77	14.31	31.9	11.35	7.290	51	< .001	0.93	
Well-being SWEMWBS	21.62	5.6	25.13	5.27	−5.068	51	< .001	0.65	
Anxiety GAD-2	3.25	1.79	2.50	1.73	3.444	51	<.001	0.43	
Depression PHQ-2	2.00	1.71	1.77	1.74	1.045	51	.301	0.13	ns
Stress PSS	22.54	8.81	17.00	8.99	5.799	51	< .001	0.63	

Abbreviations: CEAS, Compassionate Engagement and Action Scales; Emotions, Beliefs about Emotions Scale; FSCRS, The Forms of Self-criticising/Attacking Scale; GAD-2, Generalised Anxiety Disorder Scale; PHQ-2, The Patient Health Questionnaire; SCS, Self-Compassion Scale; Stress, Perceived Stress Scale; Well-being, The Short Warwick and Edinburgh Mental Well-being Scale.

Relative Size of Cohen's *d*

Negligible effect (< -0.15 and $< .15$)
 Small effect ($< .15$ and $< .40$)
 Medium effect ($< .40$ and $< .75$)
 Large effect ($< .75$ and < 1.10)
 Very large effect (< 1.10 and < 1.45)
 Huge effect < 1.45

Emotions Scale ($M = 30.46$, $SD = 11.72$), the SWEMWBS ($M = 25.23$, $SD = 6.59$), the GAD ($M = 2.19$, $SD = 1.81$), the PHQ ($M = 1.59$, $SD = 1.61$) and the PSS ($M = 15.87$, $SD = 8.42$).

7 | DISCUSSION

This paper explores the impact that using the Self-Compassion App had on staff and students at the University of Salford.

The findings suggest that the use of the app led to several benefits. Participants in the study experienced a significant increase in self-compassion and self-reassurance (of a medium to large effect) and became more open to receiving compassion from others, believing that other people came up with helpful ways for them to cope with distress and were helpful and encouraging. The findings fit with other research looking at changes in compassion levels following engagement in CMT practices (e.g. Beaumont et al., 2021; Beaumont, Irons, et al., 2016; Lucre et al., 2024; Matos et al., 2017; Northover et al., 2021). Sommers-Spijkerman et al. (2018) found the effects of

CFT on improving well-being and psychological health were boosted through improvements in self-reassurance and reductions in self-criticism, which mirrors the findings in this study.

Similar to Irons and Heriot-Maitland (2020), who examined face-to-face CMT, we did not find a statistically significant change in compassion for others post-use of the app. This may be because the majority of the content focuses on self-compassion. It may also be that given some of the participants in this study were healthcare educators and students pursuing a career in the helping professions, a ceiling effect may have influenced results, as levels of compassion were already high pre-engagement with the app.

Our study found that participants reported a statistically significant reduction in both inadequate and hated self-criticism, with a medium and small effect size, respectively. We also found significant reductions in uncompassionate relating on the SCS, to a large magnitude. These results mirror previous findings that following a course of CFT or engaging in CMT practices leads to a significant reduction in self-criticism (e.g. Fox et al., 2021; Irons & Heriot-Maitland, 2020; Matos et al., 2017, 2024; Northover et al., 2021; Petrocchi et al., 2023). The results further support the idea that compassion training may have a wider impact by improving well-being and reducing stress and anxiety. Findings from the inadequate self subscale at 6-week follow-up suggest that scores continued to reduce and that gains were maintained. It may be that continued use of the exercises post app use led to continued benefits in reducing self-criticism. Future research may benefit from investigating this further.

Qualitative analysis by Beaumont et al. (2022) complements the findings in this study. Following the use of the Self-Compassion App, they found that students and educators were more supportive of themselves, connected more with their compassionate self and noticed a reduction in self-criticism. Participants in this qualitative study reported that they were able to stop, reflect and befriend their inner critic post-use of the app, potentially suggesting that participants learnt to respond to feelings of inadequacy with compassion, thus mirroring the findings in this current study. As has been found elsewhere (e.g. Wakelin et al., 2022), it may be that as self-compassion increases, self-criticism decreases, although further studies will be needed to track this process in more detail.

There were significant increases, of a large effect size, in emotion regulation skills as measured by the Beliefs about Emotions Scale (Rimes & Chalder, 2010) after using the app. This is important as compassion and self-compassion have often been discussed as a powerful emotion regulation strategy that help people regulate and manage difficult emotions (Inwood & Ferrari, 2018; Irons, 2021).

In terms of psychological distress, we found a mixed picture. There were significant reductions in stress and anxiety of a medium size, and this fits with previous studies in non-clinical populations (Irons & Heriot-Maitland, 2020; Matos et al., 2017). In comparison, whilst there was a small reduction in depression symptoms, this did not reach statistical significance. Whilst previous CFT and CMT studies have found significant reductions in depression (Petrocchi et al., 2023), here we used the PHQ-2, a shortened, 2-item measure of depression symptoms. It may be there was not enough variation to detect a change in scores or, given that scores were already in the non-clinical range, we hit upon a floor effect.

Key to CFT and CMT is whether changes occur only with the reduction in psychological distress, or also with the increase in psychological well-being. As with previous studies, this study found that using the Self-Compassion App led to significant increases in well-being of a medium effect size (Irons & Heriot-Maitland, 2020; Northover et al., 2021; Sommers-Spijkerman et al., 2018).

8 | LIMITATIONS

There are several limitations to consider. First, we do not have data on how often participants engaged with the app, how frequently they participated in exercises, and how many of the 28 sessions they accessed and completed. It is therefore difficult to know whether there was a usage effect that led to the results reported, and therefore, this warrants further exploration.

Participants only had access to the app for 28 days and therefore may not have had the time needed to finish the 28-day course. At the time, our rationale was to explore whether there were pre-post changes after 28 days (i.e. participants completing one session per day). A further study measuring the results following access to the app for a longer time period would be beneficial.

A further limitation was that the app was only available for iPhone users, so Android users were unable to take part in the study.

The Self-Compassion App is now available for iPhone and Android users, so further exploration examining the impact the app has on users is warranted as there may be differences when it comes to user engagement and user habits. For example, Android users have been found to be more responsive to push notifications (Airship, 2021).

Nineteen participants did not complete questionnaires at all three timepoints and five people withdrew from the study as a result of life events (e.g. death of a family member), which means we were not able to capture their data due to attrition. Given that there are known limitations (e.g. user engagement challenges and high attrition rates) of people using online and mobile technology for their psychological health, it may be important in future studies of the app to explore this further, for example, by examining demographic factors (Koh et al., 2022).

9 | IMPLICATIONS

Apps have the potential to help boost mental health; however, further robust research is necessary to test the efficacy of mobile app programmes (Wang et al., 2018). Apps such as the Self-Compassion App could be used as a useful tool for people waiting for psychological support. This is an important consideration given the current waitlist times for counselling and psychotherapy in the United Kingdom. Anecdotally, clients in therapy, along with their therapists, have reported finding that the app may also support the process of CFT. Given this, and the data from this study, it may be that using the app alongside CFT sessions could be beneficial and help aid the therapeutic process for some people.

Considering the recent pandemic, and the impact it has had on people's well-being, it is important that the counselling and psychotherapy community examine and test interventions that utilise technology with the aim of boosting well-being and levels of compassion and reducing self-criticism.

10 | FUTURE RESEARCH

A randomised control trial and longitudinal study would be beneficial to explore the long-term benefits of using the app as this would allow researchers to analyse whether changes in behaviour are maintained over time. In this study, participants only had access to the app for 28 days as a reflection of the 28 sessions of content. However, expecting participants to complete one session daily may have increased pressure and even triggered a sense of failing if people were unable to maintain daily access. Future research could examine acceptability of the app, how people use the app and whether the app could be helpful in sub-clinical populations, for example, for people struggling following stressful life events such as traumatic birth.

Currently, the app is being used to aid well-being in organisations including universities and National Health Service (NHS) Trusts and aims to help people sustain, strengthen and cultivate compassionate minds. However, further robust research is needed to assess the

impact the app has in these settings and to identify what components of the app are helpful and why. Organisations may benefit from mental health apps not only to boost well-being but to decrease difficulties which are often related to a lack of human resources. Future research could also explore whether participants had previous experience of using self-help apps and collect data about interventions participants have used previously to boost levels of compassion.

11 | CONCLUSION

The Self-Compassion App is the first commercially available, comprehensive smartphone app based upon the ideas and practices of CFT and CMT. Our results are promising and suggest that using the app may help to reduce psychological distress (e.g. self-criticism, emotion regulation difficulties and stress), whilst boosting psychological well-being and levels of compassion. Further studies will help to clarify how the app might benefit people, and what type of engagement with sessions may be needed to derive change.

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CONFLICT OF INTEREST STATEMENT

The first and fourth author co-created the app course, which is based on a book by the same authors, and receive royalty payments.

ETHICS STATEMENT

Ethics approval was obtained from the University of Salford Post Graduate Research Ethics Panel (Ref.: HSR1920-085).

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Dr. Neil Dagnall is a reader in applied cognitive psychology at Manchester Metropolitan University (MMU). His research focuses on applied aspects of cognition, particularly thinking style and cognitive-perceptual factors that influence scientifically unsubstantiated beliefs (i.e. belief in the paranormal, conspiratorial ideation, pseudo-science and urban legends), decision-making and behaviour change. Neil's work also extends to non-cognitive skills, individual differences and memory.

Sue Massey MSc is a lecturer in psychology and criminology with a specific interest in mental health. Sue has been teaching young people (16–19-year-olds) for over 27 years and is interested in exploring alternative ways to help students manage their mental health and navigate the current NHS waiting lists. Her research focuses on the stress coping strategies used by young people.

Dr. Chris Irons is a clinical psychologist, researcher, writer and trainer specialising in compassion-focused therapy (CFT). He is co-director of Balanced Minds (<http://www.balancedminds.com/>), an organisation providing compassion-focused psychological interventions and training. He was involved in some of the initial research papers and book chapters on CFT, and has published many research articles and book chapters on compassion, attachment, shame and self-criticism. He has authored five books, including '*The Compassionate Mind Workbook*' (with Dr. Beaumont) and developed the first CFT-inspired app, called '*The Self-Compassion App*' (also alongside Dr. Beaumont).

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