Examining the Psychometric Properties of the Compassionate Engagement and Action Scales
in the General Population

Simone Lindsey

A thesis submitted for the degree of Doctorate in Clinical Psychology

School of Health and Social Care

University of Essex

September 2017

Abstract

Background: Currently within the National Health Service there is a nationwide drive to increase compassionate care. Research has shown that cultivating compassion can lead to improved well-being and mental health. However, little is known about the current level of compassion within the general population. To date, studies that have sought to explore compassion have employed measures of compassion with poor psychometric properties. Therefore there is a need for the development of a new measure of compassion.

Study aims: The primary aim of the current study was to investigate the psychometric properties of a newly developed measure of compassion: The Compassionate Engagement and Action Scales (CEAS). The secondary aims of the study were to investigate the level of compassion, as measured by the CEAS, in the general population and its relationship to stress, anxiety, depression and positive affect.

Method: This study employed a quantitative methodology with a longitudinal design, using an online questionnaire method to collect data. Participants were asked to complete a number of self-report questionnaires including questions regarding demographic information, compassion, positive affect, anxiety, depression and stress.

Results: A total of 315 participants took part in the study. The CEAS was found to have good psychometric properties. Overall the general population reported higher levels of giving compassion towards others than receiving compassion or being self-compassionate. Self-compassion was found to be the strongest predictor of stress, anxiety, depression and positive affect.

Conclusion: The CEAS is a psychometrically robust measure of compassion which can be used in research and clinical practice. Compassion based interventions help to promote increased compassion which supports improved well-being. Interventions should continue to

be developed which support the cultivation of compassion at an individual and an

organisational level.

Acknowledgements

Table of Contents

Introduction

Chapter Overview

This chapter introduces the context for the present study, which aimed to explore the psychometric properties of a newly developed measure of compassion. Compassion is a widely used complex concept and is seen as the cornerstone of all quality healthcare provision. There has been an increase in the last 20 years of research into compassion and within this the development of a number of measurement tools of compassion. This chapter will provide an overview of the evolution of the current conceptualisations of compassion and its related concepts. It will outline some of the reasons why it is important to study compassion and the potential benefits of psychotherapeutically cultivating compassion. The chapter will then present a systematic review of the current literature on existing measures of compassion and will conclude that there is a further need for the development of a robust tool to measure compassion.

What is compassion?

Compassion can be understood from a number of different approaches and the current interest in exploring and understanding the essence of compassion is not a new one. Historical records suggest that the construct of compassion has been deliberated throughout history, and can be traced back to the contemplations of the philosopher Aristotle (384-322 BCE, van der Cingel, 2014). The etymology of the word compassion stems from the Latin word *compati* meaning "to suffer with" (Oxford English Dictionary, 2017). Currently the English dictionary defines compassion as a "strong feeling of sympathy and sadness for the suffering or bad luck of others and a wish to help them" (Cambridge Dictionary, 2017).

Evolutionary psychology is a theoretical approach which has sought to understand and explain the origin and development of compassion. Evolutionary psychology aims to

identify useful human psychological traits and develop an understanding of how these traits evolved as human adaptations (Confer et al., 2010). From an evolutionary perspective, compassion is seen as both an advantageous innate trait and a characteristic which can be socialised in humans (Ekman, 2009; 2010; Goetz, Keltner & Simon-Thomas, 2010). In this sense, compassion may have evolved as a way to promote care taking towards those that require it, such as offspring or those in poor health (Mikulincer & Shaver, 2005).

Researchers posit that over time the caring qualities associated with being compassionate towards others became desirable traits, as they promoted the survival of the human species. Therefore being compassionate and caring became regarded as attractive qualities to have, especially when selecting a potential mate for sexual reproduction (Miller, 2000). These qualities continue to be valued in today's modern society. Within an evolutionary framework compassion can be defined as "the feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help" (Goetz et al., 2010, p. 352).

A slightly different understanding of compassion is that of Buddhist traditions, which view compassion as an attitude. Buddhist psychology positions compassion within a system of four attitudinal qualities, which also includes loving-kindness, sympathetic joy and equanimity (Hofmann, Grossman & Hinton, 2011). Within this approach compassion is defined as an attention and intention towards alleviating distress (The Dalai Lama, 2001).

Compassion from a Buddhist perspective is seen as an emotion or state that needs to be cultivated through meditation in order to promote emotional healing (Makransky, Germer & Siegel, 2012). As such there are three different levels of compassion one can aspire to. The first is being motivated to be compassionate, the second stage proceeds to taking compassionate action and the final stage is a progression to a continual presence of compassion (Barad, 2007). Similarly to evolutionary psychology, Buddhist psychology

values compassion as highly important for human development and both approaches propose that early attachment styles can shape the human propensity for compassion (Barad, 2007; Wang, 2005). In sum, Buddhist perspectives suggest that compassion, with wisdom, can empower people to think more clearly, promote inner healing and serve to protect the self and others (Makransky et al., 2012).

Related terms

A similar and related construct, which developed from Buddhist and social psychology, is the concept of self-compassion. Whilst evolutionary and Buddhist perspectives emphasise the relational aspect of compassion (e.g. behaviours, emotions, attitudes, etc.), self-compassion is a concept which focuses on compassion directed towards the self. Neff (2003b) defines self-compassion as being aware of one's own suffering and normalising these experiences as common to all humanity. Whilst this idea is very apparent in eastern philosophies it is a relatively new concept in western thinking (Neff, 2003b). Neff (2003b) conceptualised self-compassion as consisting of three main elements. The first element involves being kind, supportive and understanding to oneself during times of suffering. The second element is the recognition that everyone at some point suffers and that this is a shared human experience. The third element is mindfulness, which entails an awareness of mental states and processes, such as thoughts and emotions. Mindfulness is seen as a crucial component as an individual must be aware of and attuned to their own suffering in order to be self-compassionate.

One of the main issues that arises when defining compassion is its overlap with other concepts, and in particular the closely related notion of altruism. Altruism has been defined as "any form of helping that applies when the giver is motivated to assist a specific target after perceiving their distress or need" (Preston, 2013. p. 1307). This definition supports the idea of an evolutionary developed trait, similar to that of compassion, which evolved out of a need

to respond to the distress of offspring. However, there is also an aspect of compassion that is arguably absent from altruism and that is the notion of sharing or behaviours which promote the well-being of others (Gilbert, 2015). Thus although closely interrelated, both concepts delineate a slightly different aspect of caring and therefore can be differentiated.

Empathy is another construct which is often seen as converging with compassion. Many would argue that whilst the capacity to empathise is needed in order to be compassionate, unlike empathy, compassion requires the additional step of action (Goetz et al., 2010). In other words, one can empathise and show emotional attunement to others without any intention to act or care for another (Panksepp & Panksepp, 2013). Another way in which compassion differs from empathy is illustrated in an example in which an individual can empathise with someone for carrying out an act of revenge on someone else, but this is not compassionate (Panksepp & Panksepp, 2013). Thus, whilst compassion and empathy share some competencies (e.g. perspective taking), compassion includes an additional motivational aspect of acting to relieve suffering (Schantz, 2007).

Towards an integrated theory of compassion

Informed by evolutionary and Buddhist theories, Paul Gilbert has developed an integrated theoretical account of compassion. Gilbert is a leading forerunner in the field of compassion research and has published widely on its evolutionary roots, conceptualisation and value in our current society. Within this approach compassion is defined as a "sensitivity to suffering in self and others, with a commitment to try to alleviate or prevent it" (Gilbert, 2014, p. 19). One aspect that is unique to Gilbert's model is the identification that there are three directions or flows of compassion one can experience. The three flows are defined as, the ability to feel compassion for others, the ability to receive compassion from others and the ability to be compassionate towards yourself (Gilbert, 2009).

Gilbert (2015) describes compassion as delineating from a caring 'social mentality,' which he defines as, "the organisation of various psychological competencies and modules (e.g. for attention, ways of thinking and action tendencies) guided by motives to secure specific types of social relationship" (Gilbert, 2010, p. 22). A compassionate mentality is made up of different interdependent competencies referred to as the two psychologies, which collectively constitute the main essence of compassion (Gilbert & Choden, 2013). The first psychology refers to an ability to engage with, understand and tolerate sources of suffering and includes a number of attributes (empathy, sympathy, distress tolerance, sensitivity, non-judgemental and care for well-being), which characterise compassion. The second psychology is concerned with acting to develop ways to overcome suffering using a number of skills which can be learned, such as mindful attention, feeling and sensory focusing and compassionate behaviour and reasoning (Gilbert, 2009).

As with the Buddhist and evolutionary approaches, Gilbert's model can be linked to a more developmental based understanding of compassion (Gumley, Braehler, Laithwaite, Macbeth & Gilbert, 2010). From a developmental perspective, the competencies that underpin the human capacity to attend to the suffering of the self and others and the ability to act to alleviate suffering may develop as a result of early caregiver relationships. Bowlby (1982) emphasised in his attachment theory that early relationships provide the foundations in which to develop the competencies of attunement to our own and others mind and empathy, which are both core components of compassion. As MacBeth and Gumley (2012) highlight, a secure attachment style closely resembles that of a compassionate social mentality posited by Gilbert (2010).

Towards a unified definition of compassion

So far it has been demonstrated that there are a number of different, albeit overlapping, ways of conceptualising compassion. Strauss et al. (2016) conducted a review of existing definitions of compassion within the literature. They developed, based on their informal review of existing definitions, their own synthesised definition of compassion as, "a cognitive, affective, and behavioural process" (p. 19), which consists of five elements that refer to both self and other-compassion. The five elements are (a) recognizing suffering, (b) understanding the universality of suffering in human experience, (c) feeling empathy for the person suffering and connecting with the distress (emotional resonance), (d) tolerating uncomfortable feelings aroused in response to the suffering person (e.g. distress, anger, fear) and so remaining open to and accepting of the person suffering, and (e) motivation to act to alleviate suffering. The authors argue that this definition encapsulates common elements of compassion as defined by other approaches in the literature.

The definition of compassion outlined by Strauss et al. (2016) corresponds to some extent with the definitions outlined by Neff (2003a) and Gilbert (2009). It is similar to the three principal components of compassion identified by Neff, which include, common humanity (universality), mindfulness (recognising suffering) and kindness (non-judgemental, open and accepting of suffering). The Strauss et al. (2016) definition also resembles that of Gilbert's (2014) definition, with both defining compassion as a cognitive, affective and behavioural process. In addition the six attributes of compassion (sympathy, empathy, non-judgemental, sensitivity, motivation and distress tolerance) outlined in Gilbert's (2014) definition are also included in the definition by Strauss et al. (2016). Furthermore, Strauss et al. (2016) similarly to Gilbert (2014), describes two psychologies of compassion, which encompasses an ability to notice and then act to alleviate suffering. The only marked

difference between the two definitions is that Gilbert's definition encapsulates all three flows of compassion.

Strauss et al. (2016), however, argue that their definition is the only existing definition that encapsulates all of the five components they identified as characterising compassion. Strauss et al. (2016) state that, unlike their own definition, Gilbert's (2014) definition does not include an understanding of universal suffering. This seems incongruous since Gilbert's definition was developed from a Buddhist and evolutionary perspective, which are built on a premise of universal human experience. However, it is difficult to determine how Strauss et al. (2016) arrived at this conclusion since they do not provide a justification or outline the process of their review.

Gu, Cavanagh, Baer & Strauss (2017) sought to validate the Strauss et al. (2016) definition of compassion in a study which pooled together a number of items from existing compassion scales. They conducted a factor analysis in order to see if the items generated factors which corresponded to the five components outlined in the Strauss et al. (2016) definition. Gu et al. (2017) concluded that the 'tolerating uncomfortable feelings' factor was not supported and recommended that this aspect of compassion warranted further research, which could lead to the component being excluded from the definition of compassion. The authors also concluded that due to the items selected in the analysis, the definition could only be applied to compassion towards others and not self-compassion or compassion from others. Therefore this definition arguably does not sufficiently capture compassion in its entirety. In conclusion, it can be argued that the model developed by Gilbert (2005, 2009) provides the most overarching and encompassing conceptualisation of compassion with a good theoretical basis.

Whilst Gilbert's definition may be the most current overarching conceptualisation of compassion, it is not without limitations. For example, further research has identified that

there are different types of compassion such as, submissive compassion, which can be distinguished from genuine compassion (Catarino, Gilbert, McEwan & Baião, 2014) and therefore broad definitions fail to capture these differences. In addition, the study by Catarino et al., (2014) highlights that people can respond in compassionate ways not just during times of distress and therefore a definition which only defines compassion as a response to suffering does not account for this. Moreover, despite attempts to define compassion, it still remains a complex concept and one which can have different meanings to different people. The majority of research which has sought to define compassion has utilised quantitative research methods and perhaps further additional qualitative research would help provide further insight into how we as a society conceptualise compassion.

Why is it important to study compassion?

Compassion and the National Health Service

Compassion is one of the core values outlined in the National Health Service (NHS) Constitution (Department of Health, DH, 2010). Arguably, compassion has been at the heart of healthcare and the NHS since its conception (van der Cingel, 2014). Indeed famous historical characters associated with the formation of healthcare as we know it today, such as Florence Nightingale, are well known for their acts of compassion towards others' suffering. However, since the findings from the Mid Staffordshire NHS Trust Foundation Inquiry (Francis, 2013), which concluded that serious acts of patient neglect and abuse occurred through a lack of compassion from the staff charged with their care, there has been an emphasis from the government to increase, or as some might claim, restore, compassionate care across the NHS.

In 2012, NHS England launched its new healthcare strategy 'Compassion in Practice' (DH, 2012). The strategy aimed to develop a more compassionate approach to providing healthcare by introducing a number of objectives, such as supporting the development of

compassionate leaders within the NHS. Whilst there is a current drive within healthcare for a more compassionate approach, it is important that compassion is understood within a wider context, for example its nature and prevalence (Ledoux, 2015). As Whomsley (2014) argues, in order to begin thinking about ways to increase compassionate care, we first need to have a better understanding of how compassion is distributed in the general population and what factors effect it.

Compassion research and associated benefits

Research into compassion has progressed noticeably over the last 20 years (Hofmann et al., 2011). To date, research studies have focused on developing ways to measure self-compassion (Neff, 2003a) and the theoretical underpinnings of compassion (Goetz, et al., 2010). The majority of the compassion literature tends to focus on one orientation of compassion and predominantly this has been on self-compassion. There are many studies that consistently suggest that self-compassion has a wide range of benefits (Neff & Pommier, 2013). For example, people with increased self-compassion have been found to report increased positive emotions and decreased negative emotions (Shapira & Mongrain, 2010).

Compassion is associated with a range of positive outcomes, such as, increased well-being (Neff, 2003b) and improved psychological health (MacBeth & Gumley, 2012). In a meta-analysis, MacBeth and Gumley (2012) identified 14 studies which evidenced that increased compassion was associated with lower levels of psychopathology (defined by the authors as depression, anxiety and stress). Other studies have linked compassion to reduced detrimental physiological and behavioural responses to stress (Pace et al., 2010) and empathic distress (Klimecki, Leiberg, Ricard & Singer, 2014).

The relationship between positive affect and self-compassion has also been explored. Studies have found that self-compassion is positively related to happiness, optimism, and

other positive mood states, such as excited and active (Neff, Rude & Kirkpatrick, 2007). Neff et al. (2007) suggest a number of reasons why this might be, for example, people who are happy are less likely to ruminate on negative life events or negative aspects of the self (Elliott & Coker, 2008; Lyubomirsky, 2001), as are people who are self-compassionate (Neff, 2003a). Moreover, research suggests that through its effect on reducing rumination, compassion may also act as a buffer against anxiety and depression (Krieger, Altenstein, Baettig, Doering & Holtforth, 2013; Raes, 2010). Furthermore neuropsychological research has found that regions of the brain associated with joy and optimism are more activated in people who report feelings of compassion for the self and others (Lutz, Greischar, Rawlings, Ricard, & Davidson, 2004). As a result of the positive associations that have been linked to compassion, psychotherapeutic interventions which target compassion development have received a lot of attention recently within mental healthcare services.

Compassion Focused Therapy

Over the past 30 years, Gilbert (2005, 2009) has developed a psychotherapeutic intervention known as Compassion Focused Therapy (CFT). CFT was originally developed to help people who experienced complex mental health difficulties associated with feelings of shame and self-criticism (Gilbert, 2005). CFT aims to help individuals to counter their sense of shame and self-criticism through nurturing compassion towards themselves, others and from others, using a number of techniques and strategies, such as mindfulness, imagery, compassionate letter writing, etc. (Gilbert, 2010).

CFT has a fast growing evidence base for its efficacy, both for group and individual interventions (Gilbert, 2010; Hofmann, et al., 2011; Judge, Cleghorn, McEwan & Gilbert, 2012; Leaviss & Uttley, 2014, Kirby, 2016). Proponents of CFT are developing a body of research supporting the advantages, such as increased well-being and positive affect as well as decreased depression, shame, self-criticism and anxiety, of cultivating compassion within

varying population groups, such as people with a diagnosis of personality disorder (Gilbert & Procter, 2006; Lucre & Corten, 2013), eating disorder (Gale, Gilbert, Read, & Goss, 2014; Goss & Allan, 2014) and psychosis (Braehler et al., 2013). In addition, CFT has been found to be an effective intervention for people with a range of mental health difficulties, such as post-traumatic stress disorder, depression, anxiety and anger (Kolts, 2012; Lee & James, 2013). CFT is also being developed as an adjunct intervention to other psychological interventions, such as cognitive behavioural therapy (CBT) and eye movement desensitization and reprocessing (EMDR), with reported improved therapeutic outcomes (Beaumont & Hollins-Martin, 2013; Bowyer, Wallis, & Lee, 2014).

Measuring Compassion

So far the case has been made for the ongoing value and importance of studying compassion. Having reviewed how compassion can be conceptualised and the potential benefits of cultivating it, the next issue which emerged was how compassion could be measured. Whilst compassion is considered a core value in healthcare and wider society, there is limited literature on the measurement of its presence in the general population (Gilbert, 2005; Schantz, 2007). In order for useful compassionate interventions and initiatives to be developed, compassion needs to be defined in a way that is tangible, and which creates a shift away from its current "iconic status, to a real and measurable attribute" (Ladroux, 2015, p. 2042). Therefore, a review of the current literature was warranted in order to ascertain the status of existing measures of compassion.

Strauss et al. (2016) conducted a review of the psychometric properties of existing measures of compassion. In their review, Strauss et al. (2016) included any scale which measured compassion, included a paper outlining the psychometric properties of the scale and was obtainable within a published article or from the authors. Strauss et al. (2016) excluded measures which did not directly measure compassion (e.g. fears of compassion),

were not available in the English language, only included a subscale of compassion and were non-questionnaire measures of compassion. The authors conducted a literature search in September 2015 and identified nine compassion measures which met their inclusion and exclusion criteria.

Strauss et al. (2016) assessed each of the measures identified through their literature search against a number of quality criteria, which were based on a set of quality criteria developed for health related measures (Terwee et al., 2007). Strauss et al. (2016) awarded points to each measure based on how well the measure met each of the review criteria. The more points a measure achieved was indicative of a higher quality measure. Strauss et al. (2016) concluded that out of a maximum possible 14 points, the highest scoring measures only achieved seven points. The highest scoring measures were the Self-Compassion Scale (Neff, 2003a) and the Relational Compassion Scale (Hacker, 2008). Strauss et al. (2016) concluded that there were no existing measures of compassion which adequately measured compassion.

One of the main critiques of the Strauss et al. (2016) review, however, was that they developed and used their own definition of compassion to assess content validity across all of their identified measures. This is partly the reason why none of the measures they identified achieved a high rating for content validity. This is a questionable strategy since all of the compassion measures they reviewed were developed based on the authors' own definition and understanding of compassion. Furthermore, the study by Gu et al. (2017) highlighted that the Strauss et al. (2016) definition is yet to be validated and therefore it cannot be claimed to be the one unified definition of compassion on which to assess existing measures of compassion.

Systematic review of the literature

The purpose of the current systematic review was to provide an updated review of the literature and to identify and explore the psychometric properties of existing measures of compassion. The present review differed from the previous review by Strauss et al. (2016) in that it enabled the inclusion of measures that contained subscales of compassion, provided that the overall aim of the measure was to assess compassion and not another construct, such as personality. This was to enable a broader review of existing compassion measures. In addition, the current review also reviewed measures based on the authors' stated definition of compassion, rather than the definition developed by Strauss et al. (2016). This strategy accounts for the fact that currently there is no one unified definition of compassion. Finally, this review also assessed two additional quality criteria (face validity and application) which were not assessed in the Strauss et al. (2016) review.

Method

Search strategy.

A systematic search of the literature was conducted in September 2016. The databases PsycARTICLES, PsycINFO, CINAHL and MEDLINE were searched for papers reporting measures of compassion between the years of 1932 and 2016. The databases were searched using key terms and synonyms, along with some limiters. The search contained restricted limiters due to the relative paucity of research into compassion measures. The three limiters were that the papers had to be available in the English language, had to be peer-reviewed and duplicates removed (see Table 1). In line with the method Strauss et al. (2016) adopted, in addition to published peer reviewed papers, doctoral dissertations and theses that met the inclusion criteria were also reviewed. Peer reviewed articles are considered to be the 'gold standard' indicator for high quality research (Mayden, 2012), since they have undergone a quality review process in order to be published. In addition, doctoral level theses and

dissertations have arguably undergone a review process (e.g. viva examination) and therefore it was felt appropriate to include these in the review also. In addition many systematic reviews have been criticised for not including non-peer reviewed literature (Adams, Smart & Huff, 2016) and therefore the inclusion of theses/dissertations expands the scope of the review.

In order to supplement the systematic search, a search of key authors in the field was also conducted, along with a general search of the terms 'compassion' and 'self-compassion' using the internet search engines Google and Google Scholar. Reference lists were also reviewed from key articles obtained in the database search to identify further relevant articles.

Table 1

Databases Searched, Search Terms, Limiters and Results of Search

Search Terms	Limiters	Results
(Compassion*)	English language	PsycARTICLES (N=83)
AND	Peer reviewed	PsycINFO (N = 1910)
(measure or interview or	Duplicates removed	CINAHL (N=1170)
assessment or tool or		MEDLINE (0)
questionnaire or scale or		
instrument)		

Selection of Articles.

All titles and abstracts of the articles returned by the search were reviewed using the following inclusion and exclusion criteria:

Inclusion criteria.

- Peer-reviewed articles and theses/dissertations were selected if their primary aim was to describe the original development and the psychometric properties of a clearly defined questionnaire measure of compassion or self-compassion. This was due to the fact that it was known to the researcher that a number of the measures had been widely used and that it was not within the scope of this review to appraise every paper that has been published on each measure.

- All date periods.

- All human population groups (e.g. children, adolescents, adults, clinical and non-clinical).

- All measures of compassion had to be quantifiable.

Exclusion criteria.

- Articles that did not include a clearly defined measure of compassion and that were not quantifiable.

- Articles which were published in a language other than English.

- Articles which were not the original published measure development paper.

- Articles which were not published in a peer-reviewed publication, e.g. conference abstracts, book chapters.

- Articles that did not assess participants' levels of compassion (e.g. measures of empathy, fears of compassion and barriers to feeling compassion were excluded).

Quality Assessment.

The quality of measures was assessed using a published quality assessment tool known as the Quality Criteria for Measurement Properties of Health Status Questionnaires

(Terwee et al., 2007). This is one of the few available quality assessment tools that outlines specific criteria of which to assess the psychometric properties of a measure. The tool assesses a measure against eight criteria including; content validity, internal consistency, criterion validity, construct validity, reproducibility, reliability, responsiveness, floor/ceiling effects and interpretability. In the original framework set out by Terwee et al. (2007) each criteria is rated on a three point scale. The scale ranged from a negative rating, indicating that the criteria had not been met, to a question mark rating, meaning that the criteria had been partially met, to a positive rating which meant that the criteria had been fully met.

For the purpose of this review a numerical version of this scoring system was adopted in line with other authors who have utilised this quality rating tool (e.g. Strauss et al., 2016; Windle, Bennett & Noyes, 2011). This was to enable comparisons to be made across measures using composite scores. Therefore, where a positive rating would usually be awarded, the equivalent score of two was given. Where a question mark rating would be awarded a score of one was given and where a negative rating would be given the score of zero was awarded. Please refer to Appendix A for an outline of the quality criteria and scoring guideline.

In a previous systematic review of compassion measures, Strauss et al. (2016) noted that the Quality Criteria for Measurement Properties of Health Status Questionnaires (Terwee et al., 2007) was developed specifically for health outcome measures. Therefore, as recommended by Strauss et al. (2016), Barker, Pistrang, and Elliott's (2002) 'rules of thumb' for evaluating psychological measures was also referred to. In particular, Barker et al.'s reliability standards were used to assess test re-test reliability, as shown in Table 2, as these were not specified by Terwee et al. (2007).

Table 2

Reliability Standards

Reliability	
Good	.80
Acceptable	.70
Average	.60
Poor	.50

Note. Adapted from "Research methods in clinical psychology: An introduction for students and practitioners (2nd ed.)," by C. Barker, N. Pistrang and R. Elliott, 2002, West Sussex, England: John Wiley & Sons.

Test-retest reliability was scored using a numeric points system in accordance with the other quality criteria. Articles which reported reliability scores greater than .80 were awarded a score of two. Articles which reported reliability scores greater than .60 and less than .80 were awarded a score of one and articles which reported reliability scores below .60 or that did not report reliability scores were awarded a zero.

In addition to the above, Barker et al. (2002), along with other researchers, contend that face validity is also an important part of assessing validity, which is similar to content validity. Face validity assess whether or not the questionnaire items appear to be measuring the construct intended by the measure at face value (Norris, Qureshi, Howitt & Cramer, 2014). Face validity differs from content validity in that face validity assesses whether items reflect the intended construct whereas content validity assesses whether or not all domains of a construct are represented within the measure (Hardesty & Bearden, 2004).

Construct validity is a process in which a psychological construct is examined to establish whether or not it is a theoretically sound concept. Construct validity can be

established through a variety of different types of evidence. Face validity can contribute to the assessment of construct validity but is not a sufficient assessment of validity and other assessments are needed (e.g. convergent validity) in order for construct validity to be established. This is because face validity is based on the subjective judgement of the researcher and can only account for the appearance of a measure's validity (Howitt & Cramer, 2011). In other words, face validity only provides an informal assessment of validity whereas construct validity is assessed through more structured and rigorous statistical procedures (DeVillis, 2016). Therefore, as part of the current systematic review, each of the measures were evaluated to see whether or not the items appeared to be targeting compassion based on their definitions (e.g. self-compassion, relational, compassionate care, etc.). As face validity is not a criterion set out by Terwee et al. (2007) it was not included in the formal quality ratings but will be discussed as part of the review of content validity.

Another criterion which is sometimes used to assess the quality of questionnaire measures is known as 'application'. Application refers to the number of times a measure has had its psychometric properties reported in further studies. The justification behind this criteria is that the more times a scale has been utilised the more likely it is to be practical, feasible and easy to complete for both participants and administrators (Yu & Kirk, 2009). Furthermore, additional studies may report further psychometric and normative data on the scale which could also increase the validity and reliability of the scale. Since it was known to the reviewer that some scales were more well established then others it was felt that this was important to consider in the review as a separate criterion. Therefore, as recommended by Yu and Kirk (2009), a score of zero was awarded if the scale had only had psychometric properties reported in one additional study to the original development article, a score of one was awarded if the measure had been validated in two to three further studies and a score of two was applied if it was used in more than three additional studies.

Results

In total, 3,163 articles were returned through the search, once duplicates were removed, in which the titles and abstracts were reviewed against the inclusion and exclusion criteria. In instances where the title and abstract did not provide enough information to determine inclusion, the full text article was obtained and reviewed. Following this, 3,141 articles were excluded and the remaining 22 full text articles were obtained and read. Of these, nine were excluded for varying reasons such as the original article could not be obtained or it was a replication study of an original measure. Thus, in total 13 articles were identified to be included in the review, as depicted in Figure 1. The main study characteristics of each article were extrapolated into Table 3.
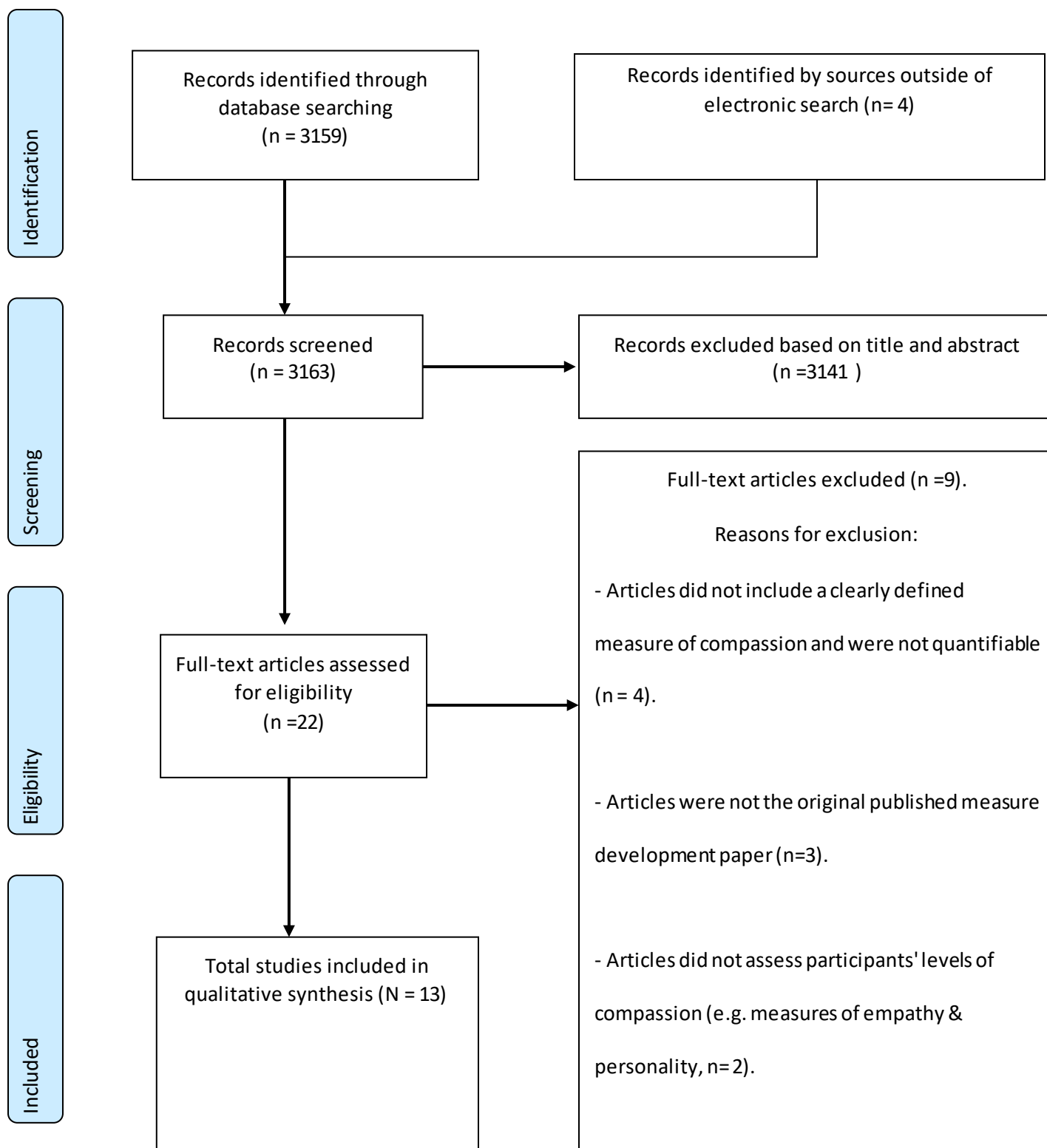
Figure 1. Flow diagram for article selection. Adapted from "Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement," by D. Moher, A. Liberati, J. Tetzlaff, D.G. Altman & PRISMA Group, 2010, *International Journal of Surgery*, *8*(5), p. 3

Table 3

Study Characteristics

Measure	Author	Sample	Sample age (in years)	Mode of completion & number of items	Purpose of measure
Self-Compassion Scale (SCS)	Neff (2003a)	391 (N= 166 male, N= 225 female) university students, USA.	M= 20.91 (SD = 2.27)	Self – report, 26	To measure compassion towards the self, described as having three main components : self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification

Self-compassion Scale -Short Form (SCS-SF)	Raes et al. (2011)	271 (N = 214 female; N = 57 male) psychology university students, Belgium.	M=18.14 (SD = 1.25).	Self-report, 12	A brief version of the SCS
The Relational Compassion Scale (RCS)	Hacker (2008)	201 (N = 135 female, N = 62 male) community sample and 30 (N = 12 female, N = 18 male) students.	M = 31.1 (SD = 11.9) & M = 27.3 (SD = 7.5).	Self-report , 16	To assess the extent to which one can relate their own self-compassion towards others.

Compassionate Love for Humanity and Close Others Scale (CLS)	Sprecher & Fehr (2005)	354 (N= 123 male, N = 231 female) undergraduate students, USA.	M= 19.8 (SD= 1.96).	Self – report, 21	This measure consists of two scales. One which assesses compassion towards close others (e.g. friends or family) and the other assesses compassion towards strangers.
Self-Other Four Immeasurables Scale (SOFI)	Kraus & Sears (2009)	124 (N = 59 male, 65 female) college students.	M = 21.11 (SD = 5.83).	Self-report , 16	To measure compassion towards self and others.
Self-Compassion and Self-Criticism Scale (SCSC)	Falconer, King & Brewin (2015)	413 (N = 254 female, 159 male) general population, UK.	Age: 62% aged 18-24 years (mean age not reported).	Self-report, 30	This measure consists of two scales which measure self-compassion and self-criticism in every day scenarios.

The Compassion Scale (PCS)	Pommier (2010)	439 (N=153 male, 286 female) undergraduate students, USA.	M = 20.6 (SD = 1.82).	Self-report, 24	To measure compassion towards others.
Santa Clara Brief Compassion Scale (SCBCS)	Hwang, Plante & Lackey (2008)	223 (N= 167 female, 56 male) undergraduate students, USA.	M = 19.95 (SD = 1.33).	Self-report, 5	A brief version of the Compassionate Love Scale.
Compassion Scale (MCS)	Martins et al. (2013)	310 (N = 103 male, 206 female) university staff & students, USA.	N = 105 aged 18-39 years, 145 = aged 40-59 years, 54 = 60+ years.	Self-report, 10	To measure compassion across social networks and relationships.

Compassionate Care Assessment Tool (CCAT)	Burnell & Agan (2013)	250 (133 male, 117 female) hospitalised patients, USA.	N = 55 aged 74 years +; 109 aged 73 – 56 years; 58 aged 55 – 35 years; 20 aged 34 – 18.	Self-report, 28	This scale is aimed to be given to patients in healthcare settings in order to assess how compassionate the care was that they received from clinicians.
Compassion of other Lives Scale (COOL)	Chang, Fresco & Green (2014)	355 (N = 232 F, 122 M) college students, USA.	M = 20.1. (SD not reported).	Self-report, 26	To measure compassion towards others with a particular focus on empathy and alleviating suffering.
The Schwartz Centre Compassionate Care Scale (SCCCS)	Lown, Muncer & Chadwick (2014)	801 (gender not reported) community patients, USA.	Not reported	Self-report, 12	To assess patients' perspective of how compassionate physicians were towards them during their treatment in hospital.

| Quiet Ego Scale (QES) | Wayment, Bauer & Sylaska (2014) | Sample 1 = 303 (N = 164 female, 139 male) university students, USA. Sample 2 = 320 (N = 141 male, 179 female) university students, USA. | Sample 1: M = 18.81 (SD = 2.89). Sample 2: M = 19.15 (SD = 2.63). | Self-report , 14 | To assess a person's compassionate self-identity |

Note. M = mean; N = number; SD = standard deviation

Overall quality

The measures varied in their overall quality when assessed against the review criteria. Each identified measure was evaluated against each criterion and awarded a score. These scores were then totalled to produce an overall quality rating score, as shown in Table 4.

It was not possible to assess responsiveness (to what extent a measure can detect clinically important changes over time) in any of the articles as none of them reported data relevant to this criterion and therefore all measures scored a zero in this category. In addition it was felt that criterion validity could not be assessed as currently there is no 'gold standard' measure of compassion (Strauss et al., 2016). Therefore responsiveness and criterion validity were not included in the review that follows.

Table 4

Summary of Quality Assessment Ratings

Measure	Content validity	Internal consistency	Construct validity	Reproducibility - Test re-test reliability	Floor and ceiling effects	Interpretability	Application	Total score/18
SCS	1	2	2	2	0	1	2	10
SCS-SF	1	2	1	0	0	1	2	7
RCS	2	2	1	0	0	1	0	6
CLS	1	2	2	0	0	1	1	7
SOFI	0	2	1	0	0	1	0	4
SCSC	1	2	1	0	0	1	1	6
PCS	1	2	2	0	1	1	0	7
SCBCS	1	2	1	0	0	1	2	7
MCS	2	2	1	0	0	1	0	6

CCAT	2	2	0	0	0	1	2	7
COOL	0	1	1	2	0	1	0	5
SCCCS	2	1	0	0	0	1	0	4
QES	0	2	2	0	0	1	0	5

Note. Rating: 0 = criterion not met/insufficient data to rate criterion; 1 = criterion partially met; 2 = criterion fully met. SCS = Self- Compassion Scale, (Neff, 2003); SCS-SF = Self-compassion scale-short form (Raes et al., 2011); RCS = Relational Compassion Scale, (Hacker, 2008); CLS = Compassion for Close others and Humanity Scale (Sprecher & Fehr, 2005); SOFI = Self - Other Four Immeasurables Scale (Kraus and Sears, 2009); SCSC = Self-Compassion and Self-criticism scale (Falconer, King & Brewin, 2015); PCS = The Compassion Scale (Pommier, 2010); SCBCS = Santa Clara Brief Compassion Scale (Hwang, Plante & Lackey, 2008); MCS = Compassion Scale (Martins et al., 2013); CCAT = Compassionate Care Assessment Tool (Burnell & Agan, 2013); COOL = Compassion of Other Lives Scale (Chang, Fresco & Green, 2014); SCCCS = The Schwartz Centre Compassionate Care Scale (Lown, Muncer & Chadwick, 2014); QES = Quiet Ego Scale (Wayment, Bauer & Sylaska, 2014). Adapted from "What is compassion and how can we measure it? A review of definitions and measures," by C. Strauss, B.L. Taylor, W. Kuyken, R. Baer, F. Jones and K. Cavanagh, 2016, *Clinical Psychology Review*, *47*, p.20.

The highest scoring measure was the SCS (Neff, 2003a), which scored 10 points out of a potential 18, followed by the SCS-SF, CLS, PCS and the CCAT, who all received a total score of seven. The lowest scoring scales were the SCCCS and the SOFI, both of which received a total score of four. Ten of the measures were developed in the USA. The SCSC and the RCS were developed in a UK sample and the SCS-SF was developed using a sample from Belgium. Nine of the articles used a student (college or undergraduate) population, two articles used general hospital patients (CCAT & SCCCS) and the SCSC and the RCS used a community sample who were recruited through an online survey. Eight of the studies reported a mean sample age between 18 and 20 years of age.

Content validity.

All of the articles outlined the purpose of the questionnaire and provided justification and background information for its development. Measures were generally developed for use with the general population with the exception of two measures, the SCCCS and the CCAT, whose target population were patients undergoing hospital treatment. However, as stated above, the majority of studies recruited their samples from university student populations in the USA. This may threaten the external validity of these measures since the results may be biased as a result of being cofounded by age, culture and period effects (Peterson & Merunk, 2014). For example Sears (1986) argues that there are differences in cognitive ability, attitudes, behaviours and relationships between younger and older adults. Whilst the SCSC and the RCS drew on community samples, these mainly consisted of female participants which again can limit the generalisability of the findings to the general population as these samples consisted mainly of young female adults.

Four of the thirteen measures (RCS, MCS, CCAT and SCCCS) achieved a maximum score of two for the quality criterion which assesses content validity. These papers reported in

detail how items were generated for inclusion in the measure and reported to have consulted experts and the target population in the development of the measure, as stipulated by Terwee et al. (2007). For example, the SCCCS was developed by holding focus groups with patients, physicians and nurses to develop the questionnaire items. The PCS did consult with appropriate experts regarding item development, however they failed to involve a target population and therefore only received a score of one for this criteria. Six of the articles did, however, involve the target population in the development of items, (see Table 5) and therefore were awarded a quality rating of one, which indicated that they had met all of the criteria apart from involving experts in the development of the measure.

Table 5

Summary of Psychometric Properties of Compassion Measures (Internal Consistency, Content Validity and Test Re-test Reliability).

Measure	Item generation from experts and target population (TP)	Proposed factor structure	Type of FA completed	Adequate sample size for FA?	Cronbach's Alpha (α, total and subscale)	Test re-test reliability (time between testing)
SCS	Experts: No	6	CFA	Yes (N=391)	Total α =.92	
	TP: Yes				Subscales α =: Self- kindness = .78; self-judgements = .77; common humanity = .80; isolation = .79; mindfulness = .75; over-identification = .81.	r = .93 (3 weeks)
SCS-SF	Experts: No	6	CFA	Yes (N= 415)	Total α = .86,	Not reported
	TP: Yes					
RCS	Experts: Yes	4	CFA	Yes (N= 231)	Subscales α = .74 to	Not reported

					TP: No	.84	
CLS	Experts: No TP: Yes	1	EFA	Yes (N = 354)	Total α = .95	Not reported
SOFI	Experts: No TP: No	4	EFA	Yes (N = 124)	Total α = .60 Subscales: self-negative α = .86; self-positive α = .85; negative-other α = .82; positive-other α = .80.	Not reported
SCSC	Experts: Yes TP: No	2	EFA	Yes (N = 413)	Self-criticism subscale, α = .87; Self-compassion subscale, α = .91).	Not reported
PCS	Experts: Yes (panel of 8 researchers) TP: No	6	CFA	Yes (sample 1: N = 439, sample 2: N = 510)	Total sample 1 α = .90; sample 2 α = .87	Not reported
SCBCS	Experts: No	1	EFA	Yes (N= 223)	Total α = .90	Not reported

TP: Yes

MCS	Experts: Yes (1 Buddhist, Christian, Muslim physician researcher, 2 Christian pastors & 1 Christian community leader). TP: Yes	2	EFA & CFA	Yes (N = 310)	Total α = .82	Not reported
CCAT	Experts: Yes (25 nurses and 3 hospital committee members) TP: Yes	4	EFA	Yes (N = 250)	Total α = .70 (exact value not provided); subscales: meaningful connection α = .87; patient expectations α = .80; caring attributes α = .77; capable practitioner α = .78.	Not reported
COOL	Experts: No TP: No	2	EFA	Yes (N= 355)	Total α = .98	r = .87 – .88 (3 weeks)

SCCCS	Experts: Yes (5 focus groups with patients, physicians & nurses). TP: Yes	1	CFA & EFA	Yes (N = 801)	Total α = .95. .	Not reported
QES	Experts: No TP: No	4	EFA & CFA	Yes (sample 1, N = 303 and sample 2, N = 320)	Total α =.78	Not reported

Note. FA = factor analysis; CFA = confirmatory factor analysis; EFA = exploratory factor analysis. SCS = Self- Compassion Scale, (Neff,

2003); SCS-SF = Self-compassion scale-short form (Raes et al., 2011); RCS = Relational Compassion Scale, (Hacker, 2008); CLS =

Compassion for Close others and Humanity Scale (Sprecher & Fehr, 2005); SOFI = Self - Other Four Immeasurables Scale (Kraus and Sears,

2009); SCSC = Self-Compassion and Self-criticism scale (Falconer, King & Brewin, 2015); PCS = The Compassion Scale (Pommier, 2010);

SCBCS = Santa Clara Brief Compassion Scale (Hwang, Plante & Lackey, 2008); MCS = Compassion Scale (Martins et al., 2013); CCAT =

Compassionate Care Assessment Tool (Burnell & Agan, 2013); COOL = Compassion of Other Lives Scale (Chang, Fresco & Green, 2014);

SCCCS = The Schwartz Centre Compassionate Care Scale (Lown, Muncer & Chadwick, 2014); QES = Quiet Ego Scale (Wayment, Bauer &

Sylaska, 2014). Adapted from "What is compassion and how can we measure it? A review of definitions and measures," by C. Strauss, B.L.

Taylor, W. Kuyken, R. Baer, F. Jones and K. Cavanagh, 2016, *Clinical psychology review*, *47*, p.21.

The SOFI, QES and COOL scales all scored a zero for this criterion because they did not involve a target population or experts in the measure development and information regarding the measure development was limited or unclear. For example, the COOL paper described how the final measure items were selected from a pool of 63 items, however, the authors do not provide information on how the initial 63 items were propagated.

Face validity.

On review, seven of the measures (SCS, SCS-SF, RCS, CLS, PCS, SCBCS and SCSC) showed good face validity. It was clear from reviewing the items that they were relevant to compassion and most of the individual questions appeared to be targeting an aspect of compassion. The remaining six measures however required additional background information from the paper in order to understand how the measure could be constituted as a measure of compassion. These will each be discussed in turn.

The SOFI is made up of eight paired items, such as 'angry towards others' and 'angry towards self', in which participants are asked to rate whether or not they have 'thought, felt or acted in this way' towards themselves or others over the past week. Arguably most of the pairs on their own are not measuring compassion e.g. how joyful were you towards yourself and others. Indeed they have included an item pair which asks participants to rate how compassionate they are towards self and others. The authors argue that they wanted to develop a measure which assessed compassion towards the self and others and in relation to mindfulness practice by assessing the four immeasurables, of which compassion is one. Thus whilst some items do not appear to relate to compassion directly, when taken as a whole the measure aims to capture compassion arguably through the interrelatedness of the four immeasurables. However, debatably this does weaken the SOFI as a valid measure of compassion.

The COOL scale is another questionable measure of compassion when taken at face value. The scale is made up of two subscales, which are categorised as 'empathy' items and 'alleviating suffering' items. The empathy subscale on its own is a measure of empathy however, when combined with the alleviating suffering subscale, it arguably does constitute compassion as per the authors' definition of compassion, which they define as "empathy for others' suffering, followed by an action that alleviates suffering" (Chang et al., 2014, p. 34). As discussed in the 'related terms' section (p. 12), there is an overlap between constructs such as compassion and empathy and so it is expected that scales might include items which directly assess empathy.

The MCS also requires an understanding of the authors' perspective of compassion in order to see how it might capture compassion. A number of questions refer to scenarios which one might query as being indicative of someone being compassionate. For example, a number of scenarios centre around financial generosity, such as "How much of your future savings would you give away now to help a friend in need of financial help?" This is because in the authors' definition of compassion, generosity forms part of what it means to be compassionate and so they assess this by asking these types of questions. This was the only measure which sought the use of scenarios as a way of assessing how compassionate someone might be towards others and assess this by an individuals reported responses towards someone else's suffering.

The QES appeared to have the least face validity out of all the measures as many questions appeared to be targeting other constructs, such as mindfulness or well-being. However, on reviewing how the items were generated it seemed a more plausible measure of compassion. The authors of this measure constructed the measure by selecting items from previously established scales, such as the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) and Ryff's (1989) Personal Growth Subscale of Well-Being Scale.

The items make up a number of subscales (detached awareness, inclusive identity, perspective taking and personal growth), which the authors claim that when combined constitute a compassionate self-identity. The authors define a compassionate identity as a "set of characteristics that reflect a person's readiness to think feel and behave in way that are compassionate" (p. 9). Therefore, the measure does capture important principles of compassion such as attention, empathy and universality and thus could be included as a measure of compassion.

The SCCCS assesses compassionate care, which is not a direct measure of compassion. However, it was included in the review as it met the inclusion criteria, and still constituted as a measure of how compassionate someone is, albeit specifically of a physician towards a patient. Collectively, the items of this measure do assess aspects of compassion, for example one of the items ask respondents "during your recent hospitalisation, how successfully did your doctor express sensitivity, caring and compassion for your situation?"

The CCAT was another scale which measured compassionate care. The authors do not provide a copy of the measure in its final form and were unable to be contacted and therefore face validity could not be directly assessed. However, there is sufficient information regarding the items and the measure within the article that it was deemed appropriate to be included in the quality review. On reviewing the description of the items in the article it appeared that the items did measure compassion, for example by asking respondents about the caring attributes (such as empathy) of healthcare professionals.

Internal consistency.

The majority of the measures (SCS, SCS-SF, RCS, CLS, SOFI, SCSC, PCS, SCBCS, MCS, CCAT and QES) scored a maximum score of two on the internal consistency criterion. These measures all achieved Cronbach's alpha scores between .70 and .95, as stipulated in

the quality criteria assessment tool (Terwee et al., 2007). In addition these scales reported either exploratory and/or confirmatory factor analyses and had adequate sample sizes for these analyses to be undertaken (see Table 5). Adequate sample size is defined by Terwee et al. (2007) as at least seven times the number of participants per number of items and a minimum number of 100 participants. The remaining two measures achieved a quality score of one for internal consistency. This was because the SCCCS and COOL both reported high Cronbach's alphas above .95. This may therefore indicate that some of the items included in the measures are redundant (Briggs & Cheek, 1986).

Construct validity.

Many of the measures failed to achieve a maximum score for construct validity. Terwee et al. (2007) states that authors must have outlined hypotheses prior to any statistical analysis regarding the relationship of the measure with other constructs. Furthermore, these hypotheses must be correct in at least 75% of cases in order for the measure to be awarded a rating of two. Only four of the measures achieved a maximum score rating of two. These were the SCS, CLS, PCS and QES. For example, the SCS outlined a number of hypotheses regarding correlations of the SCS to related constructs (e.g. that levels of anxiety would be reduced in people with higher levels of self-compassion) prior to analyses and in the results section Neff (2003a) reported that all of the hypotheses outlined were supported.

Seven of the measures were awarded a rating of one because they did compare the newly developed measure with other existing measures. However, they were not awarded a score of two because they did not report any prior hypotheses or they only correlated their measure with one other measure. For example, the authors of the COOL report that they assessed convergent validity by correlating the COOL with other published measures, however they do not state what they expected to find. The CCAT and the SCCCS both

received a quality rating of zero because the authors did not compare the newly developed measure to other related constructs.

Reproducibility.

Terwee et al. (2007) separates this criterion into two categories; agreement and reliability. However, across all papers, statistics to asses these criteria (see Appendix A) were not reported. Therefore, similarly to Strauss et al. (2016), test re-test reliability was used to rate this criterion across all measures.

Test re-test reliability.

Test re-test reliability was only reported in two of the studies, the SCS and the COOL. Both studies reported having a three week interval period between re-testing. Barker et al. (2002) describes reliability scores above .80 as 'good'. Both measures achieved this with the SCS reporting $r = .93$ and the COOL $r = .86$ -.87. Therefore both measures were awarded two points for this criterion. All other measures were awarded zero points.

Floor/ceiling effects.

Only two out of the thirteen measures referred to ceiling effects, the PCS and RCS. Pommier (2009) made reference to ceiling effects in the results section but merely stated that no effects were found. Therefore the PCS was awarded a quality rating of one as they did not report the statistics to support the claim that no floor/ceiling effects were found so readers are unable to verify this. The authors of the RCS reported to have found ceiling effects in their online sample and therefore the RCS scored zero for this criterion. All other measures received a score of zero because they did not report floor/ceiling effects and these could not be deduced from the statistics reported in the studies.

Interpretability.

In order for a measure to receive a quality rating of two for interpretability, the authors needed to have reported the means and standard deviations (SD) of at least four sub-groups of participants (e.g. gender, age, etc.). In addition, studies must, as specified by Terwee et al. (2007), define a score for minimal important change (MIC) in order to aid interpretation.

All measures received a quality rating of one for interpretability. This is because none of the measures reports MIC scores. All of the measures reported the means and SD's of at least one sub-group of participants, which in most cases was the category of gender (e.g. comparing mean compassion scores for males and females). The MCS was the only study who reported standard deviations and means for more than one sub-group, which included age, gender, race, education, employment, marital status and income. However, as with the rest of the papers, it did not report the MIC and therefore was awarded a score of one.

Application.

The self-compassion scale was by far the most commonly applied scale in the literature, with at least 35 studies assessing its psychometric properties and therefore it achieved a maximum score of two. The SCBCS was the second most validated scale of compassion, with 17 studies reporting psychometric properties for the scale, followed by the SCS-SF (8 studies) and the CCAT (4 studies), who also received a score of two. The CLS and the SCSC were only applied in two further studies and so were awarded a score of one. The RCS, SOFI, PCS, MCS, COOL, SCCCS and QES were not found to have been used in any other studies and therefore received a score of zero. Scales which have been validated in further studies also have the potential to increase the ecological validity of the scale. For example, if a scale has been translated and validated across different cultures, time periods

and populations then it is more likely to generalise to real life settings as opposed to measures which have been validated at one time point within one specific sample. The SCS for example, has been translated and validated in over 11 different countries, across both clinical and non-clinical populations.

Discussion

The aim of the systematic review was to identify existing measures of compassion and to evaluate their psychometric properties as described in the original development article. The overall findings suggest that current existing measures of compassion are relatively poor in quality. On average measures received a total score of six out of a possible 18 points against the quality criteria. The quality criteria that measures scored highest on were internal consistency, content validity and construct validity. Reproducibility, responsiveness and floor/ceiling effects were areas in which measures scored most poorly, with few authors assessing these psychometric properties. This suggests that there is no psychometrically robust existing measure which adequately captures compassion in a valid and reliable manner.

The SCS (Neff, 2003a) achieved the highest quality rating score, which suggests that at the time of the review it was the most robust measure of compassion available. The SCS is the most widely used compassion scale and one of the few existing compassion scales with reported normative data, albeit based on a student population. The SCS has good internal consistency (Cronbach's alpha scores ranging from .75 to .81), and reliability has been found to be high (with test-retest correlations ranging from .80 to .88). However, since its initial development, many researchers have gone on to assess the psychometric properties of the scale and have not found support for Neff's (2003a) original psychometric properties. One of

the consistent findings across these studies is that the single factor self-compassion model could not be replicated.

Williams, Dalgleish, Karl, and Kuyken (2014) were the first to review the SCS factor structure in a UK community sample. They concluded that the overall single factor solution, identified by Neff (2003a), did not meet the cut off criteria for acceptable fit in the confirmatory factor analysis. The authors concluded that a more psychometrically robust measure of self-compassion was needed. Since this time other studies have also failed to replicate the one factor solution and have concluded that users of the measure should report the six subscale scores rather than an overall score (Costa, Marôco, Pinto-Gouveia, Ferreira, & Castilho, 2015; López, et al. 2015).

One of the reasons why the factor structure has failed to be replicated may be due to the composition of the scale. The SCS is made up of six subscales, three of which assess positive aspects of self-compassion (mindfulness, common humanity and kindness) and three which assess their negative counterparts (isolation, self-judgement and over-identification). Arguably then, the SCS can be divided into two subscales, one which measures self-compassion and one which measures self-criticism, rumination and isolation. Although related, these are different constructs (Gilbert, McEwan, Matos & Rivis, 2011) and therefore combining them in to one overall factor may be misleading, especially since self-criticism, rumination and isolation have been found to be related to psychopathology (Castilho, Pinto-Gouveia & Duarte, 2017; Ehret, Joormann & Berking, 2015; Gilbert & Irons, 2005). Thus, using an overall SCS score may inflate the scale's link to psychopathology (Muris, 2016).

Neff (2016) sought to address some of these criticisms and argued that the distinction made between the positive and negative subscales was oversimplified as these factors are interrelated. In support, Neff, Whittaker and Karl (2017) argued that through using a bi-factor

model, the use of both an overall self-compassion factor as well as the six factor model was justified. The authors found that 90% of variance in the SCS scores could be explained by an overall self-compassion factor, which they concluded supported the use of an overall score across clinical and non-clinical samples. However, other researchers oppose this argument and maintain that the SCS should be viewed as having two subscales, one which assesses self-compassion and one which assess self-criticism and therefore scores should be reported for each of these two subscales (Lopez et al., 2015).

In sum, there is some controversy around the current use of the SCS. The main issue of contention is how the SCS should be scored, with some arguing for an overall score, some a six factor score and others a positive and negative factor score. Studies have found that whilst the positive subscales of the SCS are related to lower levels of psychopathology, it is the negative subscales which have a much stronger relationship with increased levels of psychopathology (Lopez, et al., 2015). Thus it is important that users of the SCS are aware of the issues outlined above when using the SCS.

Strengths and limitations of the systematic review

The literature review provided an updated review of existing compassion measures and allowed for a broader inclusion of measures than previous reviews. Articles were selected using a structured procedure however, only by one reviewer, which may increase the potential for error or bias in the selection of the papers. Although, any ambiguity of inclusion of papers was discussed with research supervisors. The quality appraisal of the articles was conducted by the same assessor independently, however, the assessor did employ published quality assessment guidelines to help minimise bias.

The review employed a numeric scoring system and calculated a total quality review score for each measure. Terwee et al. (2007) caution against using a total score as they argue

that some of the quality criteria, such as content validity, should be weighted, in terms of importance, more than others. However, they do not indicate what the relative weightings should be and therefore it was deemed, as with preceding reviews (e.g. Strauss et al., 2016; Windle et al., 2011) that a total score would be a helpful way to compare measures.

A potential criticism of this area of research is that some researchers might argue that compassion cannot be measured using self-report questionnaires, as there are many aspects to compassion which do not lend themselves to quantitative self-report measures e.g. paralinguistics, such as tone of voice, can help a person to communicate compassion towards another (Cameron, Mazer, DeLuca, Mohile, & Epstein, 2015). However, whilst self-report measures may not capture every essence of what it means to be compassionate, they can provide some insight as to someone's experience of compassion.

It could also be suggested that compassion should not be measured at an individual level due to ethical implications. For example, one risk of developing tools which measure compassion is that categories might start to emerge which could lead to people being labelled as either compassionate or uncompassionate. Given the current drive in healthcare to promote compassionate care this could result in blaming health practitioners as not being 'compassionate enough' (McPherson, Hiskey & Alderson, 2015), which could lead to sanctions being placed on an already stretched and over-burdened healthcare profession.

This argument is important since quality criteria, such as that of Minimal Important Change, seem less appropriate for a characteristic such as compassion since these standards would impose rather arbitrary and unhelpful criteria as to how significant an increase on a compassion measure is deemed to be. Furthermore using measures of compassion as a type of yardstick for quality care would neglect to account for the variety of contextual factors which can facilitate or deny compassion, such as service pressures and organisational structures. Placing the responsibility of compassionate care at an individual level is perhaps

counterproductive as arguably this needs to take place at a wider organisational level (Crawford, Brown, Kvangarsnes & Gilbert, 2014). These issues are therefore very important to consider in measure development research and will be explored in relation to the current study in the Discussion chapter.

The final points to highlight regarding this review is that it only included English language articles and therefore research published in other languages may have been overlooked. The review also excluded non-peer reviewed articles which may have limited the scope of the review and therefore future reviews may seek to examine this body of literature further.

The review was unique in that it included a broader quality review criteria then earlier reviews, however, the inclusion of the criterion 'application' has some limitations. For example, it is unclear how the authors who developed this criterion made the decision as to the number of additional studies to be awarded a high or low quality rating. In addition there is the potential that more recently developed measures are disadvantaged by this criterion since there would have been less time for additional studies to assess their psychometric properties. Indeed the SCS is the oldest published measure and was found to have been reviewed the most. However, this is not always the case, for example, the CLS was published two years after the SCS and has only been validated in two additional studies and more recently published measures, such as the CCAT, had been reviewed in four additional studies.

This review sought to assess the original scale development papers but as highlighted by the application criterion, a number of the measures, such as the SCS, have undergone further psychometric examination, which if examined may increase or decrease the quality ratings of some of the scales. Thus future reviews should seek to summarise the findings across all published psychometric articles for each scale (see McDowell, 2006). In particular,

a meta-analysis of the psychometric properties of the SCS would be helpful since there are a number of significant contradictions regarding the robustness of the measure.

Summary of systematic literature review.

There is increasing interest in the area of compassion and its application in healthcare. The aim of the present literature review was to investigate the psychometric properties of existing measures of compassion. To date there exists a limited number of psychometrically robust measures which capture an overarching concept of what it means to be compassionate. This review is helpful in its contribution to the compassion literature and highlights the need for the development of alternative measures of compassion (Gilbert et al., 2011; Gu et al., 2017; Strauss et al., 2016; van Dam, Sheppard, Forsyth & Earleywine, 2011; Whomsley, 2014).

Rationale for current study

Neff (2016) presents a case for the self-compassion scale (SCS) as a "psychometrically valid and theoretically coherent measure of self-compassion" (p. 8). However, in addition to the critique that the scale is also assessing self-criticism, rumination and isolation, and therefore possibly inflating its link to psychopathology, the scale also has a number of other limitations. For example, the SCS focuses on three dimensions of self-compassion and therefore encompasses a wide range of factors which make up self-compassion, however, it fails to take into account other attributes, such as empathy, which are key to compassion.

Moreover, one of the main issues with the SCS being the most psychometrically robust measure of compassion is that the SCS only measures compassion towards the self, and not the other orientations of compassion (i.e. to and from others) as identified in Gilbert's

(2009) model of compassion. Similarly, the majority of measures identified in the review only measured one aspect of compassion (e.g. compassion towards others, self-compassion, etc). The only measure identified in the systematic review which sought to assess the different orientations of compassion was the RCS, however this measure scored low in the quality review and therefore, a more robust tool is needed which encapsulates all dimensions of compassion. Furthermore the authors of the RCS claim that their measure is based on the theory of compassion as proposed by Gilbert (2005) and yet the RCS does not capture the two psychologies of compassion: action and engagement. A measure which captures all aspects of compassion would help to identify which aspects of compassion have the greatest impact on well-being and therefore require further therapeutic attention (Gu et al., 2017).

Gilbert et al. (2017) developed the Compassionate Engagement and Action Scales (CEAS) to address some of the limitations of the SCS and therefore provide a more robust measure of compassion. The measure is based on Gilbert's theoretical model of compassion which suggests that that compassion is a social mentality (Gilbert, 2015). In this sense, compassion is seen as an evoultioanry trait which has evolved in order to promote care giving qualities which are seen as crucial to the survival of the human race. The first part of Gilbert's definition of compassion is having a sensitivity to suffering and this reflects the evolutionary idea that in order for human to respond to other's distress (i.e. take action), they first have to be able to notice and approach it (i.e. engagement). For example. A mother must be attuned to her infant's distress signals in order to meet its needs (e.g. food, comfort, etc.). Humans have evolved a number of competencies which help them to first of all engage with distress (e.g. empathy, sympathy, distress tolerance, etc) and then to take action (e.g. attention, reasoning and is aimed at reducing suffering).

There are three orientations of compassion which utilise the competencies of compassionate action and engagement. These orientations are: self-compassion, compassion

toward others and compassion from others. There is research evidence to suggest each of these orientations may have an impact on various processes involved in human distress but to date due to the lack of appropriate measures, there has been limited research which investigates this complex relationship. The CEAS consists of three self-report subscales which aim to measure each of the three orientations (self, others and receive) of compassion and therefore could be an apt scale to support researcher in investigating the relationships between the three orientations of compassion and distress and wellbeing. Each of the three subscales can also be separated into two further subscales, which aim to measure the two psychologies of compassion; engagement and action.

The CEAS was originally developed using student populations and therefore requires further validation. Therefore the aim of this study was to assess the psychometric properties of the CEAS within the general population. In addition the study also sought to investigate other related factors such as stress, anxiety, depression, positive affect and their relationship to the three orientations of compassion.

Previous research has sought to understand the distribution of other constructs, such as levels of empathy (Grühn, Rebucal, Diehl, Lumley, & Labouvie-Vief, 2008), and emotional experiences (Carstensen, Pasupathi, Mayr, & Nesselroade, 2000) in community samples. However, to date there are no research studies which have focused explicitly on the three orientations of compassion in community samples (Roeser & Eccles, 2015) and therefore, little is known about the level of the three orientations of compassion in the general population. Ascertaining levels of compassion in the general population would enable researchers, clinicians, managers and organisations to use this data as a platform in which further research could be developed, such as in the caring profession or with service users (Whomsley, 2014). Furthermore, once normative data have been established, researchers can

then begin to explore what factors may increase or decrease compassion (Barnard & Curry, 2011), which may also help to inform and improve compassion interventions and practices.

Aims and objectives

The main aims of the present study were:

1. To investigate the psychometric properties of the three Compassionate Engagement and Action subscales.

2. To explore the level of compassion as measured by the three Compassion Engagement and Action subscales in an adult community sample.

3. To investigate the relationship between non-clinical depression, anxiety, stress, positive affect and the three orientations of compassion.

The first two aims of the study were exploratory in nature and therefore no explicit hypotheses were developed. The main reason for this was because the CEAS is a new measure and there is limited research on measuring compassion across the three orientations (self, others and receive). However, for the final aim of the study, there is an existing body of research which identifies a relationship between compassion, well-being and psychopathology and therefore two hypotheses were set out specifically in relation to aim three. The first hypothesis sets out to establish whether there is a relationship between the three orientations of compassion and psychopathology and positive effect, as is suggested by the current literature (Neff, 2016). The second hypothesis aims to explore whether the CEAS subscales can explain additional unique variance in the relationship between compassion and psychopathology and positive affect, over and above that explained by the SCS. Based on the fact that the SCS only measures self-compassion and the CEAS measures two further orientations of compassion, it is predicted that the CEAS will account for additional unique variance when controlling for the SCS.

Hypotheses related to aim three:

1. The three Compassionate Engagement and Action subscales will be positively related to positive affect and negatively related to depression, anxiety and stress.

2. The three Compassionate Engagement and Action subscales will explain additional unique variance in the relationships between compassion, positive affect, anxiety, depression and stress over and above the SCS.

Method

Chapter Overview

This chapter will outline the epistemological position of the present study and introduce the study design. The procedure of the study is described along with the recruitment strategy and participant demographics. The measures used in the study will be described and their psychometric properties presented. Finally key ethical considerations for the study will be summarised along with plans for analysis and dissemination of the findings.

Epistemological Positioning

Epistemology is a branch of philosophy concerned with the theory of knowledge. Positivism and interpretivism are two contrasting epistemological positions. Positivism is arguably the 'classic' position in the philosophy of natural sciences and to some extent social sciences (Coolican, 2013). Positivism is based on the premise of discovering causal laws through empirical observations. Proponents of positivism contend that the approach is value-free and therefore sits within the ontological orientation of objectivism (Sale & Brazil, 2004). Positivist science has been defined as "an organised method for combining deductive logic with precise empirical observations of individual behaviour in order to discover and confirm a set of probabilistic causal laws that can be used to predict general patterns of human activity"(Neuman, 2011, p. 95). Large bodies of psychological research, and in particular quantitative research, are rooted in this position. However, there are some difficulties when applying this position to understanding human behaviour. For example, critics of positivism argue that the approach is reductionist and deterministic (Hesse, 1980) as it fails to deal with social context in which human behaviour occurs.

An alternative epistemological perspective to positivism is that of interpretivism, which has dominated qualitative social science research over the last few decades (Bryman,

2016). Within this overarching approach sits researchers and institutions whose position emphasises the phenomenology and hermeneutics of human action. In other words, interpretivism is interested in the lived experience and interpretation of experience rather than discovering hard truths. In contrast to objectivism, interpretivism is underpinned by a constructivist ontology, which is the view that reality is constructed through social interaction and is under constant revision (Sale & Brazil, 2004). Constructionism argues that there is no one definitive reality that can be observed and knowledge is viewed as indeterminate (Guba & Lincoln, 1994). Whilst arguably interpretivism meets some of the potential shortfalls of positivism, it has also received wide criticism, for example for being too subjective and relativist (Raskin, 2001).

Both of these epistemologies offer useful ways of thinking about the world and informing ways of conducting research. However, the position of which this study is underpinned is situated within the centre of these two opposing positions and is known as critical social science (CSS). Advocates of CSS recognise limitations of both a positivist approach (for example that scientific knowledge is fallible) and an interpretivist approach (for example that a reality does exist that is not contingent on human perception, McEvoy & Richards, 2003). CSS states that there is a reality to be studied however, that our concepts and theories about reality are shaped by historical and contextual factors, which need to be considered when interpreting research findings (Bryman, 2016).

Within a CSS framework sits a meta-theoretical critical realist approach (Bhaskar, 1989). The current study adopts a critical realist position which views reality as being composed of "multiple layers: the empirical, the real and the actual" (Neuman, 2011, p.109). Unlike social constructionism, whose main focus is on examining the constructs and theories of reality, critical realism argues that we should try and investigate reality, but from a cautious and critical viewpoint (Pilgrim & Bental, 1999). In line with the viewpoint of this

study, critical realists acknowledge and accept that the categories and constructs they use to understand reality are likely to be flawed or imperfect (Guba & Lincoln, 1994) but trust that the process of research will continue to advance and refine our understandings.

One of the primary purposes of research from a critical realist stance is to obtain knowledge about causal mechanisms (McEvoy & Richards, 2003). This is congruent with the aims of this study, which through the development of a valid measure of compassion, seeks to understand the relationship between compassion and other factors, such as psychological distress. In order to ensure the findings from this study are useful in terms of application at an organisational level, it is useful to infer causation, whilst also taking into account the context of the research. In other words, whilst the findings from this research are likely to reflect current underlying trends, the applicability of the study findings to other areas should be evaluated based on the information provided about the sample demographics and research procedures.

Methodology

In line with the epistemological and ontological position, the present study employed a quantitative methodology with a longitudinal design and used an online questionnaire method to collect data. In order to address the research aims, participants were asked to complete a number of self-report questionnaires including questions regarding demographic information, compassion, positive affect, anxiety, depression and stress. A quantitative methodology was chosen as the most appropriate method to generate the knowledge required in order to investigate the psychometric properties of the Compassionate Engagement and Action Scale (CEAS). In addition, there is limited research into the three orientations of compassion in the general population and therefore the collection of quantifiable questionnaire data was felt to be the most appropriate procedure for exploring this. Collating

quantitative data would also allow for statistical analysis and subsequent interpretation of the relationship between compassion and other variables.

Design

A longitudinal within subjects design was employed in order to investigate the test re-test reliability of the CEAS. All of the measures were administered at an initial time point (time one), and for a sub-sample, the CEAS was re-administered following a three week interval (time 2). To meet the second and third aims of the study, which were to explore the levels of compassion in the general population and its relationship with positive affect and psychopathology, only the data from time one was used, making this aspect of the study cross-sectional in design.

Online data collection method

An online recruitment method was used in order to access a wide sample across the community population, including a widely dispersed geographical area. It also allowed for collection of data in a natural setting therefore increasing generalisability of the results to the general population. Self-administered online questionnaires were employed as they provide a number of advantages when carrying out large scale studies, such as limited cost, efficiency (quicker to administer and more convenient for participants) and access to larger populations (Wright, 2005). In 2016, when this survey was conducted, 89% (23.7 million) of households in Great Britain had internet access and more than 8 out of 10 people used the internet every day (Office for National Statistics, 2016). Therefore it was deemed that an online survey would be the most effective way to access a large and varied community sample.

Some research also suggests that there are added advantages to using online surveys as opposed to face to face, which include reducing interviewer effects (Bryman, 2016). For example, participants may feel more able to disclose sensitive information or answer

questions more honestly in an online anonymised study. In addition, Tourangeau, Conrad and Couper (2013) found that compared with postal surveys, online surveys led to a reduction in social desirability bias. Moreover, consent to participate through online studies is regarded as more informed then telephone or face to face survey research as participants may find it easier to decline participating (Lefever, Dal & Matthiasdottir, 2007). Some critics of online surveys argue that this approach is more disconnected to the participants' responses, however a more objective methodology may also help maintain a more detached perspective in line with a critical realist stance.

Participants

Participants were recruited from the general population. To be eligible to participate in the study participants had to be over the age of 18 years. Participants were not excluded for any other reason.

Recruitment method

Recruitment for the study took place between February 2016 and October 2016. Participants were invited to take part in the study via a number of methods using convenience and snowball sampling methods. These included:

- Personal network recruitment: An email (Appendix B) containing a brief overview of the study and a link to the questionnaire was sent out to friends, family, colleagues and acquaintances of the researcher and included a statement which encouraged recipients to forward the email on to others.

- Social media sites: Information about the study and a link to the questionnaire (Appendix C) was published on social networking websites and forums (such as Facebook and Twitter).

- Mailing lists: The researcher emailed relevant mailing lists (e.g. university departments) with a brief overview of the study and a link to the questionnaire.

- Poster advertisements: Poster advertisements (Appendix D) were displayed at local public places, such as leisure centres, fitness centres, community centres, etc, to try and reach a wider sample.

Sample size

In order to investigate the factor structure of the CEAS a large sample was needed. There are many recommendations regarding sample sizes for factor analysis but a general rule of thumb is for a minimum sample size of 300 (Tabachnick & Fidell, 2001). In factor analysis research there is also a prevalent rule of thumb which suggest that a ratio of between 7-10 participants per item should be employed (Osborne & Costello, 2009; Vet, Ader, Terwee & Pouwer, 2005). However, generally there are no set rules for sample size since it can largely be determined by the type of data. For example, data with higher factor loadings, few cross loadings and high communalities do not require large sample sizes (Guadagnoli & Velicer, 1988; MacCallum, Widaman, Zhang & Hong, 1999). Therefore, based on the above criteria and in order for the results to be replicable and generalizable, the study aimed to recruit a minimum of 300 participants.

Procedure

A survey building software programme called Qualtrics (https://www.qualtrics.com/) was used to develop and host the survey. Qualtrics is a free online survey building programme which has been widely used to help develop social science survey research and was the University of Essex's approved provider for online survey software and data collection. The data from all of the questionnaires was collated using the Qualtrics software programme and then extrapolated into SPSS for analysis. The programme enabled easy

assembly of a professional and easy to use survey with customisable functions. In addition, the programme was free to use, which reduced the costs of the study.

Participants accessed the online survey via a link, which was either emailed to participants, advertised on forums or social networking sites or publicised using advertisements in local settings. The link was provided along with a brief outline of the study and the inclusion and exclusion criteria. After clicking on the link participants were directed to the Qualtrics site where they were presented with the participant information sheet (Appendix E).

The information sheet contained details about the study, relevant contacts, as well as information regarding consent and confidentiality. Participants were asked to read this and were then presented with a consent form (Appendix F). The consent form consisted of five statements adhering to ethical requirements of the study, which participants were required to electronically sign (by checking a tick box next to each statement) before they were able to proceed to complete the questionnaire.

The questionnaire consisted of initial demographic questions (Appendix G) and then presented each measure in turn, starting with the Compassion Engagement and Action Scales (CEAS, Gilbert et al., 2017, Appendix H), followed by the Self-Compassion Scale (SCS, Neff, 2003a, Appendix I), the Depression Anxiety and Stress Scale-21 (DASS-21, Lovibond & Lovibond, 1995, Appendix J), the Santa Clara Brief Compassion Scale (SCBCS, Hwang et al., 2008, Appendix K) and finally the Types of Positive Affect Scale (PAS, Gilbert et al., 2008, Appendix L). The questionnaire took approximately fifteen to twenty minutes to complete, as assessed by a small pilot of the questionnaire.

Following completion of the questionnaire, a debrief information sheet (Appendix M) was provided. The debrief information included the contact details of the researcher and

research supervisor, which participants were invited to contact if they wished to discuss any aspect of the research. Details of the NHS Choices website was also provided. Participants were also invited to contact the researcher if they wished to receive a summarised copy of the overall findings. At this point participants were also invited to provide their email address if they wished to participate in the follow up part of the study. The follow up study involved re-completing the CEAS following a three week interval, which would provide data in order to assess test-retest reliability. Finally, participants were reminded of their right to withdraw before they submitted their answers.

Participants who volunteered to take part in the follow-up part of the study were sent a link to complete the CEAS approximately three weeks following their initial completion. This link followed the procedure outlined above whereby participants were directed to a participant information sheet and consent form. Once the consent form was completed, participants were then directed to a page which asked them to complete the CEAS. Following completion, a debrief page (the same as the one used in the original survey outlined above) was presented and participants were reminded of their right to withdraw before finally being asked to submit the questionnaire.

Measures

The survey consisted of questions regarding demographic information as well as five validated questionnaires. The survey consisted of a total of 118 items. The demographic questions were asked first followed by the five measures.

Demographic information.

The demographic information questions were designed by the researcher. This data was collected in order to obtain information on participant's demographic information, which

could then be compared to the general census population data in order to understand how representative the sample was of the general population.

The demographics collected were: gender, age, marital status, employment status, level of educational attainment, identified ethnicity, country of birth, country of residence and previous experience or knowledge of mindfulness and/or compassion practices. This final question was included as it was hypothesised that there was potential for a sampling bias to occur in responses from participants who were very engaged with compassionate practice (e.g. researchers or clinicians with a specialist interest in compassion). This was important since the recruitment strategy would involve the researcher emailing colleagues and acquaintances who may have had a particular interest in compassion practices.

The Compassionate Engagement and Action Scales (CEAS, Gilbert et al., 2017).

The Compassionate Engagement and Action Scales are three subscales which measure the three orientations of compassion: self-compassion (e.g. "I am motivated to engage and work with my distress when it arises"), the ability to be compassionate towards others (e.g. "I am motivated to engage and work with other peoples' distress when it arises") and the ability to receive compassion from key persons in the respondent's life (e.g. "other people are actively motivated to engage and work with my distress when it arises").

The scale composition reflects the definition set out by Gilbert (2009), which emphasises that it is not just the ability to engage with and tolerate distress (first psychology) that is important but also to have the commitment and courage to act in a way that will be helpful in alleviating distress (second psychology). Each scale is made up of ten items which reflect the two psychologies of compassion. In the first section of each subscale, six items are formulated to reflect the six compassion attributes in the CFT model which are required in order to engage with compassion. The six attributes are: (1) sensitivity to the suffering of self

and others, (2) sympathy, being emotionally attuned to feelings of distress in the self and others, (3) non-judgemental and accepting stance towards the self and others, (4) empathic understanding of our own thoughts and feeling and those of others, (5) tolerating distress as opposed to avoiding distress and (6) caring for the well-being of the self and others (Gilbert, 2009). Within this section are also two reversed filler items.

The second section of each subscale includes four more items which reflect specific compassionate actions to deal with distress. The four compassionate actions are: (1) focusing attention on things that are helpful, (2) thinking and reasoning to bring about a more balanced perspective of what is likely to be helpful, (3) taking actions to relieve distress and (4) creating inner feelings of support, warmth and kindness to deal with distress in a compassionate and helpful way (Gilbert, 2009). This subscale also includes another reversed filler item.

Participants are asked to rate each statement according to how frequently it occurs on a scale of 1 to 10 (1 = "Never"; 10 = "Always"). Total scores for each subscale are computed by summing the score for each item, excluding the reversed filler items. The reversed filler items are not included in the scoring of the measure, as stipulated by the authors who state that they were only included in order to minimise response bias. The minimum score obtainable on each subscale is 10 and the maximum score is 100.

Permission to use this scale was granted by the lead author on the Compassionate Mind Foundation website (http://compassionatemind.co.uk/clinicians/scales).

Self-Compassion Scale (SCS; Neff, 2003a).

The SCS is a 26-item scale which assesses six self-evaluative factors. There are three positive factors: self-kindness (e.g. "I try to be loving towards myself when I'm feeling

emotional pain"), common humanity (e.g. "When things are going badly for me, I see the difficulties as part of life that everyone goes through"), mindfulness (e.g. "When something upsets me I try to keep my emotions in balance"), and three negative factors: self-judgement (e.g. "I'm disapproving and judgmental about my own flaws and inadequacies"), isolation (e.g. "When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world") and over-identification (e.g. "When I'm feeling down I tend to obsess and fixate on everything that's wrong").

Participants indicate how often they engage in these ways of self-relating on a five-point Likert scale ranging from 5 "almost always" to 1 "almost never". The thirteen items which represent the negative factors are reverse coded so that a higher score equals a lower frequency of these types of self-relating. A total score can be computed by calculating the mean score of all items, or a mean score for each subscale can be calculated. A higher score denotes a higher level of self-compassion, with a minimum obtainable score of 1 and maximum obtainable score of 5.

In the original scale publication, the scale was found to have good internal consistency (Cronbach's α = .92), as did the six subscales (with Cronbach's α ranging from .75-.81). Test re-test reliability was also found to be good after a three week interval for the total score (Cronbach's α = .93) and the six subscale scores (with Cronbach's α ranging from .80-.88). The SCS has been further validated in other populations and also has good internal reliability (Allen et al., 2012; Neff & Pommier, 2013; Werner et al., 2012). More recently Neff, Whittaker and Karl (2017) reported internal consistency scores (Cronbach's alpha) for the overall scale and the six subscales as ranging from .70-.95. Due to the criticisms of the use of the SCS total score, previously outlined in the Introduction chapter, the current study will utilise both the total score and subscale scores.

Permission to use the scale is granted by the author on their website (http://www.self-compassion.org/scales-for-researchers.html).

Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995).

The DASS-21 is a shortened version of the DASS-42 and consists of three subscales, each with seven items, measuring depression (e.g. "I couldn't seem to experience any positive feeling at all"), anxiety (e.g. "I was aware of dryness of my mouth") and stress (e.g. "I tended to over-react to situations"). Participants are asked to rate how much each statement applied to them over the past week, on a 4-point Likert scale ranging from 0-3 (0 = did not apply to me at all; 3 = applied to me very much, or most of the time).

A total score can be computed by summing all scale items. A total score for each subscale can also be calculated by summing the seven items for each subscale. The minimum score obtainable for the DASS-21 is 0 and the maximum obtainable score is 63 (or 21 for each subscale). The authors provide recommended cut-off scores for severity levels for each of the three subscales. Scores below nine on the depression subscale, seven on the anxiety subscale and 14 on the stress subscale are considered to be normal. Scores above these cut-off levels are considered to indicate presence of psychological distress.

The DASS-21 subscales have been reported to have good internal reliability in both clinical and non-clinical populations, as assessed by Cronbach's alpha statistics, with studies reporting ranges from $\alpha = .88$-$.94$ for the depression subscale, $\alpha = .82$-$.87$ for the anxiety subscale, $\alpha = .90$- $.91$ for the stress subscale and $\alpha = .88$ for the total score (Antony, Bieling, Cox, Enns & Swinson, 1998; Henry & Crawford, 2005). More recently, the DASS-21 has been reviewed across various populations and has also been found to have good internal consistency (Oei, Sawang, Goh & Mukhtar, 2013; Randall, Thomas, Whiting & McGrath, 2017; Weiss, Aderka, Lee, Beard & Björgvinsson, 2015).

This scale is available in the public domain.

The Santa Clara Brief Compassion Scale (SCBCS, Hwang, Plante & Lackey, 2008)

The Santa Clare Brief Compassion Scale (SCBCS) is a shortened version of Sprecher and Fehr's (2005) 21- item Compassionate Love Scale for Humanity (CLS). The SCBCS is a five item measure which aims to measure compassion and its link to prosocial behaviour. An example of an item is "I would rather engage in actions that help others, even though they are strangers, then engage in actions that would help me." Respondents are asked to rate statements on a 7-point Likert scale, ranging from 1 "not at all true for me" to 7 "very true for me". Scores are calculated by summing the scores from all items. The minimum obtainable score is 5 and the maximum obtainable score is 35.

The correlation between the original and the brief version of this scale was reported to be r = .96 and Cronbach's alpha of the five-item scale was found to be .90 (Hwang et al., 2008). More recently Plante and Mejia (2016), in a large (6,763 participants) scale study of the reliability and validity of the SCBCS, reported Cronbach's alpha scores ranging from .89 to .90. The study concluded that the SCBSC was a reliable and valid measure for compassion based on good split-half reliability, test re-test reliability, convergent and discriminate validity scores, as well as factor analysis scores (Plante & Mejia, 2016).

This scale is available in the public domain.

Types of Positive Affect Scale (PAS, Gilbert et al., 2008).

The Types of Positive Affect Scale was developed to measure the degree to which people experience different positive emotions. Respondents are presented with a list of 18 'feeling' words and asked to rate each one on a 5 point Likert scale to indicate how

characteristic it is of them (0 = "not characteristic of me" to 4 = "very characteristic of me"). The scale is made up of three subscales, these are: activating positive affect (eight items, e.g. "excited", "dynamic", "active"); relaxed positive affect (six items, e.g. "relaxed", "calm", "peaceful") and safeness/contentment positive affect (four items e.g., "safe", "secure", "warm). The scale was reported to have good psychometric properties with Cronbach's alpha scores of .83 for activating positive affect and relaxed positive affect, and .73 for safeness/contentment positive affect.

Each subscale is scored by summing the scores from each item that relate to that subscale. The minimum score obtainable is 0 and the maximum score obtainable for the active positive affect subscale is 32, for the relaxed positive affect subscale is 24 and for the safe positive affect subscale is 16.

Permission to use this scale is granted by the lead author on the Compassionate Mind Foundation website (http://www.compassionatemind.co.uk/resources/scales.htm).

Analysis

All data was analysed using version 21 of the IBM Statistical Package for Social Sciences (SPSS 21, SPSS Inc., 2012) and SPSS analysis of moment structures (Amos) 21.0 version (IBM Corp, 2012). Questionnaire data were exported directly from Qualtrics to a SPSS database. Data was cleaned prior to analysis.

In order to investigate the psychometric properties of the CEAS, both principal component analysis and confirmatory factor analysis were conducted to identify and confirm the factor structure of the CEAS in the general population. Internal reliability was assessed using Cronbach's alpha. Test re-test reliability was assessed with a bivariate correlation between the initial time point and a repeat administration three weeks later. In the second part

of the analysis, correlations and multiple regressions were conducted to investigate the relationship between depression, anxiety, stress, positive affect and compassion.

Ethical Considerations

Ethical approval for the study was sought prior to commencement of data collection. Ethical approval was granted by the University of Essex Ethics Committee (Appendix N). Ethical issues were considered with reference to the British Psychological Society (BPS) Code of Human Research Ethics (BPS, 2014) and Guidelines for internet-mediated research (BPS, 2013).

Consent

Informed consent was obtained by an electronic consent form prior to completion of the questionnaire. Commencement to the survey could only occur once the consent form had been completed. This was made explicit in the information sheet. Participants were also encouraged to contact the researcher or the researcher's supervisor if they had any questions regarding the study before consenting to participate. The contact details of the researcher and the lead supervisor were provided for this purpose, including a postal address, contact telephone number and email address. Continued consent was also checked on completion of the questionnaire where participants were asked if they would like to submit their responses or exit the survey.

The guidelines for internet-mediated research (BPS, 2013) highlights issues of confirming the identity of participants in online studies. This is particularly important when considering age since this study aimed to recruit adults only however, it was not possible to verify participant's age. Thus, an explicit statement was included in the consent form asking participants to confirm that they were over the age of 18 years.

Right to withdraw

The participant's right to withdraw was explained on the participation information sheet and participants were asked to confirm that they had understood this on the consent form. It was explained that participants could withdraw from the study at any time prior to submission of the questionnaire and that they would not need to provide a reason. It was also made explicit that once the survey had been submitted the data could no longer be withdrawn from the study as this data would be unidentifiable.

Confidentiality and anonymity

All data was collected anonymously via an online survey. A unique personal identifier was automatically generated by the survey host Qualtrics for each individual who completed the survey. The researcher did not ask participants to produce any identifiable information within the questionnaire to ensure anonymity. The only instance whereby personal data was obtained was for participants who opted-in to repeat the CEAS following a three week delay, and for those who requested a summary of the findings. Participants were asked to provide email addresses for the survey to be resent to them and/or for a summary of the findings to be sent to them. To ensure confidentiality and anonymity, these participants were allocated a participant identification number and email addresses were stored on a separate data base. The email addresses were stored in secure (password protected and encrypted) databases on the University of Essex M drive or on a password protected laptop.

All data was stored in line with the Data Protection Act (1998). Any data inputted into SPSS was anonymous and unidentifiable. All data was stored in secure (password protected and encrypted) databases on the University of Essex M drive or on a password protected laptop. Access to the data was granted to the researcher and research supervisors only. Participants were provided with information about how their data would be stored. The final report of the data did not disclose any identifiable personal data.

Minimising harm

Consideration was given as to which scales should be included in the survey. It was deemed to be inappropriate to include questions that were related to risk (e.g. suicidal ideation or intention) or that might cause high levels of distress. Thus, the measures included in the survey were carefully screened and selected to ensure they contained no questions which asked participants about potentially distressing topics. Participants were provided with contact details of researcher and lead supervisor if they wanted to discuss any concerns raised as a result of taking part in the study. In addition, in the participant debrief information sheet, participants were encouraged to seek support from their GP or to access the NHS choices website if they found any aspect of completing the questionnaire distressing.

Dissemination

The findings from this study will be published in accordance with the University of Essex's procedures for publishing Theses. The findings may be shared within the compassion research community via the Compassionate Mind Foundation research forum. The research will be presented at the University of Essex School of Health and Human Sciences annual research conference. The findings could also be presented at another relevant conference such as the Compassionate Mind Foundation Annual conference. The study may be also be submitted for publication in a relevant journal, for example, the British Journal of Clinical Psychology. Participants were informed of the above and that the completed dissertation would be published in the Albert Sloman Library, at the University of Essex, as well as being made freely available to access online. For participants who requested to receive information regarding the findings of the study, a brief overview summary of the findings was shared.

Results

Chapter Overview

The Compassionate Engagement and Action Scale (CEAS) is the first measure of compassion which assesses the three orientations of compassion; compassion towards others, towards self and receiving compassion from others. However, to date the CEAS has only been validated within student populations. Therefore, the current study sought to assess the psychometric properties of the CEAS within the general population. The second aim of the study was to investigate the level of compassion, as measured by the CEAS, in an adult community sample. And finally, the third aim was to investigate the relationship between non-clinical depression, anxiety, stress, positive affect and the three orientations of compassion.

This chapter begins by providing information on the sample demographics. This is followed by an account of the screening and assessment of the normal distribution of the data. A number of statistical analyses were carried out in order to meet the aims of the study. Firstly, the psychometric properties of the CEAS were examined. Construct validity was assessed using principal component analysis and confirmatory factor analysis. Internal reliability was examined using Cronbach's alpha statistics. External reliability of the scale was assessed using test re-test reliability on a subgroup of the sample. Suggestions are made as to the exclusion of a number of items for the CEAS based on the results. Furthermore an assessment of convergent validity of the CEAS was conducted using bivariate correlations with other existing compassion measures. Correlations were also conducted between the three CEAS subscales to assess for inter-correlations and discriminate validity. Secondly, descriptive statistics are then reported which indicate the level of compassion in the general population. Finally, the relationship between compassion, non-clinical depression, anxiety, stress and positive affect were explored using multiple regression.

Sample demographics

A total of 367 participants took part in the first phase of the study (time one). On closer inspection of the data, a number of participants (n=52) had not fully completed (less than 95%) the survey. These participants were excluded from the final data set and therefore, the final sample consisted of 315 participants. In order to assess the test re-test reliability of the CEAS, all participants from time one were invited to complete the CEAS approximately three weeks following initial survey completion (time two). A total of 42 participants completed the CEAS at time two. Demographic information was collected for both time one and time two samples.

Age and gender

The age of the participants ranged from 20 years to 80 years, with a mean age of 39 years (SD 12.7). This is comparable to the average UK population which is currently thought to be 40 years (Office for National Statistics, 2015). Of the 315 participants, 263 (83.5%) were female and 52 (16.5%) were male. The age of the female participants ranged from 20 years to 80 years (mean age 38, SD 12.31). The age of the male participants ranged from 25 years to 77 years (mean age 42, SD 14.14).

The age of the participants from the time 2 sample ranged from 25 years to 68 years, with a mean age of 40 years (SD 12.15). Of the 42 participants, 35 (83.3%) were female and 7 (16.6%) were male.

Ethnicity

The majority of the sample (79%) reported their ethnicity as White British. Table 6 shows a breakdown of participant's ethnicity. Comparing this data to the ethnicity data from the most recent census for England and Wales showed that the ethnicity breakdown of

participants was representative of the general population (Office for National Statistics, 2011).

Table 6

Ethnicity Characteristics of Participants

Ethnicity	N.	Percentage
White English/Welsh/Scottish/Northern Irish/British	249	79
White Irish	5	1.6
White Gypsy or Irish Traveller	1	.3
Any other White background	24	7.6
White and Black Caribbean	1	.3
White and Asian	2	.6
Any other Mixed/Multiple ethnic background	5	1.6
Indian	7	2.2
Bangladeshi	1	.3
Chinese	3	1.0
Any other Asian background	1	.3
Black African	5	1.6
Black Caribbean	4	1.3
Any other Black/African/Caribbean background	2	.6

Arab	1	.3
Any other ethnic group	4	1.3

Country of birth and residence

As the survey was not restricted to a UK population, data was collected to ascertain participant's nationality and country of residence. In sum, 268 (85%) participants were born in the UK and out of the 315 participants, six reported to reside in countries other than the UK. Thus the sample was predominantly a UK sample.

Education and employment status

Participants were asked to indicate their highest level of educational attainment. Table 7 shows the breakdown of participant educational levels.

Table 7

Participant Education Level

Level of education	N.	Percentage
No qualifications	5	1.6
1-4 GCSEs (any grades) or equivalent (e.g. Level 1 qualifications 1-4 O Levels/CSE, Entry Level, Foundation Diploma).	10	3.2
5+ GCSEs or equivalent (e.g. 5+ O Level (Passes)/CSEs (Grade 1)/GCSEs (Grades A*-C), School Certificate, 1 A Level/ 2-3 AS Levels/VCEs, Intermediate/Higher Diploma, Welsh Baccalaureate Intermediate Diploma).	14	4.4
NVQ level 2, Intermediate GNVQ, City and Guilds Craft, BTEC First/General Diploma, RSA Diploma.	11	3.5

Apprenticeship	4	1.3
NVQ Level 3; Advanced GNVQ, City and Guilds Advanced Craft, ONC, OND, BTEC National, RSA Advanced Diploma.	8	2.5
NVQ Level 4-5, HNC, HND, RSA Higher Diploma, BTEC Higher level, Foundation degree (NI).	1	0.3
Professional qualifications (for example teaching, nursing, accountancy).	34	10.8
Degree level or above (e.g. Degree (for example BA, BSc), Higher Degree (for example MA, PhD, PGCE).	220	69.8

Overall, 220 (70%) participants reported to have achieved a level of education equivalent to a degree level or above. Participants were also asked to indicate their current employment status. Table 8 shows a breakdown of participant's employment status or most recent occupation.

Table 8

Participant Employment Status

Employment characteristics	N.	Percentage
Managers, Directors and Senior Officials	16	5.1
Professional Occupations	184	58.4
Associate Professional and Technical Occupations	7	2.2
Administrative and Secretarial Occupations	23	7.3

Skilled Trades Occupations	3	1.0
Caring, Leisure and Other Service Occupations	30	9.5
Sales and Customer Service Occupations	7	2.2
Process, Plant and Machine Operatives	1	0.3
Elementary Occupations	1	0.3
Other	19	6.0
Retired	15	4.8
Unemployed	5	1.6
Prefer not to say	4	1.3

Overall, 291 (92.3%) participants reported to be employed, five (1.6%) described themselves as unemployed and 15 (4.8%) described themselves as retired. Four (1.3%) participants stated that they would prefer not to disclose their employment status. The majority of participants (58.4%) reported to have professional occupations.

Marital status

Single and married were the two largest categories in marital status that participants assigned themselves to. Table 9 shows a breakdown of participant marital status.

Table 9

Participant Marital Status

Marital status	N.	Percentage
Single	139	44.1
Married	139	44.1
Separated, but still legally married	9	2.9
Divorced	20	6.3
Widowed	7	2.2
Surviving partner from a same-sex civil partnership	1	0.3

In sum, 139 (44%) participants described themselves as single and 139 (44%) as married.

Exposure to mindfulness and compassion practice

Due to the method of recruitment used, which was predominantly snowball sampling, it was anticipated that the sample may have an increased number of participants with some prior experience of mindfulness and/or compassion practices. Therefore a question was included which asked participants to what extent would they agree with the statement: "I have had a lot of experience using mindfulness and/or compassion practices". Participants were asked to respond to this on a 5 point Likert scale ranging from strongly disagree to

strongly agree. Table 10 shows the breakdown of participants' experience using mindfulness or compassion practices.

Table 10

Participant Experience of Mindfulness/Compassion Practices

Question Response	N	Percentage
Strongly Disagree	22	7.0
Disagree	39	12.4
Neither Agree nor Disagree	70	22.2
Agree	145	46.0
Strongly Agree	39	12.4

Out of the whole sample, 184 (58.4%) participants agreed or strongly agreed that they had experience using mindfulness and compassion practices.

Preliminary data analysis

Data screening and missing data

All data was collected online using Qualtrics (an online survey software programme) and was exported into SPSS version 21. A random sample of data (5%) was checked to ensure accuracy of the data export into SPSS.

Data from all outcome variables was plotted using box plots and histograms and any outliers were checked with the original data set for any mistakes in data entry. All outliers were found to have been correctly imported. Initially, 367 participants were reported to have completed the survey, however on review 52 of these participants had only partially completed the survey. Due to the setup of the survey, these responses could not be included

in the final data set as in order to confirm consent, participants had to agree to submit their

data at the end of the survey. However, the Qualtrics software programme automatically

generated all data for anyone who had started the survey, regardless of whether or not they

had agreed to submit. Therefore, for ethical reasons, these participants' responses were

excluded and the data could not be assessed for differences between the drop-out group and

the final sample for any potential biases in sample. Of the final 315 sample who had

consented for their data to be used, two of the participants had four missing items and

therefore further statistical analysis was performed using Listwise exclusion.

Assumptions of parametric analysis

A number of tests were conducted to examine whether or not the data met the

assumptions required to perform parametric analysis. The majority of statistical tests work on

the assumption that data is normally distributed and that there is homogeneity between the

variables that are being measured (Field, 2009). If parametric tests are used on data which is

not normally distributed then the results are likely to be inaccurate and so it is important to

assess this prior to data analysis.

Firstly all variables were examined by visually inspecting the P-P plots and

histograms. There was some deviation of data values from the diagonal line on the P-P plots

and the histograms appeared to be slightly negatively skewed for the CEAS self-compassion

and compassion towards others subscales. The receiving compassion subscale appeared to be

normally distributed. The data at time 2 for the CEAS subscales also appeared to be normally

distributed (please refer to Appendix O for histograms and P-P plots).

In order to investigate further whether the distribution of scores deviated from a

comparable normal distribution, the Kolmogorov-Smirnov test and the Shapiro-Wilks test

were calculated. The Kolmogorov-Smirnov test and the Shapiro-Wilks were calculated for each of the CEAS subscales at time 1 and time 2, as shown in Table 11.

Table 11

Kolmogorov-Smirnov and the Shapiro-Wilks Scores

	Kolmogorov-Smirnov statistic	Shapiro-Wilk statistic
SC time 1	.07*	.97*
CO time 1	.11*	.91*
RC time 1	.07*	.98*
SC time 2	.15*	.96
CO time 2	.12	.93*
RC time 2	.14*	.94*

Note. SC = CEAS self-compassion subscale; CO = CEAS compassion towards others subscale; RC = CEAS receive compassion subscale.

* significant $(p < .05)$

For the time 1 sample, both the Kolmogorov-Smirnov and the Shapiro-Wilks were significant at <0.5, which indicates a deviation from normality. The time 2 data showed mixed results in terms of significance, but all subscales had significant scores for at least one of the tests, therefore it could be considered that the time 2 data was not normally distributed. However, the Kolmogorov-Smirnov and the Shapiro-Wilks test are based on null hypothesis significance testing which means that in large samples they are likely to be significant and therefore unreliable (Field, 2009).

Therefore, a more accurate way to assess normality of data in a larger sample is to review the skewness and kurtosis values (Kim, 2013). Consequently the skewness and kurtosis indices were examined and the values are shown in Table 12.

Table 12

Skewness and Kurtosis Values for the CEAS at Time 1 and Time 2

	Time 1			Time 2		
	Self-Compassion	Compassion to Others	Compassion Receive	Self-compassion	Compassion to Others	Receive compassion
Skewness	-.77	-1.49	-.47	-.43	-.88	-.81
Kurtosis	1.13	4.23	.35	-.34	.41	.04

When reviewing the absolute values of skewness and kurtosis for the CEAS, none of the subscales were found to violate normal distribution according to the criteria set out by West, Finch and Curran (1996). West et al., (1996) state that skewness values less than 2 and kurtosis values less than 7 indicate normal distribution, which all scores met. All other variables (SCS, PAS, DASS-21 & SCBCS) were also assessed and none were found to violate the normal distribution (see Appendix P). Therefore parametric tests were used for all statistical analyses.

Study aim 1: Assessing the psychometric properties of the CEAS

Construct validity

Principal Component Analysis.

The purpose of the factor analysis was to address the main aim of the study, which was to assess the psychometric properties of the CEAS in the general population. Factor analysis can be used to assess validity of a measure and to summarise relationships into closer fitting factor scores, which can be used in subsequent analysis, such as regression (Thompson, 2004). Principal component analysis (PCA) is one method commonly used to extract factors. PCA aims to establish which linear components exist within the data and how a particular variable might contribute to a particular component (Field, 2009). Thus it enables the summarising of correlating variables into new variables with minimal loss of information (Blunch, 2013). Both exploratory factor analysis and PCA have been found to produce nearly identical solutions (Field, 2009), however, PCA has been argued to be a more robust method of estimation than factor analysis (Stevens, 1996). Furthermore, PCA is a useful initial step prior to conducting a confirmatory factor analysis (CFA) as it reveals a lot of information about the number and nature of factors (Tabachnick & Fidell, 2001).

In order to assess the factor structure of the CEAS, a principal component analysis was conducted on 30 of the 36 items of the CEAS. The six reversed filler items were removed from the analysis, as stipulated by the author (Gilbert et al., 2017), who argues that these items were only included in the measure to deter respondent bias and therefore should not be included in scoring or analysis. The scores on these items were examined by reviewing a subsample (5%) of the raw scores to check that they were congruent with the scores on the other items. For example, a participant who scored highly on the measure items (e.g. "I reflect on and make sense of other people's distress") would be expected to score low on the reversed filler items (e.g. I do not tolerate other people's distress") and vice versa. The scores did not indicate respondent bias.

Preliminary analysis.

The correlation matrix (see Appendix Q) was examined using the guidelines from Field (2009) and all 30 items were found to correlate with the majority of other items, indicating that there was enough inter-correlation to conduct a PCA. There were no correlation coefficients greater than .90, which indicates that there were no issues with multicollinearity. In addition the determinant of the correlation matrix was 0.000144, which is greater than the necessary value of 0.00001 (Field, 2009). Since all items correlated reasonably well and there were no correlation coefficients which were excessively large, no items were deleted from the PCA.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a score of .91. According to Kaiser (1974) this indicates that the sample size was adequate for the analysis as the patterns of correlations were compact and therefore a factor analysis should produce distinct and reliable factors. A KMO value between .70 and .80 are considered good and a value above .90 is considered as 'superb' (Hutcheson & Sofroniou, 1999). Each of the

individual variable KMO values were reviewed in the anti-image correlation matrix and all values were above .70 (values should be a minimum of .50). In addition, Bartlett's test of sphericity ($x2$ (435) = 6131.797, p < .001) was significant, which also indicated that factor analysis was appropriate, as correlations between items were sufficiently large.

Principal component analysis.

An oblique rotation was used (direct oblimin) to allow for correlation between factors. The model had 30% of non-redundant residuals with absolute values greater than .05, indicating adequate fit for the data. This is based on criteria which stipulate that no more than 50% of non-redundant residuals should have values greater than .05 (Field, 2009).

Five components met the Kaiser-Guttman criterion of retaining factors with eigenvalues greater than one (Guttman, 1955). However, on examination of the scree plot (as shown in Figure 2), a three factor model was evident as indicated by the point of inflexion.
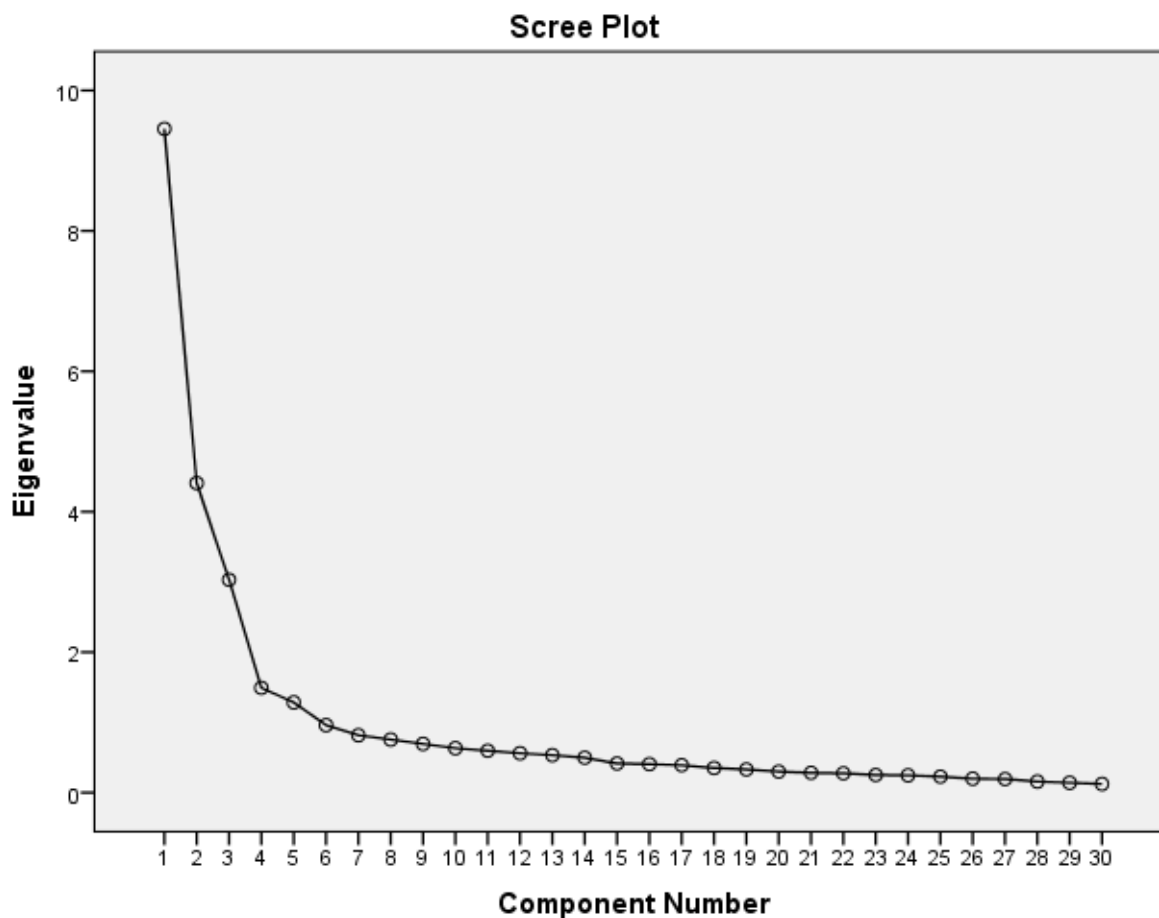
Figure 2. Scree plot.

Based on the scree plot, a three factor model was examined and compared with the five factor model. On comparison of the two models it was decided that a three factor model had the best fit when reviewing the content of individual items using the pattern matrix. The fourth and fifth components of the five factor model were made up of four items each and the content of the items did not appear to relate meaningfully. It is also advised that five or more strong loading items indicate a solid factor (Osborne & Costello, 2009). Moreover, the scree plot is considered to be the most accurate indication for extracting factors in samples of over 250 (Stevens, 2002), as Kasier's criteria tends to overestimate the number of factors (Nunnally & Bernstein, 1994). This will be discussed further in the Discussion chapter.

Thus, a three factor model was retained for the final analysis, which converged and explained 56.3% of the variance. On reviewing the factor loadings after rotation it appeared that component 1 represented compassion towards others, component 2 represented receiving compassion and component 3 represented self-compassion. These factors correspond with the three subscales of the CEAS and therefore suggest that the subscales can be differentiated as three different aspects of compassion, but also, as expected, correlate as they assess the same underlying construct. Table 13 shows the factor loadings after rotation.

Table 13

Pattern Matrix [a] Showing Factor Loadings After Rotation

	Component		
	1: Compassion towards others	2: Receiving compassion	3: Self-compassion
Q18_5 - 5. I express feelings of support, helpfulness and encouragement to others.	.82		
Q17_1 - 1. I am motivated to engage and work with other peoples' distress when it arises.	.81		
Q17_2 - 2. I notice and am sensitive to distress in others when it arises.	.80		
Q18_1 - 1. I direct attention to what is likely to be helpful to others.	.79		
Q18_2 - 2. I think about and come up with helpful ways for them to cope with their distress.	.74		

Q18_4 - 4. I take the actions and do the   **.74**

things that will be helpful to others.

Q17_6 - 6. I reflect on and make sense of   **.74**

other people's distress.

Q17_4 - 4. I am emotionally moved by   **.68**

expressions of distress in others.

Q17_8 - 8. I am accepting, non-critical   **.57**

and non-judgemental of others people's

distress.

Q17_5 - 5. I tolerate the various feelings   .40

that are part of other people's distress.

Q14_4 - 4. I am emotionally moved by   .28

my distressed feelings or situations.

Q21_5 - 5. Others are able to treat me   **-.87**

with feelings of support, helpfulness and

encouragement.

Q21_1 - 1. Others are able to direct their   **-.86**

attention to what is likely to be helpful.

Q21_2 - 2. Others are able to think about   **-.86**

and come up with helpful ways for me to

cope with my distress.

Q21_4 - 4. Others are able to take the   **-.86**

actions and do the things that will be

helpful.

Q20_6 - 6. Others reflect on and make sense of my feelings of distress.	**-.82**	
Q20_1 - 1. Other people are actively motivated to engage and work with my distress.	**-.82**	
Q20_2 - 2. Others notice and are sensitive to my distressed feelings when they arise.	**-.80**	
Q20_8 - 8. Others are accepting, non-critical and non-judgemental of my feelings of distress.	**-.79**	
Q20_4 - 4. Others are emotionally moved by my distressed feelings.	**-.73**	
Q20_5 - 5. Others tolerate my various feelings that are part of my distress.	**-.59**	
Q15_2 - 2. I think about and come up with helpful ways to cope with my distress.		**.88**
Q15_4 - 4. I take the actions and do the things that will be helpful to me.		**.84**
Q15_1 - 1. I direct my attention to what is likely to be helpful to me.		**.83**
Q15_5 - 5. I create inner feelings of support, helpfulness and encouragement.		**.77**

Q14_1 - 1. I am motivated to engage and work with my distress when it arises.	**.75**		
Q14_8 - 8. I am accepting, non-critical and non-judgemental of my feelings of distress.	**.70**		
Q14_6 - 6. I reflect on and make sense of my feelings of distress.	**.61**		
Q14_5 - 5. I tolerate the various feelings that are part of my distress.	.40		
Q14_2 - 2. I notice, and am sensitive to my distressed feelings when they arise in me.	.39		
Eigenvalues	9.5	4.4	3
% of variance	31.5	14.7	10.1

Note. Factor loadings over .40 appear in bold. Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

[a] Rotation converged in 6 iterations.

There was one item which did not load on to the factor which corresponded with the subscale from which it originated from. This was the item Q14-4-4, 'I am emotionally moved by my distressed feelings or situations.' In the original questionnaire this item was included in the self-compassion subscale. However, in the PCA it loaded highest on to factor 1, which was deemed to represent compassion towards others. The factor loading for this individual item was very low at .28. Rules of thumb recommended that values below .40 should not be included in the component (Zygmont & Smith, 2014). The other item which did not meet this

inclusion criteria was item 14-2-2, 'I notice, and am sensitive to my distressed feelings when they arise in me'. Both items' communality scores were reviewed and these were also very low (<.40), as shown in Table 14.

Table 14

Communalities

Item	Initial	Extraction
Q14_1 - 1. I am motivated to engage and work with my distress when it arises.	1.00	.60
Q14_2 - 2. I notice, and am sensitive to my distressed feelings when they arise in me.	1.00	.32
Q14_4 - 4. I am emotionally moved by my distressed feelings or situations.	1.00	.17
Q14_5 - 5. I tolerate the various feelings that are part of my distress.	1.00	.20
Q14_6 - 6. I reflect on and make sense of my feelings of distress.	1.00	.50
Q14_8 - 8. I am accepting, non-critical and non-judgemental of my feelings of distr...	1.00	.45
Q15_1 - 1. I direct my attention to what is likely to be helpful to me.	1.00	.66
Q15_2 - 2. I think about and come up with helpful ways to cope with my distress.	1.00	.76
Q15_4 - 4. I take the actions and do the things that will be helpful to me.	1.00	.68
Q15_5 - 5. I create inner feelings of support, helpfulness and encouragement.	1.00	.60

Q17_1 - 1. I am motivated to engage and work with other peoples'   1.00   .72

distress when it arises.

Q17_2 - 2. I notice and am sensitive to distress in others when it arises.   1.00   .63

Q17_4 - 4. I am emotionally moved by expressions of distress in others.   1.00   .44

Q17_5 - 5. I tolerate the various feelings that are part of other people's   1.00   .18

distress...

Q17_6 - 6. I reflect on and make sense of other people's distress.   1.00   .52

Q17_8 - 8. I am accepting, non-critical and non-judgemental of others   1.00   .30

people's dist...

Q18_1 - 1. I direct attention to what is likely to be helpful to others.   1.00   .69

Q18_2 - 2. I think about and come up with helpful ways for them to cope   1.00   .62

with their...

Q18_4 - 4. I take the actions and do the things that will be helpful to   1.00   .62

others.

Q18_5 - 5. I express feelings of support, helpfulness and encouragement   1.00   .69

to others.

Q20_1 - 1. Other people are actively motivated to engage and work with   1.00   .67

my distress...

Q20_2 - 2. Others notice and are sensitive to my distressed feelings when   1.00   .65

they arise in me

Q20_4 - 4. Others are emotionally moved by my distressed feelings.   1.00   .56

Q20_5 - 5. Others tolerate my various feelings that are part of my   1.00   .38

distress.

Q20_6 - 6. Others reflect on and make sense of my feelings of distress.   1.00   .64

Q20_8 - 8. Others are accepting, non-critical and non-judgemental of my   1.00   .62

feelings of distress.

Q21_1 - 1. Others are able to direct their attention to what is likely to be   1.00   .76

helpful to me.

Q21_2 - 2. Others are able to think about and come up with helpful ways   1.00   .75

for me to cope.

Q21_4 - 4. Others are able to take the actions and do the things that will   1.00   .74

be helpful...

Q21_5 - 5. Others are able to treat me with feelings of support,   1.00   .79

helpfulness and encouragement.

Note. Extraction Method: Principal Component Analysis

Therefore these two items were deleted from further analysis and are recommended

for deletion from the subscales. There were also two additional items identified as having

both low factor loadings and communality scores. These were items 14_5 – 5 "I tolerate the

various feelings that are part of my distress" and 17_5 – 5 "I tolerate the various feelings that

are part of other people's distress." Further consideration of the inclusion of these items in the

scale would be informed by the CFA and internal reliability assessment.

Confirmatory factor analysis.

The structure of the CEAS identified in the principal component analysis was

confirmed using confirmatory factor analysis (CFA). A confirmatory factor model was

specified and estimated using AMOS 21.0 version (IBM Corp.). A maximum likelihood

method was used to estimate the parameters. The scale items were specified to load on to

three latent variables, compassion towards others, self-compassion and receiving compassion

from others. The initial analyses revealed that four items (14_2-2, 14_4-4, 14_5-5 and 17_5-5) produced low estimates (< 0.6) on to the three latent variables. These were the same four items that were identified in the principal component analysis as having the lowest factor loadings and lowest communalities and therefore these items were removed from the CFA model. The CFA was re-specified and re-estimated without these items, as shown in Figure 3.
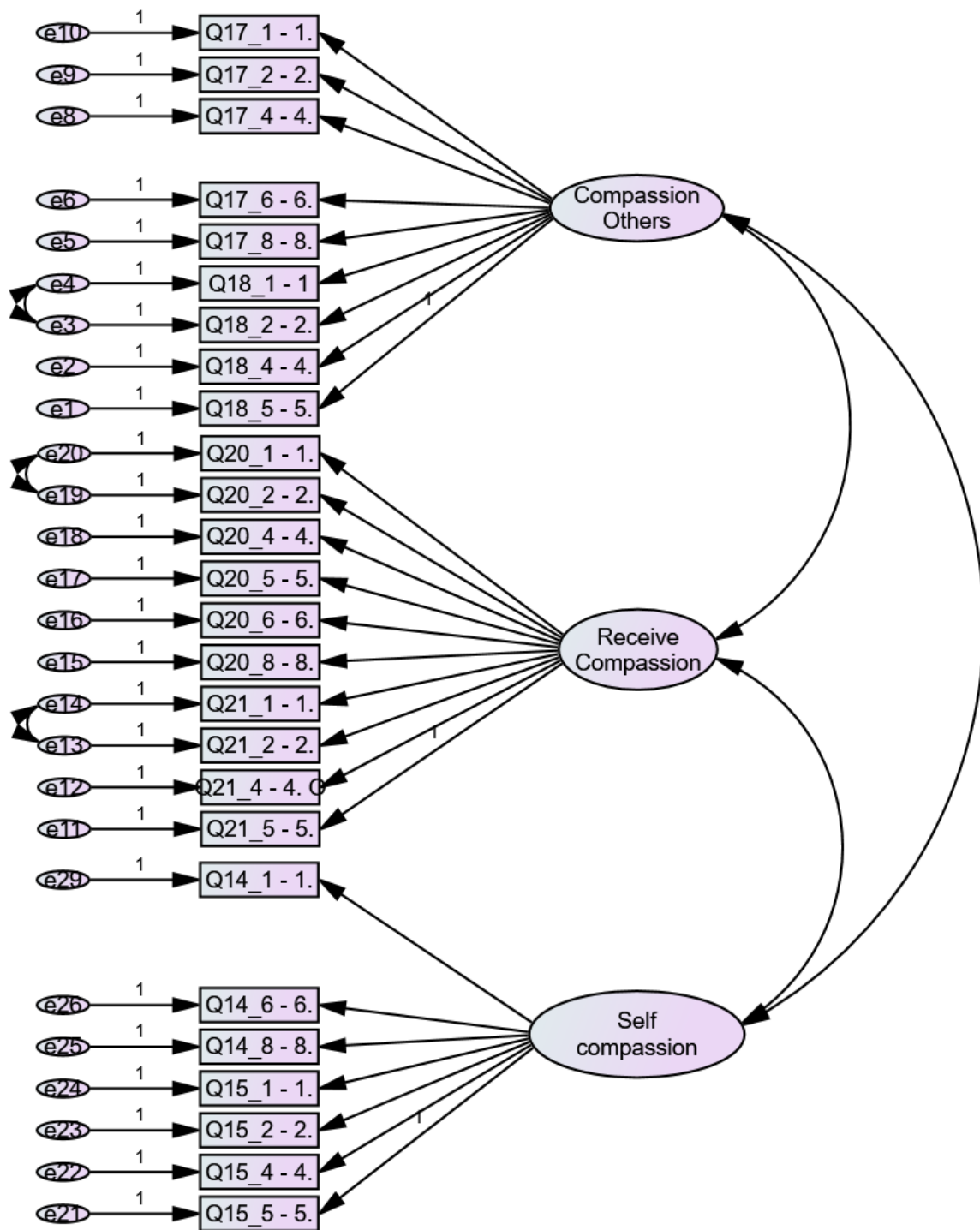
Figure 3. Path Diagram for CFA

The following indices were selected to assess goodness of fit based on guidelines of Byrne (2010) and Kline (2011). The normed Chi-Square (χ^2/df, Wheaton et al., 1977), with a value between 2 and 5 indicating good fit (Tabachnick & Fidell, 2007), was selected as opposed to the Chi-Square statistic, as the chi-square statistic has been commonly found to reject the model in larger sample sizes (Jöreskog & Sörbom, 1993).

The approximate fit indices examined were; the Goodness of Fit Index (GFI: Jöreskog & Sörbom, 1981), the Incremental Fit Index (IFI, Bollen, 1989), and the Comparative Fit Index (CFI, Bentler, 1990), with values greater than .90 considered to reflect acceptable model fit. In addition, the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) with 90% confidence intervals (90% CI) were reported. A value less than .06 is indicative of close fit (Hu & Bentler, 1999) and values up to .08 indicate reasonable errors of approximation in the population (MacCallum et al, 1996), although there is no definitive agreement on these values. For example, more recently Steiger (2007) has argued that a value closer to .07 should be considered the upper limit. The standardised root square mean residual (SRMR) was also selected. Values less than .05 indicate a well-fitting model (Diamantopoulos & Siguaw, 2000), however, values up to .08 are deemed acceptable (Hu & Bentler, 1999).

The CFA revealed a reasonable model fit. The normed chi square value was 2.9. The IFI and CFI both had values equal to .90 (IFI = .90, CFI = .90). The GFI was less than .90 (GFI= .81). The RMSEA was .08 (90% confidence interval = .070-.080) and the SRMR was .06, which falls within the reasonable range. Post hoc analyses revealed through examination of the modification indices and standardised residuals that a number of error terms could be co-varied to help improve the fit of the model. Therefore the model was re-specified and re-estimated with the additional six pairs of covaried error terms, which improved the model. The normed chi square value was 2.60. The IFI and CFI both had values above .90 (IFI = .92,

CFI = .92). The GFI was marginally under .90 (GFI= .84). The RMSEA was .07 (90%

confidence interval = .07 – .08), and the SRMR was .06, which falls within the reasonable

range.

The parameter estimates were reviewed and all estimates met the criteria for being

feasible (< 1.00), having appropriate standard errors and for having a critical ratio of more

than 1.96 (Byrne, 2010). In addition the normality of the data was reviewed and the data met

the criteria for univariate normality (no items were substantially kurtotic). However, the

index of multivariate kurtosis critical value was large, which suggests that the sample may be

non-normally distributed. The implications of this will be considered in the Discussion

chapter.

Additional factor models.

A further confirmatory factor analysis was conducted in which a higher order variable

of compassion was added to the model which revealed similar (IFI = .90, CFI = .90, GFI=

.82, RMSEA = .08, 90% confidence interval = .07 – .08), but not improved, results. This

suggests that an overall score of compassion, combining the three subscales, could be

computed if this was felt appropriate or useful within a specific research study.

Gilbert et al. (2017) also propose that in addition to the CEAS being used as three

single factor subscales, the CEAS can also be divided into six separate action and

engagement subscales (two subscales for each orientation). In order to assess this, three

separate factor analyses were conducted, one for each of the three orientations, with action

and engagement identified as two latent factors, which items were specified to load on to (see

Appendix R). All models were found to show good fit (see Appendix S) and therefore the use

of the action and engagement subscales is supported. However, for the purpose of this study

it was felt that the scales should primarily be reviewed within one model to support the differentiation of the three orientations.

Internal reliability

Reliability of each of the subscales was assessed using Cronbach's alpha. In the initial analysis, which included all items, all subscales had high Cronbach's alpha statistics ranging from .74 to .94, which indicated good reliability within acceptable criteria of >.70 and < .95 (Terwee et al., 2007).

This analysis indicated that there were two items which if deleted would increase the subscales' overall alpha score. For the self-compassion scale, the item 14-5-5 "I tolerate various feelings that are part of my distress" if deleted would increase the alpha from $\alpha = .74$ to $\alpha = .88$. For the compassion towards others subscale, the item Q17-5-5 "I tolerate various feelings that are part of other people's distress", if deleted would marginally increase the alpha from $\alpha =.86$ to $\alpha = .88$. These were two of the four items which had previously been identified in the PCA and CFA as items which had loaded very low on to the components after rotation, had the lowest communalities and lowest estimates. The findings from the internal reliability analyses provide further support that that these items could be excluded from the scales and any subsequent analysis. Thus, the reliability analysis was rerun with the items 14-5-5 and 17-5-5 (along with the two items, 14-2-2 & 14-4-4, recommended for deletion from the PCA & CFA) deleted and all subscales were found to have good internal reliability scores (see Table 15).

Table 15

Cronbach's Alpha Scores for the CEAS Subscales

	Self-Compassion Subscale	Compassion towards others Subscale	Receiving compassion subscale
α	.89	.90	.94

The deleted items were examined to see if there was an explanation as to why these items appeared to be reducing reliability and overall it was felt that wording of the items may have been ambiguous. This will be explored in more detail in the Discussion chapter. Thus based on the above, all four items that were identified in the PCA and CFA as having low loadings were removed from any further analysis. The CEAS self-compassion subscale was subsequently assessed as a seven item scale, the compassion for others subscale was reviewed as a nine item scale and the receiving compassion subscale remained as the original ten item scale.

In addition, the reliability of the scale if used as a single factor scale (i.e. total score of all three subscales) was assessed using Cronbach's alpha. The Cronbach's alpha for the overall scale was .91, which indicated good reliability within acceptable criteria of >.70 and < .95 (Terwee et al., 2007). There were no items which if deleted would improve the alpha score.

Test re-test reliability

A subgroup of participants (n= 42) completed the CEAS approximately three weeks after initial completion, in order to assess reliability. A Pearson's product-moment bivariate correlation was conducted using the data at time 1 and time 2 for each subscale. The statistics reported here are based on the revised subscales following the results of the factor analysis in

which four items were removed. All relationships between the first and second administration were found to be significant at p <.01. The correlation coefficients for the self-compassion subscale was r = .82, for the compassion towards others subscale it was r = .80 and for receiving compassion from others subscale it was r = .75. Reliability scores above .70 are considered acceptable (Barker et al., 2007). Based on these findings it was concluded that all three CEAS subscales were reliable measures of compassion.

In addition the test re-test reliability was assessed for the CEAS if used as single factor model (i.e. overall score of all three subscales). A Pearson's product-moment bivariate correlation was conducted using the data at time 1 and time 2 for the total scale score. The relationship was found to be significant at p < .001 and the correlation coefficient was r = .81. This further supports the use of the CEAS as a single factor model.

Floor/ceiling effects

The number of participants who achieved the highest and lowest possible scores was assessed for the three CEAS subscales. If present, floor/ceiling effects can impact on the validity and reliability of a scale, for example by indicating that extreme scores are missing in the upper and lower ends of the scale. Table 16 shows the number of participants who scored within the top or bottom 5% of scores.

Table 16

Floor/Ceiling Effects

CEAS subscale	Ceiling effects		Floor effects	
	N. scoring highest possible score	N. scoring in the top 5% of scores	N. scoring lowest possible score	N. scoring in the bottom 5% of scores

Self-compassion	1	1	0	1
Compassion towards others	0	0	0	8
Receive compassion	1	1	1	4

Table 16 shows that the highest number of participants scoring in the bottom 5% of scores was eight, which is approximately 2.5% of the sample. Terwee et al. (2007) state that floor/ceiling effects are present if more than 15% of the population achieve the lowest or highest scores. Thus ceiling or floor effects were not present in any of the scales.

Convergent validity

Correlations between subscales.

To explore how the three orientations of compassion (self, others and receive) were related to each other, a Pearson's product-moment correlation analysis was conducted on the three subscales (see Table 17).

Table 17

Inter-correlations between CEAS Subscales

	Self-compassion	Compassion to others	Receiving compassion
Self-compassion	1.00	–	–
Compassion to others	.43**	1.00	–
Receiving compassion	.32**	.28**	1.00

** Correlation is significant at the .01 level (2-tailed).

All correlations between the three CEAS subscales were significant and positive. The correlations between CEAS self-compassion and compassion to others had the largest effect size at .43. The correlations between CEAS self-compassion and receiving compassion was smaller at .32, as was the correlation between compassion to others and receiving compassion at .28. The results suggests that the three orientations of compassion are related, however the moderate to small correlations indicate differentiation, which supports the idea that one can be high in one orientation of compassion (e.g. for others) but low in another (e.g. from others) and vice-versa.

Indeed it is reasonable that the strongest correlation was found between the CEAS self-compassion and compassion for others subscales as both require the giving of compassion. Whereas the relationship between giving and receiving compassion may be very different. Thus, the correlations suggest that an individual could score highly on giving compassion to self and others whilst scoring low on receiving compassion.

In addition, a further analysis was conducted to assess the relationship between exposure to mindfulness and compassion practice and reported levels of compassion. Previous research indicates that training in mindfulness or compassion exercises can lead to increased compassion (Jazaieri et al., 2013). Therefore a correlation was conducted to explore the relationship between exposure to mindfulness or compassion practices and reported levels of compassion. A positive significant correlation was found between exposure to mindfulness and compassion practice and the CEAS self-compassion ($r = .22$, $p < .01$) and compassion for others ($r = .25$, $p < .01$) subscales. Receiving compassion from others was not associated with level of exposure to mindfulness and compassion practices.

Correlations with other compassion scales.

The purpose of this analysis was to assess the convergent validity of the new compassion subscales by comparing them with other validated measures of compassion. To investigate how the three subscales of the CEAS (self, others and receive) were related to other validated measures of compassion, a Pearson's product-moment correlation analysis was conducted. Table 18 shows the correlation coefficients.

Table 18

Correlations between the CEAS, the SCS and the SCBCS

	SCS	SCBCS
CEAS self-compassion	.53**	.13*
CEAS compassion to others	.12*	.55**
CEAS receiving compassion	.26**	.20**
SCS	1.00	< .01
SCBCS	< .01	1.00

Note: SCS = Self-compassion scale, SCBCS = Santa Clara Brief Compassion Scale.

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

As expected, the CEAS self-compassion subscale was significantly positively correlated with the SCS (r = .53, p <.01) and the SCBCS (r = .13, p <.05). The smaller effect size found between the CEAS self-compassion subscale and the SCBCS could be understood as the SCBCS measures compassion towards others, thus indicating differentiation of the orientations of compassion. There was no relationship found between the SCS and SCBCS.

The compassion towards others subscale was significantly positively correlated with the SCS (r = .12, p <.05). The effect size was small which indicates the differentiation between the two aspects of compassion. The compassion towards others subscale also had a significant positive correlation with the SCBCS (r = .55, p <.01). Arguably these scales are both measuring compassion towards others hence the moderate to large effect size.

The receiving compassion subscale was significantly positively correlated with the SCS (r = .26, p <.01). The receiving compassion subscale was also significantly positively correlated with the SCBCS (r = .20, p <.01). Again the small effect sizes indicate that these scales are capturing a different aspect of compassion. Overall, the data suggests that the new CEAS subscales have reasonable convergent validity.

The above results are based on the single factor SCS score, however due to a number of potential issues with the SCS total score, correlations were also conducted with the six SCS subscales. Correlations were conducted to assess the relationship between the three CEAS subscales and the six SCS subscales; mindfulness, self-kindness, common humanity, self-judgement, isolation and over-identification (see Table 19).

Table 19

Correlations between SCS subscales and the CEAS subscales

SCS Subscale	CEAS Self-compassion	CEAS Compassion Others	CEAS Compassion Receive
Self-Kindness	.51**	.21**	.21**
Self-judge	.39**	-.02	.23**
Common Humanity	.41**	.19**	.20**
Isolation	.31**	.03	.27**

Mindfulness	.55**	.25**	.18**
Over-Identify	.28**	-.06	.11*

Note: **. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Overall it was found that the CEAS self-compassion subscale was significantly positively correlated with all of the six SCS subscales. The positive correlations with the negative SCS subscales is a result of the items for these subscales being re-coded (reverse scored) prior to analysis, as stipulated by the author. This means that higher scores on the negative SCS subscales denotes an absence of isolation, rumination and self-criticism. Therefore, the positive relationship found between the CEAS self-compassion scale and the three negative SCS subscales indicates that higher levels of self-compassion are associated with lower levels of isolation, ruination and self-criticism. The CEAS self-compassion scale had the strongest relationship with the three positive SCS subscales (mindfulness, self-kindness, common humanity) and the weakest relationship with the three negative subscales (self-judgement, isolation and over-identification).

Compassion towards others was significantly positively correlated with mindfulness, common humanity and self-kindness but not with the three negative SCS subscales. This could indicate that the more mindful and self-kind a person is, the more able they are to feel compassion towards others or vice versa, that feeling compassion for others may lead to greater self-kindness and mindfulness. Likewise an increased sense of common humanity may lead to increased levels of compassion towards others and vice versa. Whereas self-judgement, isolation and over-identification are not related to someone's ability to show compassion towards others.

Finally, receiving compassion from others also significantly positively correlated with all of the SCS subscales. Receiving compassion was most strongly associated with self-isolation and self-judgement. This could be interpreted to mean that isolation, self-judgement (self-criticism) and over-identification (rumination) are barriers to receiving compassion from others. In contrast, a greater sense of shared common humanity, self-kindness and mindfulness might facilitate a greater openness to receiving compassion.

Summary of the psychometric properties of the CEAS

In summary, the CEAS was found to have good psychometric properties as assessed by a number of statistical analyses of validity and reliability. On reviewing the CFA fit indices and the parameter estimates together, it can be concluded that the factor structure of the CEAS may be interpreted as an overall single factor model of compassion or as a three factor model, reflecting the three subscales. In addition, each subscale can be divided into two further factors representing the action and engagement subscales. On the whole, all three CEAS subscales were found to have good internal consistency and test-re test reliability. Moderate positive correlations between each subscale confirmed convergent validity. Furthermore, correlations between the CEAS subscales and existing measures of compassion provided further supporting evidence for convergent validity.

Study aim 2: To explore the levels of the three orientations of compassion as measured by the CEAS in an adult community sample.

The second aim of the study was to investigate the level of compassion, as measured by the CEAS, in the general population. This was assessed using data from the time 1 sample. For comparison purposes, descriptive data for all of the variables (DASS-21, SCS, SCBCS & PAS) are also reviewed. All scores for each variable were calculated as stipulated by the

authors. All measure total scores were calculated by summing the score of each item, except

for the SCS. Neff (2016) stipulates that a grand mean score should be calculated (sum of all

items divided by the number of items) and not a summed total score. Neff (2016) argues that

this enables direct comparison of scores between subscales that have a different number of

items, which otherwise would skew the mean scores (i.e. subscales with more items would

receive higher scores). To enable comparison of subscale scores for the PAS and CEAS

(whereby the number of items which make up each subscale differs), the grand mean scores

were also calculated. Table 20 shows the means (for the summed total score and the grand

mean score) and standard deviations (SD) for all variables.

Table 20

Means and Standard Deviations (SD) of Variables

Scale	Number of items	Score Range	Mean (grand mean)	SD
CEAS self-compassion	7	7-70	63.82 (6.31)	14.74 (1.67)
CEAS compassion towards others	9	9-90	77.27 (7.81)	12.79 (1.33)
CEAS receive compassion	10	10 - 100	58.81 (5.88)	17.29 (1.72)
DASS-21 total	21	0-63	24.17	22.04
Anxiety	7	0-21	5.32	7.06
Depression	7	0-21	7.26	8.60
Stress	7	0-21	11.62	9.18

SCS total	26	1-5	(3.11)	0.69
SCS Self-kindness	5	1-5	(2.90)	0.87
SCS Self-judgement	5	1-5	(2.94)	0.94
SCS Common Humanity	4	1-5	(3.28)	0.88
SCS Isolation	4	1-5	(3.21)	0.96
SCS Mindfulness	4	1-5	(3.31)	0.81
SCS Over-identification	4	1-5	(3.02)	0.92
SCBCS	5	5-35	24.94	6.50
Active PA	8	0-32	27.04 (3.38)	6.47
Relaxed PA	6	0-24	18.71 (3.11)	5.51
Safe PA	4	0-16	15.03 (3.75)	3.14

Note. CEAS = Compassionate Engagement and Action Scales; DASS-21=Depression, Anxiety and Stress Scale; SCS = Self-compassion Scale; SCBCS = Santa Clara Brief Compassion Scale; PA = positive affect.

From the descriptive statistics it can be seen that on average, participants scored highest on the CEAS giving compassion towards others subscale and lowest on the CEAS receiving compassion from others subscale. A paired-samples t-test was conducted in order to assess if the difference between participants' scores on giving and receiving compassion was statistically significant. The difference was found to be significant, $t(314) = 18.66$, $p = <$ .001, and represented a large effect size, $r = .73$. Thus according to the findings, it can be surmised that the UK population perhaps find it easier to give compassion towards the self and others but find it hardest to receive compassion from others.

On average, the sample were within the normal range (see 'method chapter', p. 65) for anxiety, stress and depression.

Participant's mean score on the SCS was 3.1, which indicates that the population have a moderate level of self-compassion. This is, however, difficult to quantify since the SCS, like many self-report measures, does not provide guidelines on the interpretation of scores other than the higher the score the more compassionate someone is likely to be. When looking at the subscales for the SCS, participants scored highest on the mindfulness subscale and lowest on the self-kindness subscale.

On average participants scored 25 on the SCBCS, with the highest possible score being 35, which can be interpreted as participants having a moderate to high level of compassion towards others.

Finally, positive affect was measured in the population. The findings suggest that on average, participants scored highest on emotions that indicate safety and warmth, such as feeling content and secure. Participants also reported experiencing moderate levels of active emotions such as energetic, lively, adventurous, enthusiastic, excited, etc. The lowest average score, although still within moderate range, was for emotions, such as peaceful and calm, which indicate a relaxed positive affect.

Engagement and action

Since each of the CEAS subscales can be divided into action and engagement subscales, the descriptive statistics for these scales were also explored (see Table 21)

Table 21

Descriptive Data for the Action and Engagement Subscales

CEAS Subscale	Mean	Std. Deviation
Receive Compassion Engagement	5.71	1.72
Receive Compassion Action	6.14	1.93
Self-compassion Engagement	6.38	1.53
Self-compassion Action	6.41	1.79
Compassion Others Engagement	7.63	1.36
Compassion Others Action	7.89	1.45

The mean scores on the action and engagement scales indicate that across all three orientations, participants scored on average higher across the action subscales then the engagement subscales. Thus indicating that in general people may feel more able to take action to help alleviate distress but are less able to engage with and tolerate distress. Overall, both the engagement and action scores were highest for the compassion towards others subscale.

Study aim 3: To investigate the relationship between non-clinical depression, anxiety, stress, positive affect and the three orientations of compassion.

The final aim of the current study was to explore the relationship between non-clinical depression, anxiety, stress, positive affect and the three orientations of compassion, and to test the hypotheses set out in relation to this aim. Firstly, it was hypothesised that the three CEAS subscales would be negatively correlated with depression, anxiety and stress and positively related to positive affect. Secondly, it was also hypothesised that the CEAS would

explain additional unique variance in the relationships between compassion, depression, anxiety, stress and positive affect over and above the SCS.

Testing of hypothesis 1: The three Compassionate Engagement and Action subscales will be positively related to positive affect and negatively related to depression, anxiety and stress.

To explore how the three subscales of the CEAS (self, others and receive) were related to positive affect (as measured by the PAS), depression, anxiety and stress (as measured by the DASS-21), a Pearson's product-moment correlation analysis was conducted. Table 22 shows the correlation coefficients for the CEAS, the DASS-21 and the PAS (for correlations between all variables see Appendix T).

Table 22

Correlations between the CEAS subscales, DASS-21 and PAS

CEAS subscale	DASS-21 total score	Anxiety	Depression	Stress	PA Active	PA Relaxed	PA Safe
Self-compassion	-.35**	-.32**	-.38**	-.26**	.37**	.27**	.46**
Compassion to others	-.02	-.05	< .01	<.01	.23**	.04	.25**
Receiving compassion	-.24**	-.15**	-.28**	-.20**	.27**	.15**	.32**

Note. CEAS = Compassion Engagement and Action Scales; DASS-21 = Depression, Anxiety and Stress Scale; PA = Positive Affect.

*. Correlation is significant at the .05 level (2-tailed)

**. Correlation is significant at the .01 level (2-tailed)

Positive affect.

The CEAS self-compassion subscale was found to be positively significantly related to active positive affect (r = .37, p< .01), relaxed positive affect (r = .27, p< .01) and safe positive affect (r = .46, p< .01). This perhaps suggests that the more self-compassionate a person is, the more positive affect they feel, or that the more positive affect a person feels, the more they are able to be compassionate towards themselves.

Compassion towards others was positively significantly related to active positive affect (r = .23, p< .01) and safe positive affect (r = .25, p< .01). There was no relationship between relaxed positive affect and compassion towards others. This may suggest that feeling safe and active is needed in order to provide compassion towards others, or that giving compassion towards others increases feelings of safety and activation.

Receiving compassion was found to be positively significantly related to active positive affect (r = .27, p< .01), relaxed positive affect (r = .15, p< .01) and safe positive affect (r = .32, p< .01). This perhaps suggest that the more one experiences positive emotions the better able one is to receive compassion from others, or vice-versa.

Depression, anxiety and stress.

As shown in Table 22, the CEAS self-compassion subscale was found to be negatively significantly correlated with anxiety (r = -.32, p< .01), depression, (r = -.38, p< .01), stress (r = -.26, p< .01) and the total DASS-21 score (r = -.35, p< .01). This suggests that the more self-compassionate a person is, the less anxiety, depression and stress they experience, which is line with previous research findings (Neff & Pommier, 2013).

Compassion toward others was also found to have negative correlations with stress, anxiety, depression and overall DASS-21 score, however none of these correlations were

significant. This indicates that levels of compassion towards others does not appear to be statistically related to levels of stress, anxiety and depression.

Receiving compassion was negatively significantly correlated with anxiety ($r = -.15$, $p < .01$), depression, ($r = -.28$, $p < .01$), stress ($r = -.20$, $p < .01$) and the overall DASS-21 score ($r = -.24$, $p < .01$). This suggests that people who report to receive compassion from others may experience less anxiety, depression and stress or vice versa, that people who struggle to receive compassion from others tend to report higher levels of anxiety, depression and stress.

Testing of hypothesis 2: The three Compassionate Engagement and Action subscales will explain additional unique variance in the relationships between compassion, positive affect, anxiety, depression and stress over and above the SCS.

A multiple regression analysis was conducted to determine the degree to which the CEAS subscales (self-compassion, compassion towards others and receiving compassion from others) and the SCS predicted depression, anxiety and stress (as measured by the DASS-21 scores) and positive affect (as measured by the PAS scores). The SCS was selected for this analysis as it was identified as having the highest quality rating in the systematic literature review and is currently the most widely used measure of compassion. A multiple regression is a way of predicting the outcome variable scores (DASS-21 and PAS) from the predictor variables (CEAS subscales and the SCS).

A hierarchical regression analysis was carried out using SPSS as this enables predictors to be entered into the model in a particular order as chosen by the researcher, based on previous research (Tabachnick & Fidell, 2007). As outlined in the Introduction chapter, current research suggests that increased self-compassion leads to decreased psychopathology and increased positive affect (MacBeth & Gumley, 2012) and the SCS has been used widely to assess this relationship. A general rule in multiple regression is to enter the known

predictors into the model first (Field, 2009), therefore the six SCS subscales were entered (forced entry method) into the first step of the model. The CEAS subscales were entered (forced entry method) into the second step of the model. Given that the CEAS subscales measure three different aspects of compassion it was hypothesised that, when controlling for the SCS subscales, the three CEAS subscales would explain additional unique variance in the relationships between compassion, depression, anxiety, stress and positive affect.

Assumptions of multiple regression.

To generalise conclusions to a population based on a multiple regression conducted on a sample, a number of assumptions must be met (Berry, 1993). Firstly, there should be no multicollinearity (strong correlations $r = .7$ or above, Pallant, 2016) between predictor variables. All correlations met this criteria but to further determine multicollinearity, the variation inflation factor (VIF) and tolerance statistic were examined. The VIF indicates whether or not a predicator has a strong linear relationship with other predicator variables (Field, 2009). Related to the VIF is the tolerance statistic which is its reciprocal (1/VIF). It is assumed that the data has not violated the multicollinearity assumption if VIF figures do not exceed 10 (Myers, 1990) and tolerance levels are not less than .10 (Pallant, 2016). None of the regressions were found to violate the assumptions regarding multicollinearity.

Multiple regression also assumes that there will be homoscedasticity, normally distributed errors and linearity. These can be verified by examining the scatterplots and P-P plots of the residuals (see Appendix U). The graphs for the multiple regression in which the PAS was the identified dependent variable appeared to indicate normal distribution. However, the graphs for the multiple regression in which the DASS-21 was the dependent variable suggested that the data may not be normally distributed, thus further exploration of the data was necessary.

Cases which have a standardised residual less than -3.3 or greater than 3.3 (Tabachnick & Fidell, 2007) are defined as outliers. It is not uncommon to find a number of outliers in large data sets (Pallant, 2016). On examination of the case wise diagnostics, two cases were identified which met this criteria, which is within 1% of the sample of cases and therefore, the sample was deemed to conform to an acceptable model (Field, 2009). The two cases with residuals greater than 3.3 were examined further. Neither of these cases had a Cook's distance greater than 1 and all cases were within the average leverage boundary (defined as .015).

Another way of assessing outliers is by investigating the mahalonobis distances, which measures the distance of cases from the means of the predictor variables. Barnett and Lewis (1978) provide a table of guidelines on the critical value of the Mahalanobis distances, based on sample size. They suggest that for a sample of 200 and 4 predictor variables, any value above 20.59 should be a cause for concern. Neither of the identified two cases came close to the 20.59 value and therefore, these two cases were retained in the analysis.

On examining the mahalonobis distances for the whole data set, there were two further cases identified which exceeded the critical value of 20.59. However, their Cook's value did not exceed 1 and there was no reason to believe that these cases were not from the target population, therefore these cases were retained. Overall, the above tests suggest that there were no influential cases in the data set.

Independent errors is another assumption which must be met in a multiple regression. This means that for any two observations the residual terms should be uncorrelated (Field, 2009). This assumption can be tested with the Durbin-Watson test. Durbin and Watson (1951) set out guidelines for critical values of the test, however, they do not exceed samples of 200. Therefore a conservative rule of thumb is that values closest to 2 indicates that the

residuals are uncorrelated (Field, 2009). The Dubin-Watson test statistic for each regression ranged from 1.91 - 2.10. In addition, there were no standardised DF beta values above 1.

In conclusion, the data met all of the assumptions of normality, linearity and homoscedasticity required for multiple regression. Therefore it was deemed appropriate for a multiple regression analysis to be carried out on the data set.

Multiple regression with the CEAS and SCS subscales predicting depression, anxiety and stress.

Hierarchical multiple regression was used to assess the predictive value of compassion on depression, anxiety and stress. The six SCS subscales were entered in the first step of the model and the three CEAS subscales were entered into the second step. The final model is shown in Table 23.

Table 23

Multiple Regression Coefficients for the Six SCS Subscales and the CEAS for Predicting the DASS -21

	B	SE B	β
Step 1			
SCS Self-kindness	1.66	1.88	.07
SCS Self-judgement	-6.91	1.91	-.29***
SCS Common humanity	-0.07	1.62	-.00
SCS Isolation	-4.77	1.61	-.21**
SCS Mindfulness	-2.81	2.07	-.10
SCS Over-identification	-3.19	1.67	-.13

Step 2			
SCS Self-kindness	2.12	1.87	.08
SCS Self-judgement	-6.16	1.92	-.26**
SCS Common humanity	0.16	1.61	.01
SCS Isolation	-4.04	1.63	-.18*
SCS Mindfulness	-1.46	2.17	-.05
SCS Over-identification	-3.50	1.68	-.15*
CEAS Self-compassion	-1.84	0.81	-.14*
CEAS Compassion towards others	0.85	0.87	.05
CEAS Receiving compassion	-1.22	0.65	-.01

Note. B = beta; SE B = standard error; β = standardised beta. R^2 = .33 for step 1, ΔR^2 = .02 for step 2 (p< .05).

*p< .05, **p< .01, ***p< .001

Model 1 (step 1) explained 33% of the variance and was significantly better at predicting the DASS-21 than the mean, $F_{(6,308)}$ = 27.30, p< .001. Model 2 (step 2) explained an additional 2% of the variance (total 35% of the variance), and this represented a significant change (r square change = .02, F change $_{(3,305)}$ = 3.28, p<.05). This suggests that the model is a significant fit of the data overall. In the final model, SCS self-judgement (β = -.26, p< .01), SCS isolation (β = -.18, p< .05), SCS over-identification (β = -.15, p< .05) and the CEAS self-compassion subscale (β = -.14, p< .05) were statistically significant, with self-judgement as the strongest predictor. The CEAS compassion towards others, CEAS receiving compassion, SCS mindfulness, SCS self-kindness and SCS common humanity subscales did not reach significance. Overall the model supports the earlier findings that higher levels of

self-compassion, as measured by the CEAS, predict lower levels of depression, anxiety and stress.

The findings also support earlier claims that there are difficulties when using the SCS as a measure of self-compassion. Previous research suggests that self-criticism, rumination and isolation (loneliness) are highly associated with mental distress (Bluth & Blanton, 2015), which is supported by the above findings that the three negative SCS subscales were the strongest predictors of the DASS-21. Therefore, the association between the SCS and the DASS-21 is likely to be demonstrating the powerful relationship between psychopathology, self-criticism, rumination and isolation rather than self-compassion. Despite the strong effect of the three negative SCS subscales, the new CEAS self-compassion subscale was still found to make a significant contribution to the model, whereas the three positive SCS subscales did not reach significance.

Thus, due to the potential bias in the model towards the negative SCS subscales it was decided that a further regression would be conducted with the removal of the three SCS negative subscales. This enabled an investigation as to how the CEAS and SCS positive subscales, which more closely represent self-compassion attributes, performed in the absence of the negative subscales, which arguably skew the model as they do not assess the protective function of compassion against psychopathology (Muris & Petrocchi, 2016). Using just the three positive SCS subscales thus provided a more direct comparison of the CEAS and SCS as measures of compassion and their relative contributions to stress, anxiety and depression. The model is shown in Table 24.

Table 24

Multiple Regression Coefficients for the Three Positive SCS Subscales and the CEAS for

Predicting the DASS -21

	B	SE B	β
Step 1			
SCS Self-kindness	-3.64	1.90	-.14
SCS Common humanity	-0.00	1.87	.00
SCS Mindfulness	-6.36	2.24	-.23**
Step 2			
SCS Self-kindness	-1.89	1.86	-.07
SCS Common humanity	0.32	1.80	.01
SCS Mindfulness	-4.24	2.30	-.16
CEAS Self-compassion	-3.21	0.90	-.24***
CEAS Compassion towards others	3.02	0.94	.18**
CEAS Receiving compassion	-2.27	0.70	-.18**

Note. B = beta; SE B = standard error; β = standardised beta. R^2 = .12 for step 1, ΔR^2 = .08 for step 2 (p< .001).

*p< .05, **p< .01, ***p< .001

Model 1 (step 1) explained 12% of the variance and was significantly better at predicting the DASS-21 than the mean, $F_{(3,311)}$ = 14.20, p< .001. Model 2 (step 2) explained an additional 8% of the variance (total 20% variance), and this represented a significant change (r square change = .08, F change $_{(3,308)}$ = 9.88, p<.001). This suggests that the model is a significant fit of the data overall. In the final model, the CEAS self-

compassion subscale (β = -.24, p< .001), compassion towards others subscale (β = .18, p< .01) and receiving compassion from others subscale (β = -.18, p< .01) were statistically significant, with the CEAS self-compassion subscale as the strongest predictor. The SCS mindfulness, self-kindness and common humanity subscales did not reach significance. Thus overall the model suggests that the CEAS is a better predictor of the DASS-21 than the positive subscales of the SCS.

Multiple regression with the CEAS and SCS subscales predicting positive affect.

Hierarchical multiple regression was used to assess the predictive value of compassion on positive affect. The six SCS subscales were included in the first step of the model and the three CEAS subscales were entered into the second step. The final model is shown in Table 25.

Table 25

Multiple Regression Coefficients for the Six SCS Subscales and the CEAS for Predicting the PAS

	B	SE B	β
Step 1			
SCS Self-kindness	0.28	1.10	.02
SCS Common humanity	2.48	0.95	.18**
SCS Mindfulness	3.58	1.21	.24**
SCS Self-judgement	0.61	1.12	.05
SCS Isolation	2.26	0.95	.18*
SCS Over-identification	0.39	0.98	.03

Step 2			
SCS Self-kindness	-0.30	1.07	-.02
SCS Common humanity	2.26	0.92	.16*
SCS Mindfulness	1.86	1.24	.12
SCS Self-judgement	0.19	1.09	.01
SCS Isolation	1.53	0.93	.12
SCS Over-identification	0.92	0.96	.07
CEAS Self-compassion	1.74	0.47	.24***
CEAS Compassion towards others	0.24	0.50	.03
CEAS Receiving compassion	0.86	0.37	.12*

Note. B = beta; SE B = standard error; β = standardised beta. R^2 = .29 for step 1, ΔR^2 = .06 for step 2 (p< .001).

*p< .05, **p< .01, ***p< .001

Model 1 (step 1) explained 29% of the variance and was significantly better at predicting the PAS than the mean, $F_{(6,308)}$ = 20.51, p< .001. Model 2 (step 2) explained an additional 6% of the variance (total 35% of the variance), and this represented a significant change, r square change = .06, F change $_{(3, 305)}$ = 9.30, p<.001. This suggests that the model is a significant fit of the data overall. In the final model, SCS common humanity (β = .16, p< .05), CEAS self-compassion (β = .24, p< .001) and receiving compassion from others (β = .12, p< .05) subscales were statistically significant, and the CEAS self-compassion subscale was the strongest predictor. The CEAS compassion towards others subscale and remaining SCS subscales did not reach significance. Thus, the model supports the earlier findings that

higher levels of self-compassion predict higher levels of positive affect and that overall the CEAS is a better predictor of the PAS then the SCS.

However, due to the issues previously outlined with the three negative subscales of the SCS, a further regression was conducted with the CEAS and the three positive subscales of the SCS as predictors of the PAS. The final model is shown in Table 26.

Table 26

Multiple Regression Coefficients for the Three Positive SCS Subscales and the CEAS for Predicting the PAS

	B	SE B	β
Step 1			
SCS Self-kindness	1.23	0.99	.09
SCS Common humanity	2.39	0.97	.17*
SCS Mindfulness	4.49	1.17	.29***
Step 2			
SCS Self-kindness	0.12	0.96	.01
SCS Common humanity	2.17	0.93	.16*
SCS Mindfulness	2.66	1.18	.17*
CEAS Self-compassion	1.99	0.46	.27***
CEAS Compassion towards others	-0.15	0.48	-.02
CEAS Receiving compassion	1.08	0.36	.15**

Note. B = beta; SE B = standard error; β = standardised beta. R^2 = .24 for step 1, ΔR^2 = .08 for step 2 (p< .001).

*p< .05, **p< .01, ***p< .001

Model 1 (step 1) explained 24% of the variance and was significantly better at predicting positive affect than the mean, $F (3,311) = 33.43$, p< .001. Model 2 (step 2) explained an additional 8% of the variance (total 33% of the variance), and this represented a significant change, r square change = .08, F change $(3, 308) = 11.83$, p<.001. This suggests that the model is a significant fit of the data overall. In the final model, the SCS common humanity ($\beta = .16$, p< .05), SCS mindfulness ($\beta = .17$, p< .05), CEAS self-compassion ($\beta = .27$, p< .001) and receiving compassion from others ($\beta = .15$, p< .05) subscales were statistically significant, and the CEAS self-compassion subscale was the strongest predictor. The CEAS compassion towards others subscale and the SCS self-kindness subscale did not reach significance. The results from this regression analysis show that when the SCS negative subscales are removed, mindfulness and common humanity are important factors in predicting positive affect. The CEAS self-compassion subscale remains the strongest predictor of positive affect.

Summary of results

The main aim of the present study was to assess the psychometric properties of the CEAS. The findings from the factor analysis support the use of the CEAS as three valid subscales of compassion. All three CEAS subscales were found to have good internal reliability and test re-test reliability. Following these analyses it was recommended that four items should be deleted from the CEAS to help improve validity and reliability.

The three CEAS subscales showed significant positive correlations with each other, with small to moderate effect sizes indicating convergent validity. Convergent validity of the CEAS was also confirmed through positive significant correlations with existing measures of compassion.

The descriptive results suggest that the general population reported moderate levels of compassion. On average, the population scored highest on giving compassion towards others, followed by self-compassion and lowest on receiving compassion from others. This suggests that giving compassion towards others and the self may be easier than receiving compassion from others.

The results from the bivariate correlations indicated that all three orientations of compassion were significantly related to positive affect, which may suggest that the more positive affect a person feels, the more able they are to be compassionate or perhaps the more compassionate a person feels the more positive affect they experience. Although it is worth noting that the compassion towards others subscale had the smallest association with positive affect and was not found to be related to relaxed positive affect at all. The results from the bivariate correlations also suggest that the CEAS self-compassion and receiving compassion from others subscales were significantly related to depression, anxiety and stress. Giving compassion towards others was not found to be related to stress, anxiety and depression.

Multiple regression analyses indicated that the CEAS subscales explained additional unique variance in the relationship between compassion, depression, anxiety, stress and positive affect over and above the variance explained by the SCS. The CEAS self-compassion subscale was the strongest predictor of the DASS-21. The SCS common humanity, mindfulness, CEAS self-compassion and CEAS receiving compassion subscales were also found to predict the PAS. The results from the multiple regression indicated that when other variables were controlled for, compassion towards others did not significantly predict positive affect.

Discussion

Chapter Overview

The current research is a quantitative study which aimed to investigate the psychometric properties of the Compassionate Engagement and Action Scales (CEAS, Gilbert et al., 2017). The study also sought to explore the current status of the three orientations of compassion in the general population and to investigate its relationship to positive affect and non-clinical depression, anxiety and stress. This chapter will begin by providing a summary of the results in relation to the study aims and hypotheses. All of the study aims were met and the findings will be considered in light of existing research. The chapter will then proceed to discuss the strengths and limitations of the current study within a critical review. Finally, the clinical implications of the study will be described and recommendations for future research put forward.

Summary of Main Findings

Summary of findings related to aim 1: Assessing the psychometric properties of the CEAS

Construct validity

Principal component analysis.

A number of statistical analyses were conducted in order to assess the psychometric properties of the CEAS. Firstly a principle component analysis (PCA) was conducted to explore the factor structure of the CEAS and to review construct validity. Initially a five and a three component model were revealed for the 30 item data set, based on the Kaiser-Guttman criterion of retaining factors with eigenvalues greater than one (Guttman, 1955). However, on closer inspection of the items it was felt that the five component model could not

theoretically be justified. This was because the first three components were reflective of the three orientations of compassion (as in the three component model) but the last two components were unidentifiable in terms of themes, content or theoretical understanding. Rather it appeared that these components were clustered around the word 'distress', as this was included in each of the items that made up these components. Thus it was decided that these components may have reflected a similar wording of items rather than the identification of a meaningful component.

Furthermore, the Kaiser-Guttman criterion for factor retention has been criticised for overestimating the number of factors (Velicer, Eaton & Fava, 2000). This can lead to the retention of too many factors (Costello & Osborne, 2005) and less parsimonious theories. There are other methods which can aid the decision making process around factor retention, such as parallel analysis (Patil, Singh, Mishra & Donavan, 2008), but these types of analysis are not available on most software packages and must be calculated by hand. Therefore, a more efficient way to help decide the number of factors to retain is through the examination of the scree plot (Cattell, 1966).

The scree plot revealed three data points above the point of inflexion, which is a good indication for a three factor model (Costello & Osbourne, 2005). Furthermore a comparison of the component loading tables between the three and five factor models revealed that the three factor model had fewer loadings below .30 and fewer cross loadings then the five factor model. Thus indicating that the three factor model was a better fit. Moreover it is generally accepted that the model with the least number of factors which explains the most amount of variance should be retained (Henson & Roberts, 2006).

As a result, the analysis was rerun with a forced three factor model which converged and explained 56.3% of the variance. This is slightly higher than the average amount of variance reported in factor analyses for applied psychological research, which is suggested to

be around 52% (Henson & Roberts, 2006). The components that were revealed represented each of the three subscales, compassion towards self, others and receiving compassion from others. This would suggest that the current items which make up the CEAS do assess a particular orientation of compassion and furthermore that these three aspects of compassion can be differentiated.

Although commonly used in questionnaire development research (Schmitt, 2011), PCA has been criticised for producing inflated values of variance, which can be accounted for by the components (McArdle, 1990; Widaman, 2007). However, compared with exploratory factor analysis, PCA does not claim to discover underlying factors, rather it reduces a large number of variables down to a smaller number of components. This is congruent with the critical realist epistemological position of this study which maintains that some causal explanations can be derived from data, but which are limited by their underlying mechanisms and contexts (Bergin, Wells & Owen, 2008). PCA is consistent with this position as it does not claim to uncover variables which can be unequivocally generalised but rather meaning can be derived from the data based on the theoretical context available (Olsen & Morgan, 2005).

Confirmatory Factor Analysis.

In order to confirm the factor structure of the CEAS following the PCA, a confirmatory factor analysis (CFA) was conducted. PCA is a useful initial step to CFA as it provides a lot of data that can help to inform the factor model in the CFA (Tabachnick & Fidell, 2001). Furthermore it is important to ensure that a model has been correctly specified through a PCA rather than run a CFA on an already misspecified model (Patil, Singh, Mishra & Donavan, 2008). The three factor model extrapolated from the PCA was tested and the CFA revealed a reasonable model fit, which would support the CEAS as a psychometrically

robust measure of the three orientations of compassion. Further CFA analyses also supported the breakdown of each subscale into action and engagement components as well as a model with a higher order factor of compassion.

The data was examined for meeting assumptions of normality and was found to be multivariate non-normally distributed. Assessment of normality assumptions is often not reported in CFA studies. In a review of CFA studies in psychology research, Jackson, Gillaspy and Purc-Stephenson (2009) found that only 13% (of 194 articles) reported to have examined multivariate normality. Some studies have found that non-normality can lead to inflated model test statistics and underestimation of standard errors of parameter estimates (Bandalos, 2002; Nevitt & Hancock, 2001). However, there is no consensus on recommended solutions for non-normality in CFA. Asymptotically distribution-free (ADF, Browne, 1984) estimator procedures are recommended as a solution for analysing non-normally distributed data in CFA, however the number of participants needed for this is advised to be a minimum of 1000 (West et al., 1995).

Conversely, some researchers argue that when univariate normality assumptions are met, as was the case in this study, there is limited attenuation to the results (Muthen & Kaplan, 1985). In addition, Hau and Marsh (2004) found that maximum likelihood solutions can be robust to violations of multivariate normality with minimal impact on parameter estimates, which is consistent with earlier research (Chou, Bentler & Satorra, 1991). Therefore it was decided that the CFA would be reported in this study but some caution should be issued when drawing inferences from the results.

Internal reliability

All three subscales of the CEAS had high Cronbach's alpha statistics ranging from .89 to .94, which indicates good reliability (Terwee et al., 2007). The receiving compassion

subscale obtained the highest Cronbach's alpha ($\alpha = .94$), however, alpha coefficients above .90 could be indicative of unnecessary duplication of content across items. This suggests that some items may be redundant (Streiner, 2003) or that there is a narrowness of content (McCrae, Kurtz, Yamagata & Terracciano, 2011). On further investigation of the receiving compassion subscale, it appeared that two items correlated highly with each other (>0.8). These were "others are able to direct their attention to what is likely to be helpful to me" and "others are able to treat me with feelings of support, helpfulness and encouragement." Therefore consideration may need to be given as to their inclusion in the scale or for re-wording the items.

Item deletion.

By reviewing the PCA factor loading, communalities, CFA estimates and Cronbach's alpha 'improved by item deletion' tables, it was established that four items could be deleted from the CEAS to help improve validity and reliability. Subsequently for further statistical analysis, the items "I tolerate the various feelings that are part of my distress", "I notice, and am sensitive to my distressed feelings when they arise in me" and "I am emotionally moved by my distressed feelings or situation" were removed from the CEAS self-compassion subscale. These items were found to load low on to the factors, have low communality scores, low estimates and would increase the scale's alpha score if deleted. The item "I tolerate the various feelings that are part of other people's distress" was also removed from the compassion from others subscale for the same reasons.

On examination it appeared that one possible explanation for the low loading of these items was because participants may have found the wording of the items difficult to understand. For example, being "sensitive" or "emotionally moved" to distressed feelings are arguably not common terms used in everyday language and therefore the meaning of each

item is subject to interpretation. Indeed, two of the deleted items ("I tolerate various feelings that are part of my distress" and "I tolerate various feelings that are part of other people's distress") are from the same set of questions asked across each subscale and are therefore similarly worded. Thus it may be that the wording of these items was difficult for participants to understand. Similarly, when you compare the item 'I am emotionally moved by my distressed feelings or situations' (also deleted) to the corresponding questions in the other subscales, the wording is slightly different and perhaps easier to understand in the other two subscales. Therefore, again it may be that participants did not understand the wording of this question item.

The data scores for the four deleted items were reviewed and on average participants scored a seven or eight, which could indicate that if participants were unsure of the meaning of the question then they may have opted to answer in a positive way, as a form of response bias. Furthermore, the item "I notice, and am sensitive to my distressed feelings when they arise in me" could be read as a two part question and therefore lead to some ambiguity. Perhaps some participants agreed that they had noticed their distress but did not feel they responded in a way which was "sensitive." The word sensitive also has a number of different meanings in everyday use, for example it could be interpreted to mean easily pained or as having an awareness, and this could lead to inconsistency in answering (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Therefore, it is recommended that these items are either deleted from the scale going forward or the items are re-worded.

Test-retest reliability

The CEAS self-compassion subscale was found to be the most reliable over time ($r = .82$). The compassion towards other subscale was also found to have good reliability over time ($r = .80$) as was the receiving compassion subscale ($r = .75$). Good reliability scores indicate that the scores on a measure are an accurate representation of participants'

performance, rather than the result of environmental or methodological processes. Moreover good test re-test reliability is crucial if a measure is to be used to evaluate the impact of an intervention. If a measure has poor reliability then it is difficult to ascertain whether changes in scores on a measure are the result of the intervention or are artefacts of the tool (Hobbs, 2016).

Floor/ceiling effects

Only eight participants scored within the bottom 5% of scores, which indicates that floor/ceiling effects were not present in the data set. The presence of floor/ceiling effects infers that extreme items are absent in the lower and upper ends of a scale, which can limit content validity. This also means that respondents with the highest or lowest possible scores cannot be distinguished, which decreases reliability (Terwee et al., 2007). This is a psychometric property that is often not reported in scale development papers. For example, of the 13 compassion measures identified in the literature review described in the introductory chapter, only two measures (the Relational Compassion Scale, Hacker, 2008, and the Compassion Scale, Pommier, 2010) assessed for floor/ceiling effects.

Convergent validity

The CEAS self-compassion, compassion towards others and receiving compassion from others subscales were all found to be positively significantly related to each other, however, the effect sizes were small, which indicates that these aspects of compassion can also be differentiated. These findings also suggest that it is possible to feel higher levels of one form of compassion and lower levels of another.

With regards to convergent validity, the CEAS was correlated with two other existing compassion measures, the Self-Compassion Scale (SCS, Neff, 2003) and Santa Clara Brief Compassion Scale (Hwang et al., 2008). As hypothesised, the CEAS self-compassion

subscale correlated highly with the SCS. The compassion towards others subscale correlated most highly with the SCBCS, which is a measure of compassion towards others. There is currently no published scale which assesses receiving compassion and so this subscale could not be assessed against a similar measure. Overall, the findings provide further evidence that the three CEAS subscales are measuring their intended orientation of compassion and that they are capturing different aspects of compassion.

The CEAS were also correlated with the six subscales of the SCS. Overall the self-compassion CEAS subscale correlated most highly with the six SCS subscales compared to the compassion towards and from others subscales. The CEAS self-compassion subscale had the strongest relationship with the three positive SCS subscales (mindfulness, common humanity and self-kindness), which supports previous suggestions that it is the three positive SCS subscales that are assessing self-compassion and not the three negative subscales (Lopez et al., 2015; Muris & Petrocchi, 2016). The compassion from others subscale was positively related to all six SCS subscales. The compassion towards others subscale had the weakest relationship with the three positive subscales and no relationship was found with the three negative subscales (self-judgement, over identification and isolation).

A further set of bivariate correlations were also conducted to assess the relationship between exposure to mindfulness and compassionate practices and level of compassion. Practice was found to be significantly positively related to levels of self-compassion and compassion towards others, however there was no relationship found between amount of practice and receiving compassion. The implications from these findings will be discussed further under the 'Clinical Implications' subsection.

Summary related to the psychometric properties of the CEAS.

The CEAS is the first set of subscales that measure the three orientations of compassion. This study supports the use of the CEAS as a reliable and valid measure of compassion. This study differed from that of the original scale development paper by Gilbert et al., (2017) who performed six factor analyses (one for each of the action and engagement scales across all three subscales). This study opted to perform a factor analysis across all of the items, as well as separately for each subscale. The findings suggest that when taken as a whole, the three flows of compassion are distinguishable but the action and engagement scales are not. However, when analysed as separate subscales the action and engagement subscales can be differentiated. Therefore, this study supports the use of the CEAS as three separate scales in which the subscales of engagement and action scores can also be analysed. In addition, based on the findings from a higher order model of compassion, it is also proposed that an overall composite score of compassion could be used if appropriate. Whilst it is valuable to research the three separate flows of compassion, they are also interrelated, which means that an overall score of compassion may offer a more representative measure of an overall level of compassion.

In addition, the findings from the PCA and CFA suggest that construct validity could be improved if a number of items with low factor loadings, communalities and estimates were deleted from the scales. This was supported by internal consistency analyses which revealed that deleting those items would increase internal consistency. Convergent validity was also established.

Summary of findings related to aim 2: To explore the level of compassion as measured by the three Compassionate Engagement and Action subscales in an adult community sample

The second aim of the study was to investigate the level of the three orientations of compassion in an adult community sample. The findings from the descriptive statistics indicated that on average, the general population experienced a moderate level of compassion across all three orientations of compassion. Participants scored highest on giving compassion to others, followed by self-compassion and lowest on receiving compassion from others. This suggests that on average people find it easier to give compassion towards others then to receive it.

The lower reported scores of receiving compassion may be understood in connection to prior research which has found that there are a number of barriers, such as feeling fearful of compassion (Gilbert et al. 2010), which can prevent people from being open to compassion from others. For example, for some people, receiving compassion from others may arouse feelings of grief and loneliness (Gilbert, 2010). Another related idea is that research suggests that people are more likely to help others who appear happy then those who appear distressed (Hauser, Preston, & Stansfield, 2014). This is supported by the findings of this study which found a negative association between receiving compassion and depression, which could indicate that people who reported higher levels of distress received the least compassion. However, the data from this study was not drawn from an overtly distressed sample and therefore further research is needed to investigate this hypothesis.

Finally, the descriptive statistics for the action and engagements subscales suggest that on average participants scored higher on the action subscales then the engagement subscales, consistently across all three orientations of compassion. Thus it seems that people

are more able to turn their attention to, reason with and behave in a way that alleviates suffering then they are to approach, tolerate and engage with distress.

Summary of findings related to aim 3: Investigating the relationship between non-clinical depression, anxiety, stress, positive affect and the three orientations of compassion.

Hypothesis 1: The three Compassionate Engagement and Action subscales will be positively related to positive affect and negatively related to depression, anxiety and stress.

To date most studies have only explored self-compassion or one aspect of compassion and its relationship to positive affect, depression, anxiety and stress. Therefore, the third aim of the present study was to explore the associations between the three different orientations of compassion and positive affect, anxiety, stress and depression in the general population. Previous research has found a positive association between compassion and positive affect (Jazaieri et al., 2014, Klimecki, Leiberg, Lamm, & Singer, 2012; Neff & Vonk, 2009) and a negative relationship between compassion and psychopathology (Barnard & Curry, 2011). Based on previous research it was hypothesised that all three CEAS subscales would be related to the DASS-21 and PAS.

Compassion and anxiety, stress and depression.

As hypothesised, the CEAS self-compassion scale was found to be negatively significantly related to stress, anxiety and depression. This suggests that people with higher reported levels of self-compassion experienced less depression, stress and anxiety. This finding supports the growing body of existing research which has found that self-compassion is negatively related to psychopathology (Macbeth & Gumley, 2012). In particular the literature around depression has found that self-compassion and depression are consistently

negatively associated (e.g. Ehret, Joormann & Berking, 2015; Fard, 2016; Ford, Kilbert,

Tarantino & Lamis, 2016; Johnson & O'Brien, 2013; Korner et al., 2015; Krieger et al.,

2013; Raes, 2011). Furthermore a recent meta-analysis of 194 studies found a positive

relationship between self-compassion and well-being (Zessin, Dickhauser & Garbade, 2015).

This provides further evidence of the validity of the CEAS self-compassion scale.

The CEAS receiving compassion from others scale was found to be negatively

significantly related to stress, anxiety and depression. This is consistent with the evidence

base, as well as the views of many philosophical and spiritual leaders, which maintain that

receiving compassion from others increases well-being (Cosley, McCoy, Saslow, Epel, 2010)

and may act as a buffer to psychopathology (Wang, Cai, Qian & Peng, 2014). This may be

because receiving compassion from others is indicative of some level of social support and

the effects of lack of social support are well documented to be detrimental to well-being and

linked to increased morbidity and mortality (Hawkley, Masi, Berry, & Cacioppo, 2006).

Compassion towards others did not have a significant relationship with stress, anxiety

or depression, which does not support the hypothesis. This suggests that showing compassion

towards others does not have a relationship to psychopathology. Taken with the above

findings one might conclude that it is more important to feel compassion towards yourself or

from someone else then it is to feel or offer compassion towards others. This finding is in

contrast to some previous research which suggests that being kind and compassionate

towards others is associated with improved well-being (Catarino, Gilbert, McEwan & Baião,

2014). In addition, compassion fatigue, defined as a reduced ability to bear the suffering of

others (Figley, 2002), has also been linked to increased stress, anxiety and depression

(Hegney et al., 2014).

A reciprocal relationship between compassion from and towards others has been

theoretically indicated, which posits that individuals who show greater compassion for others

perceive greater compassion for themselves (Crocker & Canevello, 2008; Lemay & Clark, 2008). Thus perhaps compassion for others has a more indirect relationship with depression, anxiety and stress which was not identified in the bivariate correlations. Indeed, previous research has found that people who are more compassionate towards others are more open to receive compassion from others, which in turn decreases stress (Cosley et al., 2010). This relationship was supported by the positive association found between the compassion for others and compassion from others subscales.

Nonetheless the findings from this study suggest that compassion towards others does not appear to be directly linked to stress, anxiety and depression. This may be because, in contrast to the above research, other studies have investigated the varying motives people have for giving compassion and have found that showing compassion towards others can have a negative impact on stress and well-being. For example, if people feel obligated to provide care with few resources to cope (Vitaliano, Zhang & Scanlan, 2003), if care and support is not reciprocated (Epel et al., 2004) and if people put others needs before their own (Helgeson & Fritz, 1999). Thus the evidence is conflicting, as for some people it may be that giving compassion to others can have psychological benefits but for others it may not, which might explain why no relationship was found. This hypothesis requires further investigation.

Compassion and positive affect.

The present study was unique in that it explored the relationship between the three orientations of compassion and positive affect. Positive affect has previously been found to be negatively related to psychopathology (Gilbert et al., 2008). Therefore it was hypothesised that all three CEAS subscales would be positively related to positive (relaxed, safe & active) affect and this was supported by the data.

Both the CEAS self-compassion subscale and compassion from others subscale had positive significant relationships with positive affect. This is supported by previous research which has found a positive relationship between self-compassion and positive affect (Neff et al., 2007). The compassion towards others subscale showed the weakest relationship with safe (e.g. content, warm, secure) and active (e.g. excited, eager, lively) positive affect and no relationship with relaxed (e.g. peaceful, calm, serene) positive affect.

Safe affect had the strongest relationship with each of the three orientations of compassion. This is interesting since safe affect has been most closely associated with decreased psychopathology (Gilbert et al, 2008). Perhaps then, the more compassion someone feels, the more positive affect they experience, especially those emotions linked to safety and contentment, which may lead to increased well-being and decreased distress. This hypothesis is supported by the significant negative correlations found between positive affect and stress, anxiety and depression.

Summary of relationship between the three CEAS subscales, depression, anxiety, stress and positive affect.

In line with the first hypothesis, the CEAS self-compassion subscale and receiving compassion from others subscale was found to be positively related to stress, anxiety, depression and positive affect. However, the hypothesis that the compassion towards others subscale would also be associated with anxiety, depression, stress was not supported. Furthermore, compassion towards others was not found to be related to relaxed positive affect and was only weakly associated with safe and active positive affect.

Hypothesis 2: The three Compassionate Engagement and Action subscales will explain additional unique variance in the relationships between compassion, positive affect, anxiety, depression and stress over and above the SCS.

Compassion and anxiety, depression and stress.

Previous research has shown that compassion is multi-dimensional and inter-related and theoretically it is suggested that receiving and giving compassion may play a role either directly or indirectly in reducing stress, anxiety and depression. Therefore it was hypothesised that the CEAS would explain additional unique variance in the relationships between compassion, depression, anxiety and stress (as measured by the DASS-21) over and above that explained by the SCS and this hypothesis was supported.

The multiple regression indicated that when the SCS negative subscales were removed from the analysis, the CEAS explained an additional 8% unique variance than the SCS positive subscales. All three CEAS subscales were found to predict the DASS-21. In particular, the CEAS self-compassion subscale was the strongest predictor of stress, anxiety and depression, which suggests that self-compassion has a stronger relationship with psychological distress than the other two orientations of compassion. The three SCS positive subscales were not found to predict the DASS-21, which indicates that the CEAS is a better predictor of depression, anxiety and stress than the SCS positive subscales.

The CEAS self-compassion and receiving compassion from others subscales were reported to negatively predict the DASS-21 however, the CEAS compassion towards others subscale was found to have a positive relationship with the DASS-21, although this was a weaker relationship. This suggests that there may be situations when giving compassion to others may lead to increased feelings of distress. This hypothesis would fit with the large body of literature which has evidenced that caregivers of people with physical health problems reports higher levels of anxiety, depression and stress (Aboulafia-Brakha, Suchecki, Gouveia-Paulino, Nitrini & Ptak, 2014; Leonard & Cano, 2006; Pagani et al., 2014; Rhee et al., 2008).

The negative relationship may also be indicative of a number of barriers to giving compassion towards others which may create feelings of anxiety, stress and sadness. Gilbert et al, (2011) found that out of the three orientations of compassion, people feared giving compassion towards others the most. There are a number of reasons this might be, for example, the fear that it might disadvantage them in some way and so to avoid it is an act of self-preservation (Gerhardt, 2010). Another explanation is that people can sometimes see compassion as a form of submissiveness, which again might disadvantage them in some way (e.g. that showing kindness to others will be seen as weakness, Catarino, Gilbert, McEwan & Baião, 2014). Therefore perhaps showing compassion towards others generates a number of negative emotions which inhibits any positive effects of being compassionate to others.

Another interesting factor that may play a role in the ability to be compassionate towards others stems from attachment theory. Gilbert et al, (2011) found that those who reported a fear of compassion towards others also reported insecure attachment styles. This makes sense given that the attachment literature would suggest that the propensity to provide care is evolved out of a sense of security and safety, which is dependent on secure attachments with caregivers (Mikulincer, Shaver, Gillath & Nitzberg, 2005). Thus, it then follows that people who have developed insecure attachment strategies might find compassionate caregiving towards others more difficult and report higher levels of distress compared with people with secure attachment styles (Mikulincer & Shaver, 2005).

Compassion and positive affect.

The hypothesis that the CEAS would explain additional unique variance in the relationship between compassion and positive affect over and above the variance explained by the SCS was supported. The multiple regression indicated that the CEAS explained an additional 8% of the variance than the positive SCS subscales alone. The SCS common

humanity, mindfulness, CEAS self-compassion and receiving compassion subscales all significantly predicted positive affect. The CEAS self-compassion subscale was the strongest predictor of positive affect. The compassion towards others subscale did not predict positive affect. Thus overall the model suggests that self-compassion has a stronger relationship with positive affect then the other two orientations of compassion and that overall the CEAS is a better predictor of the PAS then the SCS.

Summary of the CEAS as a predictor of depression, anxiety, stress and positive affect.

The CEAS self-compassion subscale was the strongest predictor variable for both the DASS-21 and the PAS, which indicates that self-compassion has the most influence on these two dependent variables. This has both clinical and research implications, both of which will be discussed under the 'Clinical Implications' and 'Recommendations for Future Research' subsections.

Strengths and Limitations of the Present Study

This was the first study which sought to examine the psychometric properties of the CEAS in the general population. This study was also the first to explore the relationship between the three orientations of compassion, anxiety, stress, depression and positive affect in the general population. This is important since in order to develop interventions to increase compassion or investigate factors which might inhibit compassion, it is useful to have normative data from the general population from which comparisons can be made (Whomsley, 2014).

Sample

This study recruited a relatively large sample of the general population, which was representative of the population age and ethnicity in the UK. Obtaining a community sample

was a particular strength of this study since most previous compassion measure validation studies have employed student populations. The limitations of student sample research are well documented, for example they have been found to have higher prevalence rates of mental health difficulties (Stallman, 2010), and therefore validating measures within this population group may reduce generalisability.

The sample was made up of predominantly higher-educated, employed females, which is consistent with previous online research (Curtin, Presser, & Singer, 2000; Goyder, Warriner, & Miller, 2002; Singer, van Hoewyk, & Maher, 2000). Gender bias is common to many studies and researchers have attempted to understand why this might be. For example, England (2002) suggests that men place higher value on seperative characteristics (such as autonomy) whereas females place greater emphasis on characteristics that connect them to others (such as empathy or emotional closeness). With this interpretation in mind, females may be more likely to engage in survey research if they see this as consistent with the connecting self.

In addition, the recruitment method of the study mainly employed a snowball sampling method, which may have inadvertently led to a more biased sample, since recruitment was based on social networks rather than random selection (Biernacki & Waldorf, 1981; Baxter & Eyles, 1997). For example, it may have led to the inclusion of participants who are more inter-connected rather than participants who are not connected to the recruitment networks or more isolated individuals (Atkinson & Flint, 2001). Furthermore, participants from the recruitment chain may share more similar or unique characteristics (e.g. an interest in psychology or compassion research), which are not shared by the wider population. This recruitment strategy also meant that it was not possible to assess data on participant decline or dropout rates. Thus there may be some limits in terms of

generalisability, however the relatively large number of volunteer respondents provides some assurance to the reliability of the data.

Design

The current study was predominantly cross-sectional in design and hence there is potential that the results may be confounded by cohort and period effects (Nestor & Schutt, 2012). In addition, part of the study was correlational in design, which on the one hand provides a good insight into the relationships between compassion and other variables, but on the other hand it does not provide further understanding about the cause and effect of these factors. Furthermore, there are other possible unidentified confounding variables (such as significant life events) which may have influenced the relationships observed in this study.

Online surveys.

Online surveys are one of the preferred methods of conducting survey research due to their many advantages, such as efficiency, low-cost, flexibility and global reach (Evans & Mathur, 2005). Many factors can influence response rates in online survey research and so the survey was designed to be as short, easy to complete and convenient as possible, for example, it could be completed on a mobile phone, tablet or other computer device. Lengthy surveys have been found to reduce response rates (Sheehan, 2001) and therefore the number of items included in the survey was limited. However, this meant that other variables, such as self-reassurance, were not assessed which could have provided further knowledge about the factors related to compassion.

Furthermore, the order of questions and question answer format was considered in construction of the survey in order to reduce common method variance (Podsakoff et al., 2003). For example, different formats and style of rating scales were used and the order of

measures was presented in a way to ensure that not all of the compassion measures were completed consecutively.

   Self-report measures.

   The CEAS is the first measure developed which captures a multi-faceted understanding of compassion and encompasses a broad conceptualisation of compassion, as opposed to one aspect of it (e.g. self-compassion). Self-report measures offer a number of advantages to exploring human experiences. For example, self-report measures can ameliorate interviewer effects and social desirability bias due to the anonymity of online self-report questionnaires, which means that respondents are more likely to answer honestly as they are not identifiable (Krosnick & Presser, 2010). This is important to consider when conducting research in this area as there is a strong cultural discourse which endorses compassion as a desirable virtue (Fotaki, 2015).

   There are, however, some shortcomings with the use of self-report questionnaires. For instance, some participants may not have understood some of the wording of the items. This was hypothesised for a number of questions in the CEAS, which were deleted following the PCA, CFA and reliability analyses. In addition, the ability of an item to capture the construct it is intended to measure can be difficult to ascertain. For example, Gilbert et al., (2017) highlight that it is unclear to what extent the item wording of "reflect on and make sense of…" is able to capture empathy. Thus it may be that further revisions to the wording of the items is needed.

   The concept of compassion is a complex one and for different people may have variable meanings. The developers of the CEAS usefully include a definition of compassion at the start of each of the subscales, which may help to reduce this variability but respondents

may still have drawn on their own understanding of compassion, which may have captured a similarly related construct, such as empathy or kindness. However, a study by Pauley and McPherson (2010) found that, when asked to define compassion, in general people described an aspect of caring and needing to take action as key parts of compassion. This is congruent with the definition of compassion put forward by Gilbert (2009) and provides further support for the validity of the measure.

Proponents of social constructionism have also critiqued self-report measures for trying to reduce human experiences down to quantifiable measurable entities (Cromby, 2011). Psychological phenomena from this position are seen as socially constructed and therefore qualitative research that focuses on the discourses of compassion is regarded as more useful. Harre (2002) supports this stance stating that measures cannot be likened to thermometers that test the state of an emotion. Instead, Harre (2002) argues that measures are a form of linguistic interaction and therefore the process of completing a questionnaire is not an objective measurement of the dependent variable, but rather a process in which the dependent variable can be modelled and changed.

In contrast, a positivist position would maintain that compassion does exist as a real human experience and accordingly can be measured quantitatively. However, the current study is underpinned by a different position known as critical realism. This epistemological view would see the study of compassion, in both qualitative and quantitative research methodologies, as valuable as long as a critical stance is taken with regard to the social and historical context (Pilgrim & Bental, 1999). Thus, whilst self-report measures may be biased to some extent by dominant cultural norms, researchers can acknowledge these shortcomings whilst continuing to work within the constraints in a hope that this might lead to change and finding ways to overcome such challenges. Furthermore, in clinical practice, measures are not designed to be used in isolation and information obtained from a measure should be

interpreted within the context, whilst drawing on multiple sources of information (McAleavey, Nordberg, Kraus, & Castonguay, 2012). In conclusion, whilst it is important to acknowledge the limitations of self-report measures, there is no denying their utility in the field of psychological (and many other disciplines) clinical practice and research.

Summary of present study strengths and limitations.

This study excels in the detailed assessment of the psychometric properties of the CEAS in comparison to most questionnaire validation studies. For example, the present study reviewed psychometric properties, such as floor/ceiling effects and test re-test reliability, which are often not reported. This study was also novel in its validation of the CEAS in a large community sample. Therefore it can be concluded that the CEAS is a reliable and valid tool which can be used in both research and clinical practice. Despite some limitations, self-report measures have many advantages for use in the clinical and research field. In the current political climate in the NHS, self-report measures are vital for outcome research and their properties must therefore be empirically evidence based.

Clinical Implications

There are a number of clinical implications that follow as a result of the study findings. The present study supports the use of the CEAS in research and clinical practice and for the continued implementation and development of interventions which aim to increase compassion, both at an individual and organisational level.

Outcome measures

The CEAS addresses a number of shortfalls of previous measures of compassion and encompasses a wider theoretical conceptualisation of compassion. It is therefore

recommended that going forward the CEAS is the most appropriate measure for clinicians and researchers who wish to explore and measure compassion.

Routine outcome measures are increasingly becoming a requisite for healthcare services as a way of evaluating services and evidencing effectiveness (Clark et al., 2009). In the field of clinical psychology this is particularly important for a number of reasons. Firstly, one of the roles of a psychologist within a healthcare setting is to review and evaluate service provision by using outcome measures in order to help inform service improvement. Secondly, psychologists can use self-report measures as a way to review the progress of therapeutic interventions with their clients. There is even research to suggest that the use of outcome measures helps to improve outcomes in therapy (Shimokawa, Lambert, & Smart, 2010). Thus developing evidence based self-report measures which can be employed as outcome measures, such as the CEAS, is important to support psychologists in their roles.

Despite initiatives to implement routine outcome monitoring in the NHS, many clinicians still do not utilise outcome measures in their work (Boswell, Kraus, Miller & Lambert, 2015). One of the reasons for this may be that outcome monitoring might not fit with some clinician's own professional beliefs about the targets of therapy, which are not easily measured in the form of symptoms (Hatfield & Ogles, 2007). Client well-being is often one of those targets and it cannot be assessed only by the absence of psychopathology (Seligman & Csikzentmihalyi, 2000). Therefore, developing and implementing outcome measures which focus on positive human strengths and relational factors, such as the CEAS, will help to promote a shift away from a disorder-focused approach towards a strengths-based approach, which is less stigmatising (Hefferon & Boniwell, 2011).

Compassion Focused Therapy

The findings from this study support the continued clinical utility of cultivating compassion. The results suggest that higher levels of self-compassion and receiving compassion are related to lower levels of psychopathology and higher levels of positive affect. In addition, it was also found that it may be easier to give compassion towards others then to be self-compassionate or receive it from others. This suggests that helping people to develop self-compassion and being open to compassion from others will be important in protecting against mental health difficulties.

Compassion Focused Therapy (CFT, Gilbert, 2009) is a therapeutic approach developed by psychologists to support the cultivation of compassion. CFT is based on the premise that most psychological difficulties are rooted in interpersonal problems concerned with caregiving in relation to oneself or others (Gilbert, 2014). The evidence base for this approach is growing and supports the effectiveness of CFT as a trans-diagnostic psychotherapeutic intervention to reduce psychopathology and increase well-being (Kirby, 2016; Leaviss & Uttley, 2014). There have been recent advancements of the efficacy of CFT in areas such as eating disorders (Gale, Gilbert, Read, & Goss, 2014; Kelly, Wisniewski, Martin, Wagar & Hoffman, 2016), psychosis (Braehler et al., 2013), personality disorder (Lucre & Corten, 2013), social anxiety (Boersma, Håkanson, Salomonsson, & Johansson, 2015) and brain injury (Ashworth, Clarke, Jones, Jennings & Longworth, 2015). To date, CFT has been the most evaluated compassion based intervention, including several randomised controlled trials, and therefore CFT is recommended as the most appropriate intervention in clinical populations (Kirby, 2016).

Cultivating compassion in NHS healthcare professionals may also have a number of benefits, such as strengthening relationships to clients, reducing burnout, reducing compassion fatigue and increasing well-being (Boellinghaus, Jones, & Hutton, 2014). Studies

have found that compassion based interventions for healthcare professionals have led to increased self-compassion, which may lead to decreased compassion fatigue and burnout and foster compassionate care (Beaumont & Hollins-Martin, 2016; Beaumont, Irons, Rayner, Dagnall. 2016). Thus providing staff interventions and training in compassion might help staff to feel more supported in their roles to provide compassionate care whilst maintaining their own health and welfare (Egan, Mantzios & Jackson, 2016).

Other ways in which cultivating compassion in NHS healthcare settings could be supported include the use of CFT models and formulations as part of MDT case discussions, CFT continued professional development events and incorporating CFT ideas into management and leadership training (Storey and Holti, 2013). These types of initiatives rely on the resources and support from management and therefore it is important that the potential benefits are disseminated.

In support of compassion cultivation training, in the current study sample it was found that participants who reported higher levels of exposure to compassion and/or mindfulness practice also reported higher levels of self-compassion and compassion to others. Receiving compassion was not found to be related to practice, which may be due to external factors (e.g. no resources to receive compassion) or that compassion and mindfulness practices are generally more orientated towards the self and others. Thus clinicians need to ensure that interventions are focused on helping people not only to practice self-compassion but also how to be open to and accepting of it from others.

Compassion interventions should also aim to address fears of compassion since it is suggested that these can impede a person's capacity for compassion and are linked to psychopathology (Gilbert et al., 2012; Gilbert, et al., 2011). CFT is currently the only

compassion based intervention which directly works with fears of compassion (Kirby, 2016) and therefore is the recommended approach.

Cultural shift

Compassion is fundamental to human development however, cultivating it can be challenging within the current socio-political and economic climate. Compassion is commonly referred to throughout healthcare policy literature (Christiansen, O'Brien, Kirton, Zubairu & Bray, 2015). For example, in the Developing the Culture of Compassionate Care consultation document (Cummings & Bennett 2012), which advocates for individualised responsibility for compassionate practice. Many psychologists in the field would strongly argue against this view as it fosters a dichotomous perception that staff either 'have' or 'do not have' compassion, when in fact there are a number of factors and issues which influence the delivery of care which is beyond any individual capacity for compassion (McPherson et al., 2016). For example, in the NHS, organisational factors, such as time constraints, heavy workloads and staff shortages, have been reported by nurses to hinder their ability to provide compassionate care (Christiansen et al., 2015). Thus when developing interventions aimed at increasing compassion in the NHS, organisational factors need to be considered and where possible a bi-directional relationship of compassion developed between patients, staff and organisations (Crawford et al., 2014).

In order to promote compassion in healthcare a cultural shift is perhaps required and one way to do this is through applying ideas from CFT to an organisational level. For example, formulating organisational difficulties within a CFT conceptualisation or creating environments which foster compassion (Crawford, et al., 2014). The CFT model outlines an affect regulation system that humans have developed to survive, which consists of three emotion systems referred to as the drive/excitement, safety/soothing/contentment and threat-protection systems (Gilbert, 2009). The model postulates that when the threat system is

activated in response to perceived danger, the ability to soothe is diminished and that problems occur when the threat system remains activated.

From this perspective, the NHS can be viewed as operating in a continued state of threat due to external pressures, such as payment by results, tendering processes and financial cuts. Using CFT ideas to formulate organisational issues can help to inform service design and enable changes to be made in NHS organisations which move away from blame, punitive sanctions and threat avoidance to a culture of safety and support. It is hoped that developing a more psychologically informed understanding of difficulties in healthcare will help to develop more compassionate and, therefore, effective services (Cole-King & Gilbert, 2011).

Summary of clinical implications

In sum, the CEAS can be employed as a robust measure of compassion within research and clinical settings and provides an alternative to disorder-focused outcome measures. This study supports the continued development of compassion based interventions, such as CFT, which aim to increase compassion both at an individual and organisational level.

Recommendations for Future Research

Further validation of the CEAS

The findings from this study need to be replicated in larger, more diverse samples and clinical population groups in order to develop further population normative data (Fitzpatrcik, 1998). This is important not only to support the use of the CEAS in clinical populations but also since the CEAS receiving compassion from others subscale is the first scale to assess this orientation of compassion. To date, receiving compassion has received little attention in the research field. Given that the findings from this study suggest that receiving compassion is an

important predictor of stress, anxiety, depression and positive affect, further research on this orientation of compassion is needed.

A shortened version of the CEAS could be developed in order to increase feasibility of use in a clinical setting (Fitzpatrick, 1998). The removal or rewording of a number of scale items (i.e. "I tolerate various feelings that are part of my distress, I tolerate various feelings that are part of other people's distress, I am emotionally moved by my distressed feelings or situations" and "I notice, and am sensitive to my distressed feelings when they arise in me") may also help to reduce common method variance for future researchers using this scale (Podsakoff et al., 2003).

The CEAS has only been examined in terms of its psychometric properties and therefore it may be helpful to seek further qualitative feedback from professionals, service users and lay people regarding face validity, ease of completion, length of time of completion and feedback on wording of items, to help improve reliability and validity (Blount et al., 2002). For example, it is hypothesised that low factor loadings on four of the items, which have been recommended for removal, may be due to the wording of the items. Qualitative user-led feedback would provide further insight to this.

Also when considering face validity, many of the CEAS items contained the word "distress" and indeed all of the subscales focus on compassion at times of distress. Whilst it is acknowledged that all people feel distressed at times, this may be less of an experience in a community sample. Therefore, this measure may be more appropriate for clinical rather than community populations. But also, as stated by previous researchers, people can act in compassionate and caring ways for many reasons and not just during times of distress (Catarino, Gilbert, McEwan & Baião, 2014).

Further research into Compassion Focused Therapy

Studies should continue to develop and evaluate CFT interventions. Based on the findings from this study it would seem that interventions targeting self-compassion and receiving compassion from others are the areas which would have most impact on anxiety, stress, depression and positive affect. As part of evaluating interventions, research should also continue to explore the barriers to the three flows of compassion, such as fears of compassion and environmental factors, as these may have an impact on intervention outcomes. For example, in a study of NHS staff it was found that time pressure, feeling constrained to express emotions at work due to professional responsibility and limited modelling of compassion in the organisation, were all barriers to staff experiencing compassion (McPherson et al., 2016). These types of studies provide important information on how compassion can be better facilitated.

Research should continue to focus on a systemic perspective of compassion and the role organisations play in impacting on this. Initiatives which aim to make changes to the system, for example to the physical environment, need to be developed and evaluated. Schwartz rounds (Lown & Manning, 2010) are one example of such an initiative. Schwartz rounds were introduced to the NHS in 2011 to increase compassion within organisations by providing a space for all staff to discuss social and emotional aspects of caring for patients (Goodrich, 2012). There are a number of studies which have reviewed the impact of Schwartz rounds and found that attendance at these meetings was associated with decreased stress, increased compassion and empathy for patients and staff, better working relationships with patients and staff and diminished hierarchy amongst staff grades (George, 2016; Reed, Cullen, Gannon, Knight & Todd, 2015; Thompson, 2013).

Finally, as has been explored within related construct research areas, such as mindfulness and emotion research, it is likely that compassion is something which changes

depending on context and over time. Therefore longitudinal studies using the CEAS which follow the trajectory of compassion may be helpful in furthering our understanding of factors which influence compassion (MacBeth & Gumley, 2012).

Overall Conclusion

Compassion is an aspect of human nature that has been explored throughout the course of human history. Experts across many fields, such as philosophy, psychology and theology, all agree that compassion is an integral aspect of society. In the UK it has become a particular focus in the delivery of healthcare provision, with the NHS striving to deliver better compassionate care. This raises questions about our propensity for compassion not only as healthcare professionals but also as social human beings. Within this drive there needs to be an understanding of what it means to be compassionate and what factors enable or inhibit this.

A review of the literature found that existing measures of compassion were limited in both their psychometric properties and also their conceptualisation of compassion. The Self-compassion scale (SCS, Neff, 2003a) was found to be the most robust measure of compassion, however, the SCS only measures compassion directed towards the self. Therefore the development of a new measure of compassion was warranted, which measured self to self, self to other and other to self compassion. Gilbert et al. (2017) developed a measure of compassion called the Compassionate Engagement and Action Scale (CEAS) which is a self-report measure of the three orientations of compassion; towards self, others and receiving compassion. The current research sought to assess the psychometric properties of the CEAS in a community sample.

The current research supports the use of the CEAS as a robust measure of compassion and one which can make a unique contribution to the field due to its ability to capture the

three flows of compassion. This study further supports existing research which suggests that self -compassion and receiving compassion from others is negatively related to anxiety, depression, stress and positively related to positive affect. Giving compassion to others was not found to be related to psychopathology, which on the one hand could mean that those who find this difficult may not feel distressed but on the other hand this may also limit an individuals' ability to increase positive affect. It is important that future studies continue to explore this relationship and other influencing factors.

The findings also support the value in cultivating compassion in order to help reduce mental health difficulties and increase well-being. Compassion Focused Therapy was developed to support people with high levels of self-criticism and shame, which is commonly reported by people with mental health difficulties. It is recommended therefore that clinicians working in healthcare settings should consider ways of incorporating compassion practices into their interventions. Moreover raising awareness of the impact of organisational issues on delivery of care is crucial and consideration should be given as to how compassionate organisations can be designed. It is maintained that all individuals exist within a certain context and therefore it is futile to examine compassion purely as an individualised entity. On a wider level, these ideas may also help to raise the profile of subjugated discourses around societal issues (such as inequality of resources) and how these shape mental health, rather than locating problems within individuals.

In sum, the promotion of compassion through research may lead to a greater awareness of the value of compassion in healthcare and wider society. Not only are there potential benefits for individuals and organisations but also "a culture shift which recognized the value of self-compassion could also benefit society, as it would encourage a kinder, less self-absorbed, less isolated, and more emotionally functional populace" (Neff, 2003b, p.96).

References

Aboulafia-Brakha, T., Suchecki, D., Gouveia-Paulino, F., Nitrini, R., & Ptak, R. (2014). Cognitive–behavioural group therapy improves a psychophysiological marker of stress in caregivers of patients with Alzheimer's disease. *Aging & Mental Health*, 18(6), 801-808.

Adams, R. J., Smart, P., & Huff, A. S. (2016). Shades of grey: guidelines for working with the grey literature in systematic reviews for management and organizational studies. *International Journal of Management Reviews*, 1-23.

Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, *10*(2), 176-181.

Ashworth, F., Clarke, A., Jones, L., Jennings, C., & Longworth, C. (2015). An exploration of compassion focused therapy following acquired brain injury. *Psychology and Psychotherapy: Theory, Research and Practice*, *88*(2), 143-162.

Atkinson, R., & Flint, J. (2001). Accessing hidden and hard-to-reach populations: Snowball research strategies. *Social Research Update, 33*. Retrieved from http://sru.soc.surrey.ac.uk/SRU33.pdf

Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural equation modeling*, *9*(1), 78-102.

Barad, J. A. (2007). The understanding and experience of compassion: Aquinas and the Dalai Lama. *Buddhist-Christian Studies*, 27(1), 11-29.

Barker, C., Pistrang, N., & Elliott, R. (2002). *Research methods in clinical psychology: An introduction for students and practitioners (2nd ed.).* West Sussex, England: John Wiley & Sons.

Barnard, L. K., & Curry, J. F. (2011). Self-compassion: Conceptualizations, correlates, and interventions. Review of General Psychology, 15, 289–303.

Barnett, V., & Lewis, T. (1978). *Outliers in statistical data.* New York: Wiley.

Baxter, J., & Eyles, J. (1997). Evaluating qualitative research in social geography: establishing 'rigour' in interview analysis. *Transactions of the Institute of British Geographers*, *22*(4), 505-525.

Beaumont, E., & Hollins-Martin, C. J. (2013). Using compassionate mind training as a resource in EMDR: A case study. *Journal of EMDR Practice and Research*, *7*(4), 186-199.

Beaumont, E. A., & Hollins- Martin, C. J. (2016). Heightening levels of compassion towards self and others through use of compassionate mind training. *British Journal of Midwifery*, 24 (11), 3-12.

Beaumont, E., Durkin, M., Martin, C. J. H., & Carson, J. (2016). Compassion for others, self-compassion, quality of life and mental well-being measures and their association with compassion fatigue and burnout in student midwives: A quantitative survey. *Midwifery*, *34*, 239-244.

Beaumont, E., Irons, C., Rayner, G., & Dagnall, N. (2016). Does Compassion-Focused Therapy Training for Health Care Educators and Providers Increase Self-Compassion and Reduce Self-Persecution and Self-Criticism?. *Journal of Continuing Education in the Health Professions*, *36*(1), 4-10.

Bentler, P.M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin*, 107 (2), 238-46.

Bentler, P.M. & Bonnet, D.C. (1980). Significance Tests and Goodness of Fit in the Analysis of Covariance Structures. *Psychological Bulletin*, 88 (3), 588-606.

Bergin, M., Wells, J. S., & Owen, S. (2008). Critical realism: a philosophical framework for the study of gender and mental health. *Nursing Philosophy*, *9*(3), 169-179.

Berry, W. D. (1993). *Understanding regression assumptions*. London: Sage Publications.

Bhaskar, R. (1989). *Reclaiming reality: A critical introduction to Contemporary philosophy*. London: Verso.

Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods & Research*, *10*(2), 141-163.

Blount, C., Evans, C., Birch, S., Warren, F., & Norton, K. (2002). The properties of self-report research measures: Beyond psychometrics. *Psychology and Psychotherapy: Theory, Research and Practice*, 75(2), 151-164.

Blunch, N. (2013). *Introduction to structural equation modelling using IBM SPSS statistics and AMOS (2ⁿᵈ ed.)*. London: Sage Publications.

Boellinghaus, I., Jones, F. W., & Hutton, J. (2014). The role of mindfulness and loving-kindness meditation in cultivating self-compassion and other-focused concern in health care professionals. *Mindfulness*, *5*(2), 129-138.

Boersma, K., Håkanson, A., Salomonsson, E., & Johansson, I. (2015). Compassion focused therapy to counteract shame, self-criticism and isolation. A replicated single case experimental study for individuals with social anxiety. *Journal of Contemporary Psychotherapy*, 45(2), 89-98.

Bollen, K. A. (1989). A New Incremental Fit Index for General Structural Equation Models. *Sociological Methods & Research*, 17, 303-316.

Boswell, J. F., Kraus, D. R., Miller, S. D., & Lambert, M. J. (2015). Implementing routine outcome monitoring in clinical practice: Benefits, challenges, and solutions. *Psychotherapy Research*, *25*(1), 6-19.

Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). New York, NY: Basic Books.

Bowyer, L., Wallis, J., & Lee, D. (2014). Developing a compassionate mind to enhance trauma-focused CBT with an adolescent female: a case study. *Behavioural and Cognitive Psychotherapy*, 42(2), 248-254.

Braehler, C., Gumley, A., Harper, J., Wallace, S., Norrie, J., & Gilbert, P. (2013). Exploring change processes in compassion focused therapy in psychosis: Results of a feasibility randomized controlled trial. *British Journal of Clinical Psychology*, 52(2), 199-214.

Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the evaluation of personality scales. *Journal of Personality*, 54, 106-148.

British Psychological Society. (2013). *Ethics Guidelines for Internet-mediated Research*. INF206/1.2013. Leicester: Author. Retrieved from www.bps.org.uk/publications/policy-andguidelines/ research-guidelines-policydocuments/research-guidelines-poli.

British Psychological Society (2014). *Code of human research ethics. Retrieved from http://www.bps.org.uk/system/files/Public%20files/inf180_web.pdf*

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of personality and social psychology*, *84*(4), 822 -848.

Browne, M. W. (1984). Asymptotically distribution-free methods for the analysis of covariance structures. *British Journal of Mathematical and Statistical Psychology*, *37*(1), 62-83.

Bryman, A. (2016). *Social research methods* (5th ed.). Oxford: Oxford University Press.

Burnell, L., & Agan, D. L. (2013). Compassionate care: Can it be defined and measured? The development of the Compassionate Care Assessment Tool. *International Journal of Caring Sciences*, *6*(2), 180-187.

Byrne, B.M. (2010). *Structural equation modeling with AMOS: basic concepts, applications, and programming* (*2nd ed.*). New York: Rouledge Taylor & Francis Group.

Cameron, R. A., Mazer, B. L., DeLuca, J. M., Mohile, S. G., & Epstein, R. M. (2015). In search of compassion: a new taxonomy of compassionate physician behaviours. *Health Expectations*, *18*(5), 1672-1685.

Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. R. (2000). Emotional experience in everyday life across the adult life span. *Journal of personality and social psychology*, *79*(4), 644-655.

Castilho, P., Pinto-Gouveia, J., & Duarte, J. (2017). Two forms of self-criticism mediate differently the shame–psychopathological symptoms link. *Psychology and Psychotherapy: Theory, Research and Practice*, *90*(1), 44-54.

Catarino, F., Gilbert, P., McEwan, K., & Baião, R. (2014). Compassion motivations: Distinguishing submissive compassion from genuine compassion and its association with shame, submissive behavior, depression, anxiety and stress. *Journal of Social and Clinical Psychology*, *33*(5), 399-412.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate behavioral research*, *1*(2), 245-276.

Chang, J.h., Fresco, J., & Green, B. (2014). The Development and Validation of the Compassion of Others' Lives Scale (The COOL Scale). *International Journal of Humanities and Social Science, 4(5),* 33 – 42.

Chou, C. P., Bentler, P. M., & Satorra, A. (1991). Scaled test statistics and robust standard errors for non-normal data in covariance structure analysis: a Monte Carlo study. *British Journal of Mathematical and Statistical Psychology*, *44*(2), 347-357.

Christiansen, A., O'Brien, M. R., Kirton, J. A., Zubairu, K., & Bray, L. (2015). Delivering

   compassionate care: the enablers and barriers. *British Journal of Nursing*, *24*(16), 833-837.

Clark, D. M., Layard, R., Smithies, R., Richards, D. A., Suckling, R., & Wright, B. (2009).

   Improving access to psychological therapy: Initial evaluation of two UK demonstration sites.

   Behaviour Research and Therapy, *47*(11), 910-920.

Compassion. (2017). In the Cambridge Advanced Learners Dictionary & Thesaurus. Cambridge

   University press. Retrieved from

   http://dictionary.cambridge.org/dictionary/english/compassion

Compassion. (2017). In the English Oxford Living Dictionary. Retrieved from

   https://en.oxforddictionaries.com/definition/compassion

Confer, J. C., Easton, J. A., Fleischman, D. S., Goetz, C. D., Lewis, D. M., Perilloux, C., & Buss, D.

   M. (2010). Evolutionary psychology: Controversies, questions, prospects, and limitations.

   American Psychologist, *65*(2), 110-126.

Coolican, H. (2009). Research Methods and Statistics in Psychology. Oxon: Routledge.

Cosley, B. J., McCoy, S. K., Saslow, L. R., & Epel, E. S. (2010). Is compassion for others stress

   buffering? Consequences of compassion and social support for physiological reactivity to

   stress. *Journal of Experimental Social Psychology*, *46*(5), 816-823.

Costa, J., Marôco, J., Pinto-Gouveia, J., Ferreira, C., & Castilho, P. (2015). Validation of the

   psychometric properties of the self-compassion scale. Testing the factorial validity and

   factorial invariance of the measure among borderline personality disorder, anxiety disorder,

   eating disorder and general populations. *Clinical Psychology & Psychotherapy*. doi:

   10.1002/cpp.1974

Crawford, P., Brown, B., Kvangarsnes, M., & Gilbert, P. (2014). The design of compassionate care. *Journal of clinical nursing*, *23*(23-24), 3589-3599.

Crocker, J., & Canevello, A. (2008). Creating and undermining social support in communal relationships: the role of compassionate and self-image goals. *Journal of personality and social psychology*, *95*(3), 555-575.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297-334.

Dalai Lama. (2001). *An Open Heart: Practising Compassion in Everyday Life*. London: Hodder & Stoughton.

Department of Health. (2010). *The NHS Constitution*. London: The Stationary Office.

Department of Health. (2012). Compassion in Practice: Nursing, Midwifery and Care Staff Our Vision and Strategy. London: The Stationary Office.

DeVellis, R.F. (2016). *Scale Development: Theory and Applications*. London: Sage Publications Ltd.

Diamantopoulos, A. & Siguaw, J.A. (2000). *Introducing LISREL*. London: Sage Publications.

Durbin, J., & Watson, G. S. (1951). Testing for serial correlation in least squares regression. II. *Biometrika*, *38*(1-2), 159-178.

Egan, H., Mantzios, M., & Jackson, C. (2016). Health Practitioners and the Directive Towards Compassionate Healthcare in the UK: Exploring the Need to Educate Health Practitioners on How to be Self-Compassionate and Mindful Alongside Mandating Compassion Towards Patients. *Health Professions Education*. Retrieved from http://dx.doi.org/10.1016/j.hpe.2016.09.002

Ehret, A. M., Joormann, J., & Berking, M. (2015). Examining risk and resilience factors for depression: The role of self-criticism and self-compassion. *Cognition and Emotion*, *29*(8), 1496-1504. doi: 10.1080/02699931.2014.992394

Ekman, P. (2009). *Emotional awareness: Overcoming obstacles to psychological balance and compassion*. New York, NY: Holt.

Ekman, P. (2010). Darwin's compassionate view of human nature. *Journal of the American Medical Association,* 303, 557–558.

Elliott, I., & Coker, S. (2008). Independent self-construal, self-reflection, and self-rumination: A path model for predicting happiness. *Australian Journal of Psychology*, 60 (3), 127-134.

England, P. (1993). The separative self: Androcentric bias in neoclassical assumptions. In M. A. Ferber & J.A. Nelson (eds.), *Beyond Economic Man: Feminist theory and economics* (pp. 37-53), Chicago: University of Chicago Press.

Epel, E. S., Blackburn, E. H., Lin, J., Dhabhar, F. S., Adler, N. E., Morrow, J. D., et al. (2004). Accelerated telomere shortening in response to life stress. *Proceedings of the National Academy of Sciences*, 101, 17312–17315.

Evans, J. R., & Mathur, A. (2005). The value of online surveys. *Internet Research*, *15*(2), 195-219.

Falconer, C. J., King, J. A., & Brewin, C. R. (2015). Demonstrating mood repair with a situation-based measure of self-compassion and self-criticism. *Psychology and Psychotherapy: Theory, Research and Practice*, *88*(4), 351-365.

Fard, H. R. S. (2016). The Relationship between self-compassion with depression among couples. *Journal of Current Research in Science*, (2), 578-582.

Field, A. (2009). *Discovering statistics using SPSS (3rd ed.)*. London: Sage Publications

Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self-care. *Journal of Clinical Psychology*, *58*(11), 1433-1441.

Ford, J., Klibert, J. J., Tarantino, N., & Lamis, D. A. (2016). Savouring and Self-compassion as

   Protective Factors for Depression. *Stress and Health*, 33 (2), 119-128, doi: 10.1002/smi.2687

Francis, R. (2013). *Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry: executive

   summary.* London: Stationery Office.

Gale, C., Gilbert, P., Read, N., & Goss, K. (2014). An evaluation of the impact of introducing

   compassion focused therapy to a standard treatment programme for people with eating

   disorders. *Clinical Psychology & Psychotherapy*, *21*(1), 1-12.

George, M. S. (2016). Stress in NHS staff triggers defensive inward-focussing and an associated loss

   of connection with colleagues: this is reversed by Schwartz Rounds. *Journal of

   Compassionate Health Care*, *3*(1), 9-26. doi: 10.1186/s40639-016-0025-8

Gilbert, P. (Ed.). (2005). *Compassion: Conceptualisations, research and use in psychotherapy.*

   Routledge.

Gilbert, P. *(2009). The compassionate mind: A new approach to life's challenges. London: Constable

   & Robinson.*

Gilbert, P. (2010). An introduction to compassion focussed therapy in cognitive behaviour therapy.

   International Journal of Cognitive Therapy, 3(2), 97–112. doi: 10.1521/ijct.2010.3.2.97

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical

   Psychology*, *53*(1), 6-41.

Gilbert, P. (2015). The evolution and social dynamics of compassion. *Social and personality

   psychology compass*, *9*(6), 239-254.

Gilbert, P. Catarino, F., Duarte, D., Matos, M., Kolts, K., Stubbs, J., Ceresatto, L., Duarte, J., Pinto-

   Gouveia,, J. & Basran, Jaskaran. (2017). *The development of compassionate engagement and

   action scales for self and others.* Manuscript submitted for publication.

Gilbert, P. & Choden (2013) *Mindful Compassion*. London: Constable Robinson.

Gilbert, P., & Irons, C. (2005). Focused therapies and compassionate mind training for shame and

   self-attacking. In: P. Gilbert (ed.). *Compassion: Conceptualisations, research and use in*

   psychotherapy (pp. 263-325). East Sussex: Routledge.

Gilbert, P., McEwan, K., Mitra, R., Franks, L., Richter, A., & Rockliff, H. (2008). Feeling safe and

   content: A specific affect regulation system? Relationship to depression, anxiety, stress, and

   self-criticism. *The Journal of Positive Psychology*, *3*(3), 182-191. doi:

   10.1080/17439760801999461

Gilbert, P., McEwan, K., Gibbons, L., Chotai, S., Duarte, J., & Matos, M. (2012). Fears of

   compassion and happiness in relation to alexithymia, mindfulness, and self-criticism.

   Psychology and Psychotherapy: Theory, Research and Practice, *85*(4), 374-390.

Gilbert, P., McEwan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three

   self-report measures. *Psychology and Psychotherapy: Theory, Research and Practice*, *84*(3),

   239-255.

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-

   criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology &*

   Psychotherapy, *13*(6), 353-379.

Goetz, J. L., Keltner, D., & Simon-Thomas, E. (2010). Compassion: An evolutionary analysis and

   empirical review. *Psychological Bulletin, 136,* 351–374.

Goodrich, J. (2012). Supporting hospital staff to provide compassionate care: Do Schwartz Center

   Rounds work in English hospitals? *Journal of the Royal Society of Medicine*, *105*(3), 117-

   122.

Goss, K., & Allan, S. (2014). The development and application of compassion-focused therapy for eating disorders (CFT-E). *British Journal of Clinical Psychology*, *53*(1), 62-77.

Grühn, D., Rebucal, K., Diehl, M., Lumley, M., & Labouvie-Vief, G. (2008). Empathy across the adult lifespan: Longitudinal and experience-sampling findings. *Emotion*, *8*(6), 753 -765.

Gu, J., Cavanagh, K., Baer, R., & Strauss, C. (2017). An empirical examination of the factor structure of compassion. *PLoS one*, *12*(2), e0172471.

Guadagnoli, E., & Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. *Psychological Bulletin*, 103 (2), 265-275.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of Qualitative Research*, *2*(163-194), 105.

Gumley, A. I., Braehler, C., Laithwaite, H., Macbeth, A., & Gilbert, P. (2010). A compassion focused model of recovery after psychosis. *International Journal of Cognitive Psychotherapy*, 3(2), 186–201. doi: 10. 1521/ijct.2010.3.2.186

Guttman, L. (1955). The determinacy of factor score matrices with implications for five other basic problems of common-factor theory 1. *British Journal of Statistical Psychology*, *8*(2), 65-81.

Hacker, T. (2008). *The relational compassion scale: development and validation of a new self-rated scale for the assessment of self-other compassion* (Doctoral dissertation). Retrieved from http://theses.gla.ac.uk/id/eprint/462.

Hardesty, D. M., & Bearden, W. O. (2004). The use of expert judges in scale development: Implications for improving face validity of measures of unobservable constructs. *Journal of Business Research*, *57*(2), 98-107.

Hatfield, D. R., & Ogles, B. M. (2004). The use of outcome measures by psychologists in clinical practice. *Professional Psychology Research and Practice*, *35*(5), 485-491.

Hatfield, D. R., & Ogles, B. M. (2007). Why some clinicians use outcome measures and others do not. *Administration and policy in mental health and mental health services research*, *34*(3), 283-291.

Hau, K. T., & Marsh, H. W. (2004). The use of item parcels in structural equation modelling: Non-normal data and small sample sizes. *British Journal of Mathematical and Statistical Psychology*, *57*(2), 327-351.

Hauser, D. J., Preston, S. D., & Stansfield, R. B. (2014). Altruism in the wild: When affiliative motives to help positive people overtake empathic motives to help the distressed. *Journal of Experimental Psychology: General*, *143*(3), 1295 -1305.

Hawkley, L. C., Masi, C. M., Berry, J. D., & Cacioppo, J. T. (2006). Loneliness is a unique predictor of age-related differences in systolic blood pressure. *Psychology and Aging*, 21, 152–164.

Hefferon, K., & Boniwell, I. (2011). *Positive psychology: Theory, research and applications*. UK: McGraw-Hill Education.

Hegney, D. G., Craigie, M., Hemsworth, D., Osseiran-Moisson, R., Aoun, S., Francis, K., & Drury, V. (2014). Compassion satisfaction, compassion fatigue, anxiety, depression and stress in registered nurses in Australia: study 1 results. *Journal of Nursing Management*, *22*(4), 506-518.

Helgeson, V. S., & Fritz, H. L. (1999). Unmitigated agency and unmitigated communion: Distinctions from agency and communion. *Journal of Research in Personality*, *33*(2), 131-158.

Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 44(2), 227-239.

Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological Measurement*, 66(3), 393-416.

Hesse, M. (1980). *Revolutions and Reconstructions in the Philosophy of Science*. Indiana University Press, Bloomington, IL.

Hobbs, M. (2016, September 15). What is test-retest reliability and why is it important? [web log post]. Retrieved from http://www.cambridgecognition.com/blog/entry/what-is-test-retest-reliability-and-why-is-it-important.

Hofmann, S. G., Grossman, P., & Hinton, D. E. (2011). Loving-kindness and compassion meditation: Potential for psychological interventions. *Clinical Psychology Review*, *31*, 1126–1132.

Howitt, D, & Cramer, D. (2011). *Introduction to Research Methods in Psychology*. Harlow, Essex: Pearson Education Ltd.

Hu, L.T. & Bentler, P.M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling*, 6 (1), 1-55.

Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*. London: Sage.

Hwang, J. Y., Plante, T., & Lackey, K. (2008). The development of the Santa Clara brief compassion scale: An abbreviation of Sprecher and Fehr's compassionate love scale. *Pastoral Psychology*, 56, 421–428.

Jackson, D. L., Gillaspy Jr, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: an overview and some recommendations. *Psychological Methods*, *14*(1), 6-23.

Jazaieri, H., Jinpa, G. T., McGonigal, K., Rosenberg, E. L., Finkelstein, J., Simon-Thomas, E., ... & Goldin, P. R. (2013). Enhancing compassion: a randomized controlled trial of a compassion cultivation training program. *Journal of Happiness Studies*, *14*(4), 1113-1126.

Jazaieri, H., McGonigal, K., Jinpa, T., Doty, J. R., Gross, J. J., & Goldin, P. R. (2014). A randomized controlled trial of compassion cultivation training: Effects on mindfulness, affect, and emotion regulation. *Motivation and Emotion*, *38*(1), 23-35.

Johnson, E. A., & O'Brien, K. A. (2013). Self-compassion soothes the savage ego-threat system: Effects on negative affect, shame, rumination, and depressive symptoms. *Journal of Social and Clinical Psychology*, *32*(9), 939-963.

Jones, C. E. (2011). An Exploration of the Construct Validity of Self-Compassion (Doctoral dissertation). Retrieved from https://ore.exeter.ac.uk/repository/bitstream/handle/10036/3240/JonesC.pdf?sequence=1

Jöreskog, K. & Long, J.S. (1993). Introduction. In K.A. Bollen & J.S. Long (eds.), *Testing Structural Equation Models*, Newbury Park, CA: Sage.

Jöreskog, K. G. & D. Sörbom. (1981). *LISREL V: Analysis of Linear Structural Relationships by the Method of Maximum Likelihood*. Chicago: National Educational Resources, Inc.

Judge, L., Cleghorn, A., McEwan, K., & Gilbert, P. (2012). An exploration of group-based compassion focused therapy for a heterogeneous range of clients presenting to a community mental health team. *International Journal of Cognitive Therapy*, *5*(4), 420-429.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31-36.

Kelly, A. C., Wisniewski, L., Martin-Wagar, C., & Hoffman, E. (2016). Group-Based Compassion-Focused Therapy as an Adjunct to Outpatient Treatment for Eating Disorders: A Pilot Randomized Controlled Trial. *Clinical Psychology & Psychotherapy*. doi: 10.1002/cpp.2018

Kim, H. Y. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics*, *38*(1), 52-54.

Kirby, J. N. (2016). Compassion interventions: The programmes, the evidence, and implications for research and practice. *Psychology and Psychotherapy: Theory, Research and Practice*. doi: 10.1111/papt.12104

Klimecki, O. M., Leiberg, S., Lamm, C., & Singer, T. (2012). Functional neural plasticity and associated changes in positive affect after compassion training. *Cerebral Cortex*, 23 (7): 1552-1561.

Klimecki, O. M., Leiberg, S., Ricard, M., & Singer, T. (2014). Differential pattern of functional brain plasticity after compassion and empathy training. *Social Cognitive and Affective Neuroscience*, *9*(6), 873-879.

Klimecki, O., & Singer, T. (2011). Empathic distress fatigue rather than compassion fatigue? Integrating findings from empathy research in psychology and social neuroscience. In B. Oakley, A. Knafo, G. Madhavan, & D. S. Wilson (Eds.), *Pathological Altruism* (pp. 368–383). New York: Oxford University Press.

Kline, R.B. (2011). *Principles and practice of structural equation modelling*. (3rd. Ed.) New York: Guilford Press.

Kolts, R. L. (2012). *The Compassionate-Mind Guide to Managing Your Anger: Using Compassion-Focused Therapy to Calm Your Rage and Heal Your Relationships*. New Harbinger Publications.

Körner, A., Coroiu, A., Copeland, L., Gomez-Garibello, C., Albani, C., Zenger, M., & Brähler, E. (2015). The role of self-compassion in buffering symptoms of depression in the general population. *PloS one*, *10*(10), e0136598. doi:10.1371/journal.pone.0136598

Kraus, S., & Sears, S. (2009). Measuring the immeasurables: Development and initial validation of the Self-Other Four Immeasurables (SOFI) scale based on Buddhist teachings on loving kindness, compassion, joy, and equanimity. *Social Indicators Research*, *92*(1), 169-181.

Krieger, T., Altenstein, D., Baettig, I., Doerig, N., & Holtforth, M. G. (2013). Self-compassion in depression: Associations with depressive symptoms, rumination, and avoidance in depressed outpatients. *Behavior Therapy*, *44*(3), 501-513.

Krosnick, J.A., & Presser, S. (2010). Question and Questionnaire design. In J.D Wright & P.V Marsden (eds.), Handbook *of Survey Research* (2nd Ed., pp- 263-314). UK: Emerald Group Publishing Limited.

Leaviss, J., & Uttley, L. (2014). Psychotherapeutic benefits of compassion-focused therapy: an early systematic review. *Psychological Medicine*, 1-19.

Lee, D. A., & James, S. (2013). *The compassionate-mind guide to recovering from trauma and PTSD: Using compassion-focused therapy to overcome flashbacks, shame, guilt, and fear*. New Harbinger Publications.

Ledoux, K. (2015). Understanding compassion fatigue: understanding compassion. *Journal of advanced nursing*, *71*(9), 2041-2050.

Lefever, S., Dal, M., & Matthiasdottir, A. (2007). Online data collection in academic research: advantages and limitations. *British Journal of Educational Technology*, *38*(4), 574-582.

Lemay Jr, E. P., & Clark, M. S. (2008). How the head liberates the heart: projection of communal responsiveness guides relationship promotion. *Journal of personality and social psychology*, *94*(4), 647-671.

Leonard, M. T., & Cano, A. (2006). Pain affects spouses too: Personal experience with pain and catastrophizing as correlates of spouse distress. *Pain*, *126*(1), 139-146.

López, A., Sanderman, R., Smink, A., Zhang, Y., van Sonderen, E., Ranchor, A., & Schroevers, M. J. (2015). A reconsideration of the Self-Compassion Scale's total score: self-compassion versus self-criticism. *PloS one*, *10*(7), e0132940.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*, 335-343.

Lown, B. A., & Manning, C. F. (2010). The Schwartz Center Rounds: evaluation of an interdisciplinary approach to enhancing patient-centered communication, teamwork, and provider support. *Academic Medicine*, *85*(6), 1073-1081.

Lown, B. A., Muncer, S. J., & Chadwick, R. (2015). Can compassionate healthcare be measured? The Schwartz Center Compassionate Care Scale™. *Patient education and counseling*, *98*(8), 1005-1010.

Lucre, K. M., & Corten, N. (2013). An exploration of group compassion-focused therapy for personality disorder. *Psychology and Psychotherapy: Theory, Research and Practice*, *86*(4), 387-400.

Lutz, A., Greischar, L. L., Rawlings, N. B., Ricard, M., & Davidson, R. J. (2004). Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. *Proceedings of the National academy of Sciences of the United States of America*, *101*(46), 16369-16373.

Lyubomirsky, S. (2001). Why are some people happier than others? The role of cognitive and motivational processes in well-being. *American psychologist*, *56*(3), 239.

MacBeth, A., & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review*, *32*(6), 545-552.

MacCallum, R.C., Browne, M.W., and Sugawara, H., M. (1996), "Power Analysis and Determination of Sample Size for Covariance Structure Modeling," *Psychological Methods,* 1 (2), 130-49.

MacCallum, R.C., Widaman, K.F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, 4 (1), 84-99.

Makransky, J., Germer, C. K., & Siegel, R. D. (2012). Compassion in Buddhist psychology. *Wisdom and compassion in psychotherapy: Deepening mindfulness in clinical practice*, 61-74.

Martins, D., Nicholas, N. A., Shaheen, M., Jones, L., & Norris, K. (2013). The development and evaluation of a compassion scale. *Journal of health care for the poor and underserved*, *24*(3), 1235-1246.

Mayden, K. D. (2012). Peer review: Publication's gold standard. *Journal of the advanced practitioner in oncology*, *3*(2), 117 -122.

McAleavey, A. A., Nordberg, S. S., Kraus, D. R., & Castonguay, L.G. (2012). Errors in treatment outcome monitoring: Implications of multidimensional and general measurements for real-world psychotherapy. *Canadian Psychology*, 53, 105_114. doi:10.1037/a0027833

McArdle, J. J. (1990). Principles versus principals of structural factor-analyses. *Multivariate Behavioral Research, 25*, 81-87.

McCrae, R. R., Kurtz, J. E., Yamagata, S., & Terracciano, A. (2011). Internal consistency, retest reliability, and their implications for personality scale validity. *Personality and social psychology review*, *15*(1), 28-50.

McDowell, I. (2006). *Measuring health: a guide to rating scales and questionnaires*. New York: Oxford university press.

McEvoy, P., & Richards, D. (2003). Critical realism: a way forward for evaluation research in nursing?. *Journal of Advanced Nursing*, *43*(4), 411-420.

McPherson, S., Hiskey, S., & Alderson, Z. (2016). Distress in working on dementia wards–A threat to compassionate care: A grounded theory study. *International journal of nursing studies*, *53*, 95-104.

Mikulincer, M., & Shaver, P. R. (2005). Attachment security, compassion and altruism. *Current Directions in Psychological Science, 14*, 34–38.

Mikulincer, M., Shaver, P. R., Gillath, O., & Nitzberg, R. A. (2005). Attachment, caregiving, and altruism: boosting attachment security increases compassion and helping. *Journal of personality and social psychology*, *89*(5), 817.

Miller, G. (2000). *The mating mind: How sexual choice shaped the evolution of human nature*. London, England: Heineman.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group. (2010). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *International Journal of Surgery*, *8*(5), 336-341.

Muris, P. (2016). A protective factor against mental health problems in youths? A critical note on the assessment of self-compassion. *Journal of child and family studies*, *25*(5), 1461-1465.

Muris, P., & Petrocchi, N. (2016). Protection or vulnerability? A meta-analysis of the relations between the positive and negative components of self-compassion and psychopathology. *Clinical psychology & psychotherapy*, 24(2), 373-383

Muthén, B., & Kaplan, D. (1985). A comparison of some methodologies for the factor analysis of

non-normal Likert variables. *British Journal of Mathematical and Statistical Psychology*,

38(2), 171-189.

Myers, R. H. (1990). Detecting and combating multicollinearity. In *R.H Myers (ed.), Classical and

modern regression with applications*, (pp. 368-423), Boston: Duxbury Press.

Neff, K.D. (2003a). The development and validation of a scale to measure self-compassion. *Self and

Identity*; 2, 223–250.

Neff, K.D. (2003b). Self-compassion: An alternative conceptualization of a healthy attitude toward

oneself. *Self and Identity*, *2*(2), 85-101.

Neff, K. D. (2016). The self-compassion scale is a valid and theoretically coherent measure of self-

compassion. *Mindfulness*, *7*(1), 264-274.

Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological

functioning. *Journal of research in personality*, *41*(1), 139-154.

Neff, K. D., & Pommier, E. (2013). The relationship between self-compassion and other-focused

concern among college undergraduates, community adults, and practicing meditators. *Self and

Identity*, *12*(2), 160-176.

Neff, K. D., & Vonk, R. (2009). Self-compassion versus global self-esteem: Two different ways of

relating to oneself. *Journal of personality*, *77*(1), 23-50.

Neff, K. D., Whittaker, T., & Karl, A. (2017). Examining the factor structure of the self-compassion

scale in four distinct populations: is the use of a total scale score justified. *Journal of

Personality Assessment*. Doi:http://dx.doi.org/10.1080/00223891.2016.1269334

Neuman, W. L. (2005). Social research methods: Quantitative and qualitative approaches (Vol. 13).

Boston: Allyn and Bacon.

Nevitt, J., & Hancock, G. R. (2001). Performance of bootstrapping approaches to model test statistics and parameter standard error estimation in structural equation modeling. *Structural equation modeling*, *8*(3), 353-377.

Norris, G., Qureshi, F., Howitt, D., & Cramer, D. (2014). *Introduction to statistics with SPSS for social science*. Routledge.

Nunnally, J. C., & Bernstein, I. H. (1994). The assessment of reliability. *Psychometric Theory*, *3*(1), 248-292.

Oei, T. P., Sawang, S., Goh, Y. W., & Mukhtar, F. (2013). Using the depression anxiety stress scale 21 (DASS-21) across cultures. *International Journal of Psychology*, *48*(6), 1018-1029.

Office for National Statistics (2011). *Statistical Bulletin: Key Statistics for local authorities in England and Wales.* Retrieved from http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/dcp1 71778_290685.pdf

Osborne, J. W., & Costello, A. B. (2009). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Pan-Pacific Management Review*, *12*(2), 131-146.

Pace, T. W., Negi, L. T., Sivilli, T. I., Issa, M. J., Cole, S. P., Adame, D. D., & Raison, C. L. (2010). Innate immune, neuroendocrine and behavioral responses to psychosocial stress do not predict subsequent compassion meditation practice time. *Psychoneuroendocrinology*, *35*(2), 310-315.

Pagani, M., Giovannetti, A. M., Covelli, V., Sattin, D., Raggi, A., & Leonardi, M. (2014). Physical and mental health, anxiety and depressive symptoms in caregivers of patients in vegetative state and minimally conscious state. *Clinical Psychology & Psychotherapy*, *21*(5), 420-426.

Pallant, J. (2016). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS* (6th ed.). London: Allen & Unwin.

Panksepp, J., & Panksepp, J. B. (2013). Toward a cross-species understanding of empathy. *Trends in neurosciences*, *36*(8), 489-496.

Patil, V. H., Singh, S. N., Mishra, S., & Donavan, D. T. (2008). Efficient theory development and factor retention criteria: Abandon the 'eigenvalue greater than one' criterion. *Journal of Business Research*, *61*(2), 162-170.

Peterson, R. A., & Merunka, D. R. (2014). Convenience samples of college students and research reproducibility. *Journal of Business Research*, *67*(5), 1035-1041.

Pilgrim, D. & Bental, R. (1999). The medicalisation of misery: A critical realist analysis of the concept of depression. *Journal of Mental Health*, 8(3), 261-274.

Plante, T. G., & Mejia, J. (2016). Psychometric properties of the Santa Clara brief compassion scale. *Pastoral Psychology*, *65*(4), 509-515.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879.

Pommier, E.A. (2010). The Compassion Scale (Doctoral dissertation). Retried from ProQuest Dissertations & Theses Global. (855633530).

Preston, S. D. (2013). The origins of altruism in offspring care. *Psychological bulletin*, *139*(6), 1305-1341.

Raes, F. (2010). Rumination and worry as mediators of the relationship between self-compassion and depression and anxiety. *Personality and Individual Differences*, *48*(6), 757-761.

Raes, F. (2011). The effect of self-compassion on the development of depression symptoms in a non-clinical sample. *Mindfulness*, *2*(1), 33-36.

Randall, D., Thomas, M., Whiting, D., & McGrath, A. (2017). Depression Anxiety Stress Scales (DASS-21): Factor Structure in Traumatic Brain Injury Rehabilitation. *The Journal of Head Trauma Rehabilitation*, 32(2), p 134-144.

Raskin, J. D. (2001). On relativism in constructivist psychology. *Journal of Constructivist Psychology*, *14*(4), 285-313.

Reed, E., Cullen, A., Gannon, C., Knight, A., & Todd, J. (2015). Use of Schwartz Centre Rounds in a UK hospice: findings from a longitudinal evaluation. *Journal of Interprofessional Care*, *29*(4), 365-366.

Rhee, Y. S., Yun, Y. H., Park, S., Shin, D. O., Lee, K. M., Yoo, H. J., ... & Kim, N. S. (2008). Depression in family caregivers of cancer patients: the feeling of burden as a predictor of depression. *Journal of Clinical Oncology*, *26*(36), 5890-5895.

Roeser, R. W., & Eccles, J. S. (2015). Mindfulness and compassion in human development: Introduction to the special section. *Developmental psychology*, *51*(1), 1-6.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of personality and social psychology*, *57*(6), 1069 -1081.

Sale, J. E., & Brazil, K. (2004). A strategy to identify critical appraisal criteria for primary mixed-method studies. *Quality & quantity*, *38*(4), 351-365.

Schantz, M. L. (2007). Compassion: a concept analysis. *Nursing forum*, 42, (2), 48-55.

Schmitt, T. A. (2011). Current methodological considerations in exploratory and confirmatory factor analysis. *Journal of Psychoeducational Assessment*, *29*(4), 304-321.

Sears, D. O. (1986). College sophomores in the laboratory: Influences of a narrow data base on social psychology's view of human nature. *Journal of personality and social psychology*, *51*(3), 515 -530.

Seligman, M. E., & Csikzentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5-14.

Shapira, L. B., & Mongrain, M. (2010). The benefits of self-compassion and optimism exercises for individuals vulnerable to depression. *The Journal of Positive Psychology*, *5*(5), 377-389.

Sheehan, K. B. (2001). E-mail survey response rates: A review. *Journal of Computer-Mediated Communication*, 6 (2). doi: 10.1111/j.1083-6101.2001.tb00117.x

Shimokawa, K., Lambert, M. J., & Smart, D. (2010). Enhancing treatment outcome of patients at risk of treatment failure: Meta-analytic and mega-analytic review of a psychotherapy quality assurance system. *Journal of Consulting & Clinical Psychology*, 78, 298-311. doi:10.1037/a0019247

Sprecher, S., & Fehr, B. (2005). Compassionate love for close others and humanity. *Journal of Social and Personal Relationships*, *22*(5), 629-651.

Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, *45*(4), 249-257.

Steiger, J.H. (1990). Structural model evaluation and modification. *Multivariate Behavioural Research*, 25, 214-12.

Steiger, J.H. (2007). Understanding the limitations of global fit assessment in structural equation modelling. *Personality and Individual Differences*, 42 (5), 893-98.

Stevens, J. P. (1996). *Applied multivariate statistics for the social sciences* (3rd ed). Mahwah, NJ: Lawrence Erlbaum

Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). Hillsdale, NS: Erlbaum.

Storey, J., & Holti, R. (2013). *Towards a New Model of Leadership for the NHS*. NHS Leadership Academy. Retrieved from http://www.leadershipacademy.nhs.uk/wp-content/uploads/2013/05/Towards-a-New-Model-of-Leadership-2013.pdf

Strauss, C., Taylor, B. L., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. *Clinical Psychology Review*, *47*, 15-27.

Streiner, D. L. (2003). Starting at the beginning: an introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment*, *80*(1), 99-103.

Tabachnick, B.G., & Fidell, L.S. (2001). Using Multivariate Statistics (4th ed.) Boston: Allyn & Bacon.

Tabachnick, B. G., & Fidell, L. S. (2007). Multivariate analysis of variance and covariance. *Using Multivariate Statistics*, *3*, 402-407.

Tabachnick, B.G. and Fidell, L.S. (2007). *Using Multivariate Statistics* (5th ed.). New York: Allyn and Bacon.

Terwee, C. B., Bot, S. D., de Boer, M. R., van der Windt, D. A., Knol, D. L., Dekker, J., ... & de Vet, H. C. (2007). Quality criteria were proposed for measurement properties of health status questionnaires. *Journal of Clinical Epidemiology*, *60*(1), 34-42.

Thompson, A. (2013). How Schwartz rounds can be used to combat compassion fatigue: Alison Thompson reflects on an initiative that helps to maintain staff wellbeing and quality of patient care. *Nursing Management*, *20*(4), 16-20.

Tourangeau, R., Conrad, F., & Couper, M. (2013). The science of web surveys. Oxford: Oxford University Press.

Van Dam, N. T., Sheppard, S. C., Forsyth, J. P., & Earleywine, M. (2011). Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *Journal of anxiety disorders*, *25*(1), 123-130.

Van der Cingel, M. (2014). Compassion: The missing link in quality of care. *Nurse education today*, *34*(9), 1253-1257.

Velicer, W. F., Eaton, C. A., & Fava, J. L. (2000). Construct explication through factor or component analysis: A review and evaluation of alternative procedures for determining the number of factors or components. In R.D. Goffin, & E. Helmes, (Eds.), *Problems and solutions in human assessment* (pp. 41-71), Massachusetts: Kluwer Academic Publishers.

Vet, H. C. D., Adèr, H. J., Terwee, C. B., & Pouwer, F. (2005). Are factor analytical techniques used appropriately in the validation of health status questionnaires? A systematic review on the quality of factor analysis of the SF-36. *Quality of Life Research*, *14*(5), 1203-1218.

Vitaliano, P. P., Zhang, J., & Scanlan, J. M. (2003). Is caregiving hazardous to one's physical health? A meta-analysis. *Psychological bulletin*, *129*(6), 946 – 972.

Wang, S. (2005). A conceptual framework for integrating research related to the physiology of compassion and the wisdom of Buddhist teachings. In P. Gilbert (ed.), *Compassion; Conceptualisations, research and use in psychotherapy* (pp. 75-120), East Sussex: Routledge.

Wang, X., Cai, L., Qian, J., & Peng, J. (2014). Social support moderates stress effects on depression. *International Journal of Mental Health Systems*, *8,* 41. doi: 10.1186/1752-4458-8-41

Wayment, H. A., Bauer, J. J., & Sylaska, K. (2015). The quiet ego scale: Measuring the compassionate self-identity. *Journal of Happiness Studies*, *16*(4), 999-1033.

Weiss, R. B., Aderka, I. M., Lee, J., Beard, C., & Björgvinsson, T. (2015). A comparison of three brief depression measures in an acute psychiatric population: Ces-d-10, qids-sr, and dass-21-dep. *Journal of Psychopathology and Behavioral Assessment*, *37*(2), 217-230.

West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with nonnormal variables: Problems and remedies. In R. H. Hoyle (Ed.), Structural equation modeling: Concepts, issues, and applications. Thousand Oaks, CA: Sage.

Wheaton, B., Muthen, B., Alwin, D., F., and Summers, G. (1977), "Assessing Reliability and Stability in Panel Models," Sociological Methodology, 8 (1), 84-136.

Whomsley, S. (2014). Compassion, Organisation and Leadership. *Clinical Psychology Forum* (No. 263, pp 46-48). The British Psychological Society.

Widaman, K. F. (2007). Common factors versus components: Principals and principles, errors and misconceptions. In R. Cudeck & R. C. MacCallum (Eds.), *Factor analysis at 100: Historical developments and future directions* (pp. 177-203). Mahwah, NJ: Lawrence Erlbaum.

Wilkinson, P., Caudle, H., Nargis, F., & Hagger, M. (2015). Supporting compassionate care: lessons from introducing Schwartz Rounds into a district general hospital. *Future Hospital Journal*, *2*(2), 13-s13.

Williams, M. J., Dalgleish, T., Karl, A., & Kuyken, W. (2014). Examining the factor structures of the Five Facet Mindfulness Questionnaire and the Self-Compassion Scale. *Psychological assessment*, *26*(2), 407-418.

Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and quality of life outcomes*, *9*(1), 8. Doi: 10.1186/1477-7525-9-8

Wright, K. B. (2005), Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web

Survey Services. *Journal of Computer-Mediated Communication*, 10: 00. doi:10.1111/j.1083-6101.2005.tb00259.x

Yu, J., & Kirk, M. (2009). Evaluation of empathy measurement tools in nursing: Systematic review. *Journal of advanced nursing*, *65*(9), 1790-1806.

Zessin, U., Dickhäuser, O., & Garbade, S. (2015). The relationship between self-compassion and well-being: A meta-analysis. *Applied Psychology: Health and Well-Being*, *7*(3), 340-364.

Zygmont, C., & Smith, M. R. (2014). Robust factor analysis in the presence of normality violations, missing data, and outliers: Empirical questions and possible solutions. *Quantitative Methods for Psychology*, *10*(1), 40-55.

Appendices

Appendix A

Quality Criteria for Measurement Properties of Health Status Questionnaires

Property	Definition	Quality Criteria ([a], [b])
1. Content validity	The extent to which the domain of interest is comprehensively sampled by the items in the questionnaire	2/+ A clear description is provided of the measurement aim, the target population, the concepts that are being measured, and the item selection AND target population and (investigators OR experts) were involved in item selection; 1/? A clear description of above-mentioned aspects is lacking OR only target population involved OR doubtful design or method; 0/- No target population involvement; No information found on target population involvement.
2. Internal consistency	The extent to which items in a (sub)scale are intercorrelated, thus measuring the same construct	2/+ Factor analyses performed on adequate sample size (7* items and >100) AND Cronbach's alpha(s) calculated per dimension AND Cronbach's alpha(s) between 0.70 and 0.95; 1/? No factor analysis OR doubtful design or method; 0/- Cronbach's alpha(s) < 0.70 despite adequate design and

		method; No information found on internal consistency.
3. Criterion validity	The extent to which scores on a particular questionnaire relate to a gold standard	2/+ Convincing arguments that gold standard is ''gold'' AND correlation with gold standard >0.70; 1/? No convincing arguments that gold standard is ''gold'' OR doubtful design or method; 0/- Correlation with gold standard <0.70, despite adequate design and method; No information found on criterion validity.
4. Construct validity	The extent to which scores on a particular questionnaire relate to other measures in a manner that is consistent with theoretically derived hypotheses concerning the concepts that are being measured	2/+ Specific hypotheses were formulated AND at least 75% of the results are in accordance with these hypotheses; 1/? Doubtful design or method (e.g., no hypotheses); 0/- Less than 75% of hypotheses were confirmed, despite adequate design and methods; No information found on construct validity.
5. Reproducibility	5.1. Agreement The extent to which the scores on repeated measures are close to	2/+ MIC/SDC OR MIC outside the LOA OR convincing arguments that agreement is acceptable;

	each other (absolute measurement error)	1/? Doubtful design or method OR (MIC not defined AND no convincing arguments that agreement is acceptable); 0/- MIC>SDC OR MIC equals or inside LOA, despite adequate design and method; No information found on agreement.
	5.2. Reliability The extent to which patients can be distinguished from each other, despite measurement errors (relative measurement error)	2/+ICC or weighted Kappa>0.70; 1/? Doubtful design or method (e.g., time interval not mentioned); 0/- ICC or weighted Kappa!0.70, despite adequate design and method; No information found on reliability.
6. Responsiveness	The ability of a questionnaire to detect clinically important changes over time	2/+SDC or SDC,MIC OR MIC outside the LOA OR RRO1.96 OR AUC>0.70; 1/? Doubtful design or method; 0/- SDC or SDC>MIC OR MIC equals or inside LOA OR RR<1.96 OR AUC <0.70, despite adequate design and methods; No information found on responsiveness.

7. Floor and ceiling effects	The number of respondents who achieved the lowest or highest possible score	2/+ <15% of the respondents achieved the highest or lowest possible scores; 1/? Doubtful design or method; 0/- 15% of the respondents achieved the highest or lowest possible scores, despite adequate design and methods; No information found on interpretation.
8. Interpretability	The degree to which one can assign qualitative meaning to quantitative scores	2/+ Mean and SD scores presented of at least four relevant subgroups of patients and MIC defined; 1/? Doubtful design or method OR less than four subgroups OR no MIC defined; 0/ - No information found on interpretation.

Note: MIC = minimal important change; SDC = smallest detectable change; LOA = limits of agreement; ICC = Intraclass correlation; SD= standard deviation; AUC = area under curve. Adapted from "Quality criteria were proposed for measurement properties of health status questionnaires," by C.B. Terwee, S.D. Bot, M.R. de Boer, D.A. van der Windt, D.L. Knol, J. Dekker.,… H.C. de Vet, 2007, *Journal of Clinical Epidemiology*, *60*(1), p.35.

[a] 2/+ - = positive rating; 1/? = indeterminate rating; 0/- = negative rating or no information available.

[b] Doubtful design or method = lacking of a clear description of the design or methods of the study, sample size smaller than 50 subjects (should be at least 50 in every (subgroup) analysis), or any important methodological weakness in the design or execution of the study.

Appendix B

Information sheet containing a link to online survey for recruitment via email

Hello,

My name is Simone Lindsey and I am currently on the Clinical Psychology Doctorate training
programme at the University of Essex.

I would like to invite you to take part in my thesis study on compassion. Being compassionate
is an aspect of human life that we are all familiar with but it is unknown to what extent the
general population experience compassion. This study is about trying to find out how
compassionate people generally feel and to see whether or not this may be linked to other
factors such as well-being.

Anyone over the age of 18 can take part in this study so if you are interested then please click
on the link below. You will be given some further information about the study and asked to
provide your consent to participate. You will then be invited to complete the survey online
which should take approximately 20-25 minutes.

This study has been approved by the University of Essex Faculty of Health and Human
Sciences research ethics committee.

**Please feel free to forward this email on to anyone you feel may be interested in taking
part. Thank you!**

https://essex.eu.qualtrics.com/SE/?SID=SV_5aL05djvch6V79z

Appendix C

Online forum/social media advertisement

Hi, I would like to invite you to take part in my study on compassion. Being compassionate is an aspect of human life that we are all familiar with but it is unknown to what extent the general population experience compassion. This study is about trying to find out how compassionate people generally feel and to see whether or not there are any factors which may influence this such as wellbeing.

Anyone over the age of 18 can take part in this study so if you are interested **then please click on the link below**. You will be given some further information about the study and asked to provide your consent to participate. You will then be invited to complete the survey online. It should take approximately 20-25 minutes and forms part of a doctoral thesis in clinical psychology at the University of Essex.

Please feel free to share this link with anyone you feel may be interested in taking part. Thank you.

https://essex.eu.qualtrics.com/SE/?SID=SV_5aL05djvch6V79z

Appendix D

Poster Advertisement

I would like to invite you to take part in my study on compassion. Being compassionate is an aspect of human life that we are all familiar with but it is unknown to what extent the general population experience compassion. This study is about trying to find out how compassionate people generally feel and to see whether or not there are any factors which may influence this such as well-being.

Anyone over the age of 18 can take part in this study so if you are interested then please tear off one of the slips below and contact me expressing your interesting taking part. Following this you will be sent an email containing a link to the questionnaire. Before you can complete the questionnaire you will be asked to read some further information about the study from which you can then decide whether or not you would still like to take part.

It should take about 20-25 minutes to complete and forms part of a doctoral thesis in clinical psychology at the University of Essex.

Please feel free to share this with anyone you feel may be interested in taking part.

| slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk | slinds@essex.ac.uk |

Appendix E

Participant information sheet

Examining the Psychometric Properties of the Compassionate Engagement and Action Scales in a Community Sample

Hello, my name is Simone Lindsey and I am currently on the Clinical Psychology Doctorate training programme at the University of Essex.

I would like to invite you to take part in my thesis study on compassion. Being compassionate is an aspect of human life that we are all familiar with but it is unknown to what extent the general population experience compassion. This study is about trying to find out how compassionate people generally feel and to see whether or not this may be linked to other factors such as well-being.

Anyone over the age of 18 can take part in this study and before you consent to participating we ask that you please read the following information.

How long will the questionnaire take?

This will vary from person to person, but should take approximately 20-25 minutes.

Do I have to take part?

It is up to you to decide whether or not to take part. You will be asked to complete a consent form at the start of the questionnaire should you wish to participate. If you decide to take part you are still free to stop the survey at any time and without giving a reason.

What are the possible benefits of taking part?

The information we get from you and other participants' responses will be collated. This information will add to the research base relating to our understanding of compassion and how to help develop ways to support people in feeling more compassionate towards themselves and others.

What if there are any concerns about this project?

If you have any questions or queries about taking part in the study, please feel free to contact me (Simone Lindsey, slinds@essex.ac.uk). My supervisors are Dr Leanne Andrews, Dr Syd

Hiskey & Dr Chris Irons. If you wish to make a complaint or raise concerns about any aspect of this study and do not wish to speak to me, you can contact:

Dr Leanne Andrews

Academic Supervisor

Address: School of Health and Human sciences, Kimmy Eldridge Building, University of Essex, Wivenhoe Park, Colchester, Essex, CO4 3SQ

Phone: 01206 874466

Email: landre@essex.ac.uk

Will my taking part in the study be kept confidential?

Yes. In line with the Data Protection Act 1998, all information you provide will be kept strictly confidential. You will not be asked to provide personally identifiable information such as your name or address but will be asked to state some demographic details such as age. The information and written responses you provide will be both anonymous and securely stored.

There will be an opportunity at the end of the survey to take part in an additional survey. This involves repeating a small part of the survey again in 3 weeks time. At this point if you wish to participate in this then you will be asked to provide an email address for the survey link to be sent to. Your email address would be stored separately from the data and therefore your answers would not be matched to your email address.

This study has been approved by the University of Essex Faculty of Health and Human Sciences research ethics committee.

What will happen if I don't want to complete the survey?

Your participation is voluntary and you are free to withdraw at any time, without giving any reason. If you do not complete the survey then your responses will not be submitted and will

not count towards the completed data. Once you have submitted the survey however, it will not be possible to withdraw your responses.

What will happen to the results of the research study?

 The results of this study will be shared with other researchers in the field and published in the Albert Sloman Library at the University of Essex. The research may also be submitted to a journal for publication.

If you would like to complete the questionnaire then please continue by clicking on the arrow button in the right hand corner below.

Once again, thank you for your help.

Simone Lindsey

Trainee Clinical Psychologist

School of Health and Human Sciences

University of Essex

Colchester

CO4 3SQ

Email: slinds@essex.ac.uk

Appendix F

Consent Form

Please indicate by ticking in all of the boxes if you agree with the following statements:

❑   I confirm that I have read and understand the participant information sheet and that I have had an opportunity to consider my participation in the study and ask any questions.

❑   I understand that my participation is voluntary and can be withdrawn at any time before final submission of my completed survey.

❑   I understand that the results may be circulated and published.

❑   I confirm that I am over the age of 18 years.

❑   I agree to take part in the study.

Appendix G

Demographic Information

The following questions will ask you about some basic demographic information. None of the information will affect your confidentiality or anonymity. Please be as honest as you can when answering. Please state your age in years:

What is your gender?

❍ Male (1)
❍ Female (2)

Please choose one of the following options which best describes your ethnic group:

❍ White English/Welsh/Scottish/Northern Irish/British (1)
❍ White Irish (2)
❍ White Gypsy or Irish Traveller (3)
❍ Any other White background, please describe (4) _____
❍ White and Black Caribbean (5)
❍ White and Black African (6)
❍ White and Asian (7)
❍ Any other Mixed/Multiple ethnic background, please describe (8) _____
❍ Indian (9)
❍ Pakistani (10)
❍ Bangladeshi (11)
❍ Chinese (12)
❍ Any other Asian background, please describe (13) _____
❍ Black African (14)
❍ Black Carribean (15)
❍ Any other Black/African/Caribbean background, please describe (16) _____
❍ Arab (17)
❍ Any other ethnic group, please describe (18) _____

What is your country of birth?

- ○ Please select below… (1)
- ○ United Kingdom (184)
- ○ Afghanistan (2)
- ○ Albania (3)
- ○ Algeria (4)
- ○ Andorra (5)
- ○ Angola (6)
- ○ Antigua and Barbuda (7)
- ○ Argentina (8)
- ○ Armenia (9)
- ○ Australia (10)
- ○ Austria (11)
- ○ Azerbaijan (12)
- ○ Bahamas (13)
- ○ Bahrain (14)
- ○ Bangladesh (15)
- ○ Barbados (16)
- ○ Belarus (17)
- ○ Belgium (18)
- ○ Belize (19)
- ○ Benin (20)
- ○ Bhutan (21)
- ○ Bolivia (22)
- ○ Bosnia and Herzegovina (23)
- ○ Botswana (24)
- ○ Brazil (25)
- ○ Brunei (26)
- ○ Bulgaria (27)
- ○ Burkina Faso (28)
- ○ Burma/Myanmar (29)
- ○ Burundi (30)
- ○ Cambodia (31)
- ○ Cameroon (32)
- ○ Canada (33)
- ○ Cape Verde (34)
- ○ Central African Republic (35)
- ○ Chad (36)
- ○ Chile (37)
- ○ China (38)
- ○ Colombia (39)
- ○ Comoros (40)
- ○ Congo (41)
- ○ Congo, Democratic Republic of (42)

- ❍ Costa Rica (43)
- ❍ Cote d'Ivoire/Ivory Coast (44)
- ❍ Croatia (45)
- ❍ Cuba (46)
- ❍ Cyprus (47)
- ❍ Czech Republic (48)
- ❍ Denmark (49)
- ❍ Djibouti (50)
- ❍ Dominica (51)
- ❍ Dominican Republic (52)
- ❍ East Timor (53)
- ❍ Ecuador (54)
- ❍ Egypt (55)
- ❍ El Salvador (56)
- ❍ Equatorial Guinea (57)
- ❍ Eritrea (58)
- ❍ Estonia (59)
- ❍ Ethiopia Fiji (60)
- ❍ Finland (61)
- ❍ France (62)
- ❍ Gabon (63)
- ❍ Gambia (64)
- ❍ Georgia (65)
- ❍ Germany (66)
- ❍ Ghana (67)
- ❍ Greece (68)
- ❍ Grenada (69)
- ❍ Guatemala (70)
- ❍ Guinea (71)
- ❍ Guinea-Bissau (Bissau) (AF) (72)
- ❍ Guyana (73)
- ❍ Haiti (74)
- ❍ Honduras (75)
- ❍ Hungary (76)
- ❍ Iceland (77)
- ❍ India (78)
- ❍ Indonesia (79)
- ❍ Iran (80)
- ❍ Iraq (81)
- ❍ Ireland (82)
- ❍ Israel (83)
- ❍ Italy (84)
- ❍ Jamaica (85)
- ❍ Japan (86)
- ❍ Jordan (87)

- ○ Kazakstan (88)
- ○ Kenya (89)
- ○ Kiribati (90)
- ○ Korea, North (91)
- ○ Korea, South (92)
- ○ Kuwait (93)
- ○ Kyrgyzstan (94)
- ○ Laos (95)
- ○ Latvia (96)
- ○ Lebanon (97)
- ○ Lesotho (98)
- ○ Liberia (99)
- ○ Libya (100)
- ○ Liechtenstein (101)
- ○ Lithuania (102)
- ○ Luxembourg (103)
- ○ Macedonia (104)
- ○ Madagascar (105)
- ○ Malawi (106)
- ○ Malaysia (107)
- ○ Maldives (108)
- ○ Mali (109)
- ○ Malta (110)
- ○ Marshall Islands (111)
- ○ Mauritania (112)
- ○ Mauritius (113)
- ○ Mexico (114)
- ○ Micronesia (115)
- ○ Moldova (116)
- ○ Monaco (117)
- ○ Mongolia (118)
- ○ Montenegro (119)
- ○ Morocco (120)
- ○ Mozambique (121)
- ○ Namibia (122)
- ○ Nauru (123)
- ○ Nepal (124)
- ○ Netherlands (125)
- ○ New Zealand (126)
- ○ Nicaragua (127)
- ○ Niger (128)
- ○ Nigeria (129)
- ○ Norway (130)
- ○ Oman (131)
- ○ Pakistan (132)

❍ Palau (133)

❍ Panama (134)

❍ Papua New Guinea (135)

❍ Paraguay (136)

❍ Peru (137)

❍ Philippines (138)

❍ Poland (139)

❍ Portugal (140)

❍ Qatar (141)

❍ Romania (142)

❍ Russian Federation (143)

❍ Rwanda (144)

❍ Saint Kitts and Nevis (145)

❍ Saint Lucia (146)

❍ Saint Vincent and the Grenadines (147)

❍ Samoa (148)

❍ San Marino (149)

❍ Sao Tome and Principe (150)

❍ Saudi Arabia (151)

❍ Senegal (152)

❍ Serbia (153)

❍ Seychelles (154)

❍ Sierra Leone (155)

❍ Singapore (156)

❍ Slovakia (157)

❍ Slovenia (158)

❍ Solomon Islands (159)

❍ Somalia (160)

❍ South Africa (161)

❍ Spain (162)

❍ Sri Lanka (163)

❍ Sudan (164)

❍ Suriname (165)

❍ Swaziland (166)

❍ Sweden (167)

❍ Switzerland (168)

❍ Syria (169)

❍ Taiwan (170)

❍ Tajikistan (171)

❍ Tanzania (172)

❍ Thailand (173)

❍ Togo (174)

❍ Tonga (175)

❍ Trinidad and Tobago (176)

❍ Tunisia (177)

- ❍ Turkey (178)
- ❍ Turkmenistan (179)
- ❍ Tuvalu (180)
- ❍ Uganda (181)
- ❍ Ukraine (182)
- ❍ United Arab Emirates (183)
- ❍ United States (185)
- ❍ Uruguay (186)
- ❍ Uzbekistan (187)
- ❍ Vanuatu (188)
- ❍ Vatican City (189)
- ❍ Venezuela (190)
- ❍ Vietnam (191)
- ❍ Yemen (192)
- ❍ Zambia (193)
- ❍ Zimbabwe (194)
- ❍ Other (195)
- ❍ Prefer not to say (196)

In which country do you reside?

○ Please select below… (1)

Options same as previous question.

How long have you lived in the UK (in years)?

Which of the following qualifications do you have?

Tick every box that applies. If your UK qualification is not listed then tick the nearest equivalent. If you have qualifications gained from outside of the UK, tick 'foreign qualifications box' and the nearest UK equivalent (if known).

❑ No qualifications (1)
❑ 1-4 GCSEs (any grades) or equivalent (e.g. Level 1 qualifications 1-4 O Levels/CSE, Entry Level, Foundation Diploma). (10)
❑ NVQ level 1, Foundation GNVQ, Basic/Essential Skills. (3)
❑ 5+ GCSEs or equivalent (e.g. 5+ O Level (Passes)/CSEs (Grade 1)/GCSEs (Grades A*-C), School Certificate, 1 A Level/ 2-3 AS Levels/VCEs, Intermediate/Higher Diploma, Welsh Baccalaureate Intermediate Diploma). (4)
❑ NVQ level 2, Intermediate GNVQ, City and Guilds Craft, BTEC First/General Diploma, RSA Diploma. (5)
❑ Apprenticeship (6)
❑ 2+ A-levels or equivalent (e.g. 2+ A Levels/VCEs, 4+ AS Levels, Higher School Certificate, Progression/Advanced Diploma, Welsh Baccalaureate Advanced Diploma). (7)
❑ NVQ Level 3; Advanced GNVQ, City and Guilds Advanced Craft, ONC, OND, BTEC National, RSA Advanced Diploma. (8)
❑ Degree level or above (e.g. Degree (for example BA, BSc), Higher Degree (for example MA, PhD, PGCE). (15)
❑ NVQ Level 4-5, HNC, HND, RSA Higher Diploma, BTEC Higher level, Foundation degree (NI). (16)
❑ Professional qualifications (for example teaching, nursing, accountancy). (13)
❑ Other qualifications e.g. Vocational/Work-related Qualifications. (14)
❑ Foreign Qualifications/Qualifications gained outside the UK. (12)

Please indicate your occupation or employment status:

- ○ Managers, Directors and Senior Officials (1)
- ○ Professional Occupations (2)
- ○ Associate Professional and Technical Occupations (3)
- ○ Administrative and Secretarial Occupations (4)
- ○ Skilled Trades Occupations (5)
- ○ Caring, Leisure and Other Service Occupations (6)
- ○ Sales and Customer Service Occupations (7)
- ○ Process, Plant and Machine Operatives (8)
- ○ Elementary Occupations (9)
- ○ Other (10)
- ○ Retired (11)
- ○ Unemployed (12)
- ○ Prefer not to say (13)

Please can you select from the following drop down menu an option to indicate your current marital or same sex civil partnership status.

- ○ Single (1)
- ○ Married (2)
- ○ Separated, but still legally married (3)
- ○ Divorced (4)
- ○ Widowed (5)
- ○ In a registered same-sex civil partnership (6)
- ○ Separated, but still legally in a same-sex civil partnership (7)
- ○ Formerly in a same-sex civil partnership which is now legally dissolved (8)
- ○ Surviving partner from a same-sex civil partnership (9)

To what extent would you agree with the following statement?

I have had a lot of experience using mindfulness and/or compassion practices.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Agree nor Disagree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

Appendix H

The Compassion Engagement and Action Scales

Self-Compassion

When things go wrong for us and we become distressed by setbacks, failures, disappointments or losses, we may cope with these in different ways. We are interested in the degree to which people can be compassionate with themselves. We define compassion as "a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it." This means there are two aspects to compassion. The first is the ability to be motivated to engage with things/feelings that are difficult as opposed to trying to avoid or supress them. The second aspect of compassion is the ability to focus on what is helpful to us. Just like a doctor with his/her patient. The first is to be motivated and able to pay attention to the pain and (learn how to) make sense of it. The second is to be able to take the action that will be helpful. Below is a series of questions that ask you about these two aspects of compassion. Therefore read each statement carefully and think about how it applies to you if you become distressed. Please rate the items using the following rating scale:

Never   Always

1   2   3   4   5   6   7   8   9   10

Q14 Section 1 – These are questions that ask you about how motivated you are, and able to engage with distress when you experience it. So: When I am upset or distressed by things...

_____ 1. I am motivated to engage and work with my distress when it arises. (1)
_____ 2. I notice, and am sensitive to my distressed feelings when they arise in me. (2)
_____ 3. I avoid thinking about my distress and try to distract myself and put it out of my mind. (3)
_____ 4. I am emotionally moved by my distressed feelings or situations. (4)
_____ 5. I tolerate the various feelings that are part of my distress. (5)
_____ 6. I reflect on and make sense of my feelings of distress. (6)
_____ 7. I do not tolerate being distressed. (7)
_____ 8. I am accepting, non-critical and non-judgemental of my feelings of distress. (8)

Q15   Section 2 – These questions relate to how you actively cope in compassionate ways with emotions, thoughts and situations that distress you. So: When I'm distressed or upset by things...

_____ 1. I direct my attention to what is likely to be helpful to me. (1)
_____ 2. I think about and come up with helpful ways to cope with my distress. (2)
_____ 3. I don't know how to help myself. (3)
_____ 4. I take the actions and do the things that will be helpful to me. (4)
_____ 5. I create inner feelings of support, helpfulness and encouragement. (5)

Compassion to Others

When things go wrong for other people and they become distressed by setbacks, failures, disappointments or losses, we may cope with their distress in different ways. We are interested in the degree to which people can be compassionate to others. We define compassion as "a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it." This means there are two aspects to compassion. The first is the ability to be motivated to engage with things/feelings that are difficult as opposed to trying to avoid or supress them. The second aspect of compassion is the ability to focus on what is helpful. Just like a doctor with his/her patient. The first is to be motivated and able to pay attention to the pain and (learn how to) make sense of it. The second is to be able to take the action that will be helpful. Below is a series of questions that ask you about these two aspects of compassion. Therefore read each statement carefully and think about how it applies to you when people in your life become distressed. Please rate the items using the following rating scale:

   Never   Always

1   2   3   4   5   6   7   8   9   10

Q17 Section 1 – These are questions that ask you about how motivated you are, and able to engage with other people's distress when they are experiencing it. So: When others are distressed or upset by things…

_____ 1. I am motivated to engage and work with other peoples' distress when it arises. (1)
_____ 2. I notice and am sensitive to distress in others when it arises. (2)
_____ 3. I avoid thinking about other peoples' distress, try to distract myself and put it out of my mind. (3)
_____ 4. I am emotionally moved by expressions of distress in others. (4)
_____ 5. I tolerate the various feelings that are part of other people's distress. (5)
_____ 6. I reflect on and make sense of other people's distress. (6)
_____ 7. I do not tolerate other peoples' distress. (7)
_____ 8. I am accepting, non-critical and non-judgemental of others people's distress. (8)

Q18 Section 2 – These questions relate to how you actively respond in compassionate ways when other people are distressed. So: When others are distressed or upset by things…

_____ 1. I direct attention to what is likely to be helpful to others. (1)
_____ 2. I think about and come up with helpful ways for them to cope with their distress. (2)
_____ 3. I don't know how to help other people when they are distressed. (3)
_____ 4. I take the actions and do the things that will be helpful to others. (4)
_____ 5. I express feelings of support, helpfulness and encouragement to others. (5)

Compassion from Others

When things go wrong for us and we become distressed by setbacks, failures, disappointments or losses, others may cope with our distress in different ways. We are interested in the degree to which you feel that important people in your life can be compassionate to your distress. We define compassion as "a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it." This means there are two aspects to compassion. The first is the ability to be motivated to engage with things/feelings that are difficult as opposed to trying to avoid or supress them. The second aspect of compassion is the ability to focus on what is helpful to us or others. Just like a doctor with his/her patient. The first is to be motivated and able to pay attention to the pain and (learn how to) make sense of it. The second is to be able to take the action that will be helpful. Below is a series of questions that ask you about these two aspects of compassion. Therefore read each statement carefully and think about how it applies to the important people in your life when you become distressed. Please rate the items using the following rating scale:

Never   Always

1   2   3   4   5   6   7   8   9   10

Section 1 – These are questions that ask you about how motivated you think others are, and how much they engage with your distress when you experience it. So: When I'm distressed or upset by things…

_____ 1. Other people are actively motivated to engage and work with my distress when it arises. (1)

_____ 2. Others notice and are sensitive to my distressed feelings when they arise in me. (2)

_____ 3. Others avoid thinking about my distress, try to distract themselves and put it out of their mind. (3)

_____ 4. Others are emotionally moved by my distressed feelings. (4)

_____ 5. Others tolerate my various feelings that are part of my distress. (5)

_____ 6. Others reflect on and make sense of my feelings of distress. (6)

_____ 7. Others do not tolerate my distress. (7)

_____ 8. Others are accepting, non-critical and non-judgemental of my feelings of distress. (8)

Q21 Section 2 – These questions relate to how others actively cope in compassionate ways with emotions and situations that distress you. So: When I'm distressed or upset by things…

_____ 1. Others are able to direct their attention to what is likely to be helpful to me. (1)

_____ 2. Others are able to think about and come up with helpful ways for me to cope with my distress. (2)

_____ 3. Others don't know how to help me when I am distressed (3)

_____ 4. Others are able to take the actions and do the things that will be helpful to me. (4)

_____ 5. Others are able to treat me with feelings of support, helpfulness and encouragement. (5)

Appendix I

Self-compassion scale

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

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

Almost				Almost
never				always
1	2	3	4	5

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.

_____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.

_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.

_____ 5. I try to be loving towards myself when I'm feeling emotional pain.

_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.

_____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.

_____ 8. When times are really difficult, I tend to be tough on myself.

_____ 9. When something upsets me I try to keep my emotions in balance.

_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.

_____ 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____ 14. When something painful happens I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the human condition.

_____ 16. When I see aspects of myself that I don't like, I get down on myself.

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

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

_____ 19. I'm kind to myself when I'm experiencing suffering.

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

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

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

_____ 23. I'm tolerant of my own flaws and inadequacies.

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

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

_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

Appendix J

Depression, Anxiety and Stress Scale-21

DASS21

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.

The rating scale is as follows:

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

18	I felt that I was rather touchy	0 1 2 3
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)	0 1 2 3
20	I felt scared without good reason	0 1 2 3
21	I felt that life was meaningless	0 1 2 3

Appendix K

Santa Clara Brief Compassion Scale

Santa Clara Brief Compassion Scale

Please answer the following questions honestly and quickly using the scale below:

1	2	3	4	5	6	7

not at all true of me   very true of me

_____ 1. When I hear about someone (a stranger) going through a difficult time, I feel a

great deal of compassion for him or her.

_____ 2. I tend to feel compassion for people, even though I do not know them.

_____ 3. One of the activities that provide me with the most meaning to my life is helping

others in the world when they need help.

_____ 4. I would rather engage in actions that help others, even though they are strangers,

than engage in actions that would help me.

_____ 5. I often have tender feelings toward people (strangers) when they seem to be in

need.

Appendix L

Types of Positive Affect Scale

INSTRUCTIONS: Below are a series of words that describe different positive emotions. Some of these emotions relate to feeling lively, energised and excited, whereas others relate to feelings of being relaxed, calm and peaceful. We are interested in the degree to which you commonly experience these feelings. On the left hand side of the emotion words we would like you to rate how characteristic these feelings are of you by using the following scale:

Not Characteristic of me   Fairly Characteristic of me   Very Characteristic of me

0   1   2   3   4

How Characteristic?

0 1 2 3 4 Secure

0 1 2 3 4 Calm

0 1 2 3 4 Active

0 1 2 3 4 Laid Back

0 1 2 3 4 Lively

0 1 2 3 4 Energetic

0 1 2 3 4 Serene

0 1 2 3 4 Eager

0 1 2 3 4 Dynamic

0 1 2 3 4 Safe

0 1 2 3 4 Warm

0 1 2 3 4 Content

0 1 2 3 4 Excited

0 1 2 3 4 Adventurous

0 1 2 3 4 Tranquil

0 1 2 3 4 Peaceful

0 1 2 3 4 Enthusiastic

0 1 2 3 4 Relaxed

Appendix M

Participant Debrief

Thank you for completing the survey and for agreeing for your data to be used in this study.

Please pass on the link to this questionnaire to anyone you know over the age of 18 who would be willing to take part in the study. The more people's views we can get the more accurate the results are likely to be.

If you click submit you will not be able to withdraw your answers, so please only click submit if you are certain you would like to take part.

In addition we are also interested in looking to see if people's answers remain the same or change over time for some of the questions about compassion you have just completed. Therefore if you would be willing to complete part of the survey again in three weeks time, please enter your email address and when you click submit, this will be sent to the researcher. They will then contact you in three weeks time with a link to a shortened version of what you have just completed which should only take around 5 minutes. Enter Email:

If you would like to receive a summary of the research findings then please email me at slinds@essex.ac.uk.

If you have found any aspect of this research distressing and you would like to talk it through with someone please get in touch with me via email slinds@essex.ac.uk.

Your GP or NHS choices can also provide details of local organisations that can help with common mental health problems or can refer you on to other sources of help:

http://www.nhs.uk/Conditions/stress-anxiety-depression/Pages/low-mood-stress-anxiety.aspx

Please click on the next arrow button below to submit your responses. Thank you.

Appendix N

Ethical Approval Form

University of Essex

School of Health and Human Sciences
Telephone: 01206 872854
Fax: 01206 873765
E-mail: hhs@essex.ac.uk

Colchester Campus
Wivenhoe Park
Colchester CO4 3SQ
United Kingdom
Telephone: 01206 873333
Fax: 01206 873598
Web: www.essex.ac.uk

07 January 2016

MISS SIMONE LINDSEY
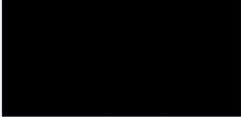
Dear Simone,

Re: Ethical Approval Application (Ref 15007)

Further to your application for ethical approval, please find enclosed a copy of your application which has now been approved by the School Ethics Representative on behalf of the Faculty Ethics Committee.

Yours sincerely,

Lisa McKee
Ethics Administrator
School of Health and Human Sciences

cc.   Research Governance and Planning Manager, REO
       Supervisor

THE QUEEN'S AWARDS
FOR ENTERPRISE
2005

9.   If external approval for this research has been given, then only this cover sheet needs to be submitted

External ethics approval obtained (attach evidence of approval)   Yes ☐ / No ☐

Declaration of Principal Investigator:

The information contained in this application, including any accompanying information, is, to the best of my knowledge, complete and correct. I/we have read the University's *Guidelines for Ethical Approval of Research Involving Human Participants* and accept responsibility for the conduct of the procedures set out in this application in accordance with the guidelines, the University's *Statement on Safeguarding Good Scientific Practice* and any other conditions laid down by the University's Ethics Committee. I/we have attempted to identify all risks related to the research that may arise in conducting this research and acknowledge my/our obligations and the rights of the participants.

Signature(s): ....

Name(s) in block capitals: ....SIMONE LINDSEY...

Date: ....7.11.15...

Supervisor's recommendation (Student Projects only):

I have read and approved both the research proposal and this application.

Supervisor's signature: ....
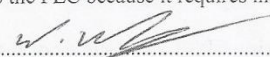
Outcome:

The Departmental Director of Research (DoR) has reviewed this project and considers the methodological/technical aspects of the proposal to be appropriate to the tasks proposed. The DoR considers that the investigator(s) has/have the necessary qualifications, experience and facilities to conduct the research set out in this application, and to deal with any emergencies and contingencies that may arise.

This application falls under Annex B and is approved on behalf of the FEC   ☑

This application is referred to the FEC because it does not fall under Annex B   ☐

This application is referred to the FEC because it requires independent scrutiny   ☐

Signature(s): ....

Name(s) in block capitals: ....WAYNE Wilson...

Department: ..........S.HHS..

Date: ....23/12/15..

The application has been approved by the FEC   ☐

The application has not been approved by the FEC   ☐

The application is referred to the University Ethics Committee   ☐

Signature(s): ....

Name(s) in block capitals: ....

Faculty: ....

Date: ....

Research and Enterprise Office (smp)   March 2010   Page: 3 of 8

Appendix O

Histograms and P-P plots for CEAS time 1 data

CEAS Self-compassion

Mean = 63.82
Std. Dev. = 14.738
N = 315

Normal P-P Plot of CEAS Self-compassion time 1

Normal P-P Plot of Compassion to others time 1

Compassion to others

Mean = 77.27
Std. Dev. = 12.797
N = 315

Compassion Receive

Mean = 58.81
Std. Dev. = 17.292
N = 315

Normal P-P Plot of Compassion Receive time 1

Histograms and P-P plots for CEAS time 2 data

CEAS self-compassion time 2

Mean = 65.32
Std. Dev. = 14.747
N = 41

Normal P-P Plot of CEAS Self-compassion time 2

Compassion to Others time 2

Mean = 79.56
Std. Dev. = 9.767
N = 41

Normal P-P Plot of TotalOthers2

Receive Compassion time 2

Mean = 59.68
Std. Dev. = 17.593
N = 41

Normal P-P Plot of Receive Compassion time 2

Histogram and P-P Plots for all variables

DASS-21

Mean = 24.17
Std. Dev. = 22.042
N = 315

Normal P-P Plot of DASS-21

Santa Clara Brief Compassion Scale

Mean = 24.94
Std. Dev. = 6.503
N = 315

Normal P-P Plot of Santa Clara Brief Compassion Scale

Relaxed Positive Affect

Mean = 18.71
Std. Dev. = 5.514
N = 315

Normal P-P Plot of Relaxed Positive Affect

Safe Positive Affect

Mean = 15.03
Std. Dev. = 3.136
N = 315

Normal P-P Plot of Safe Positive Affect
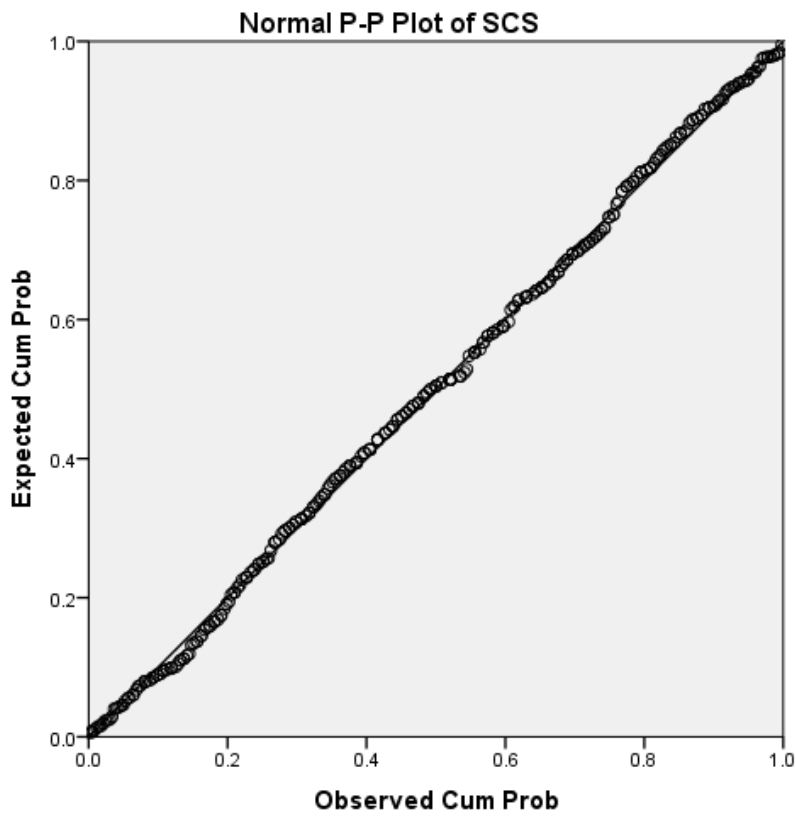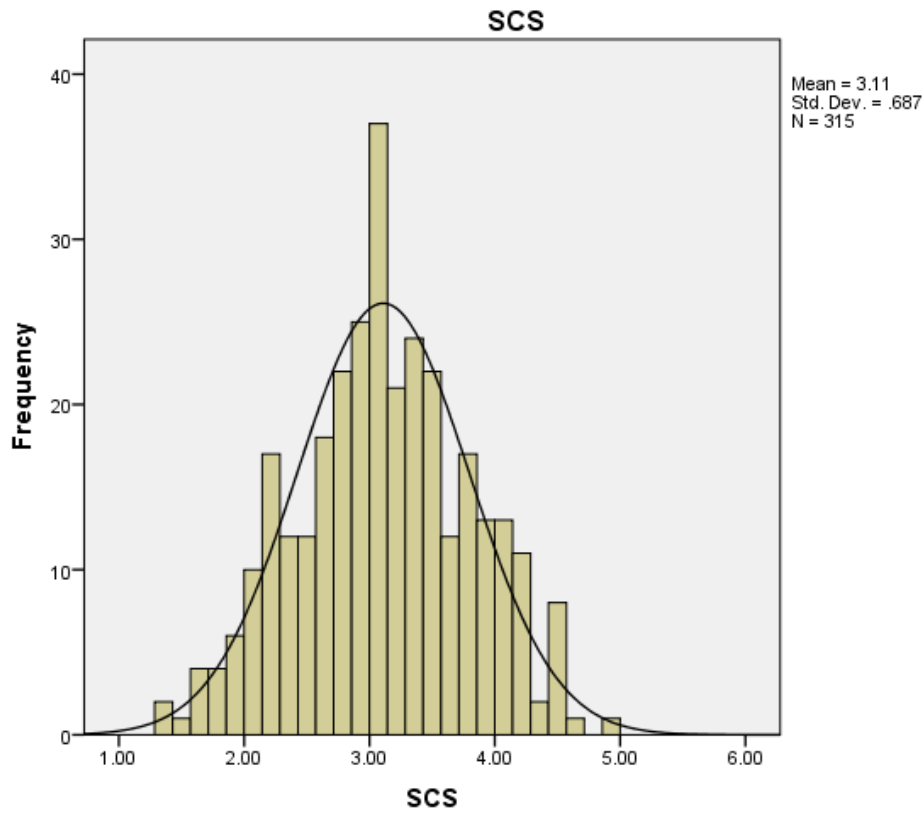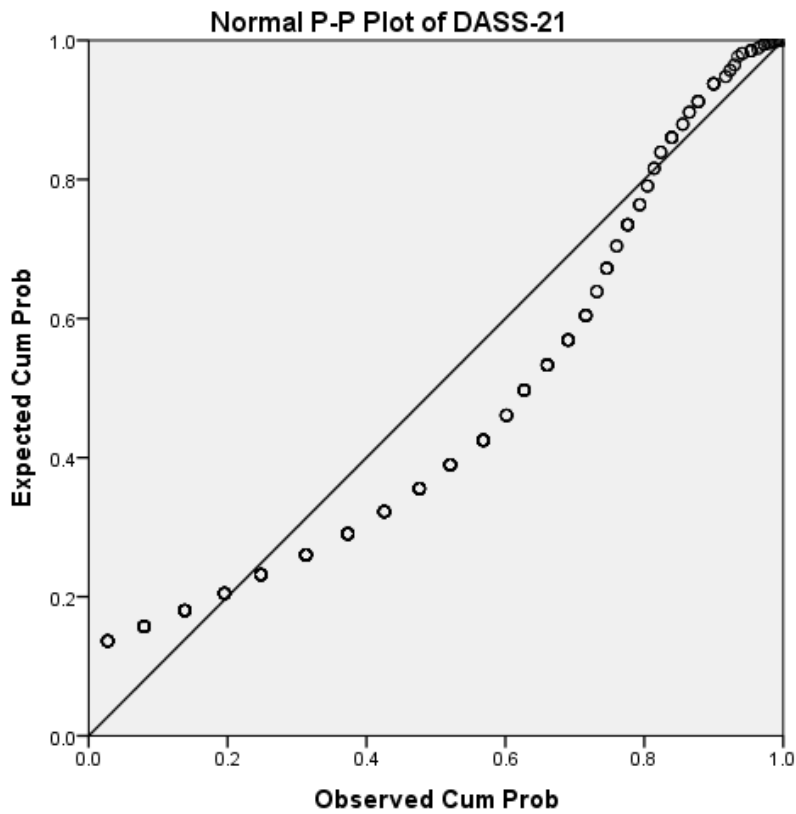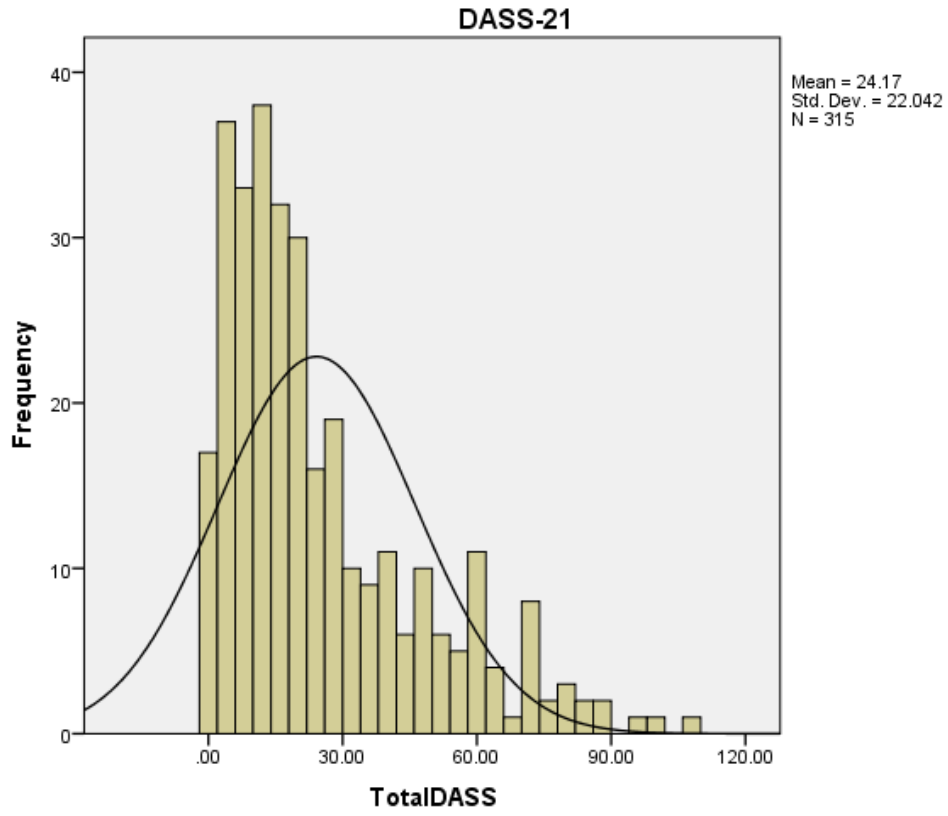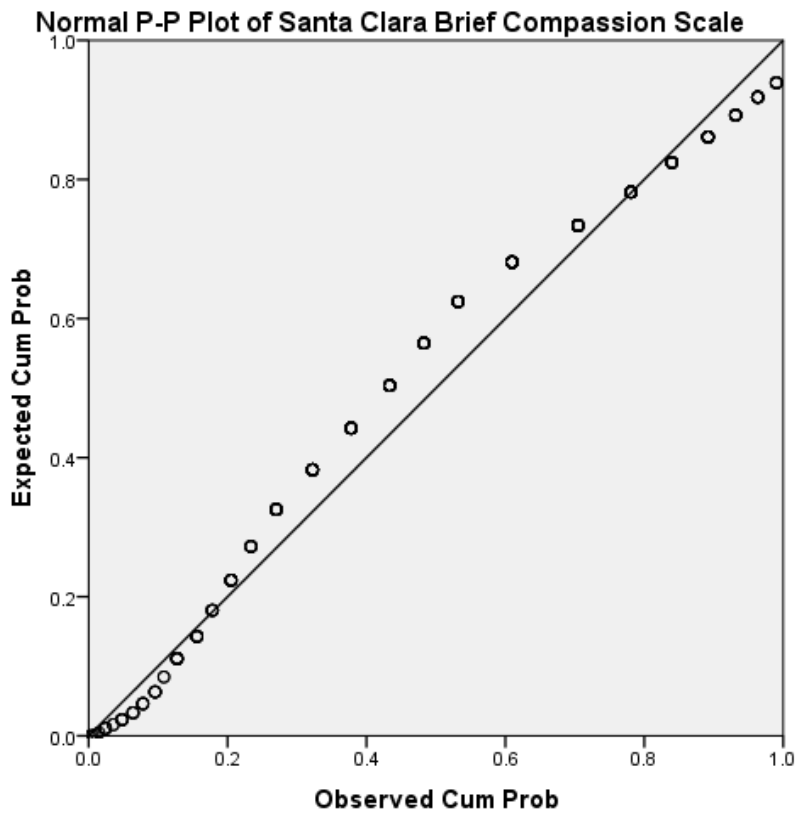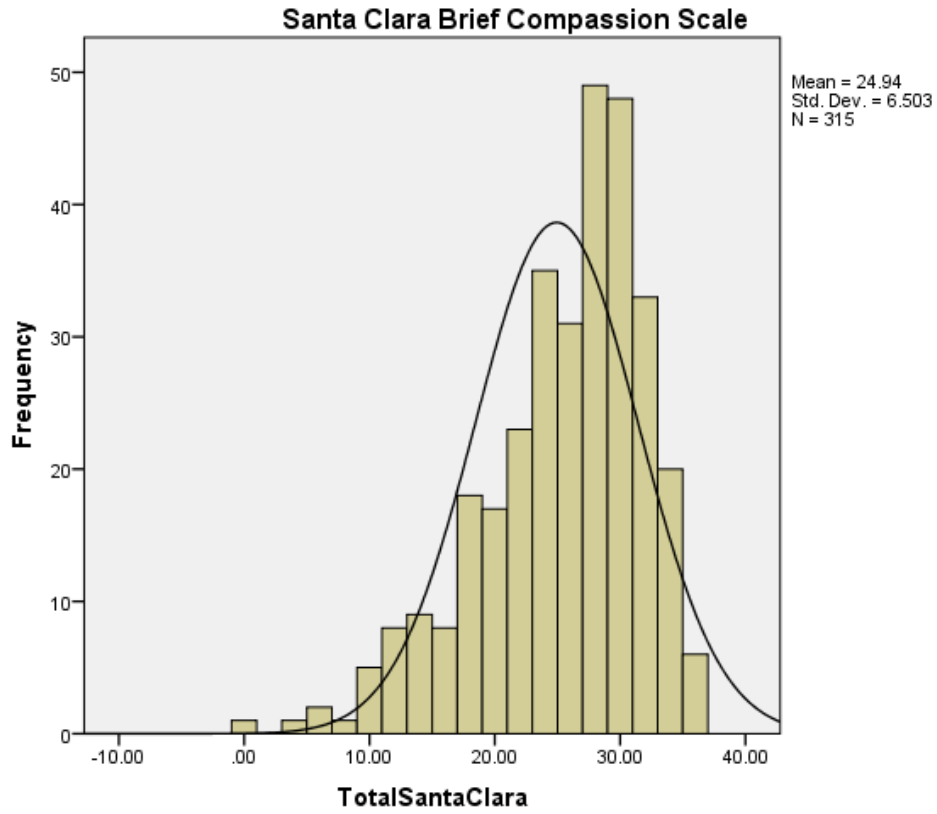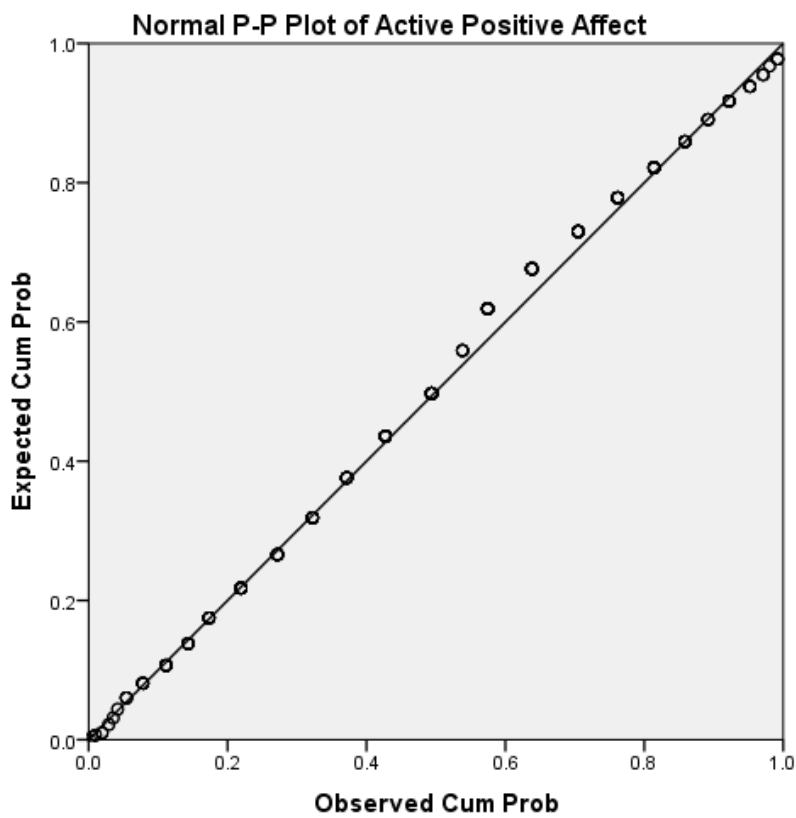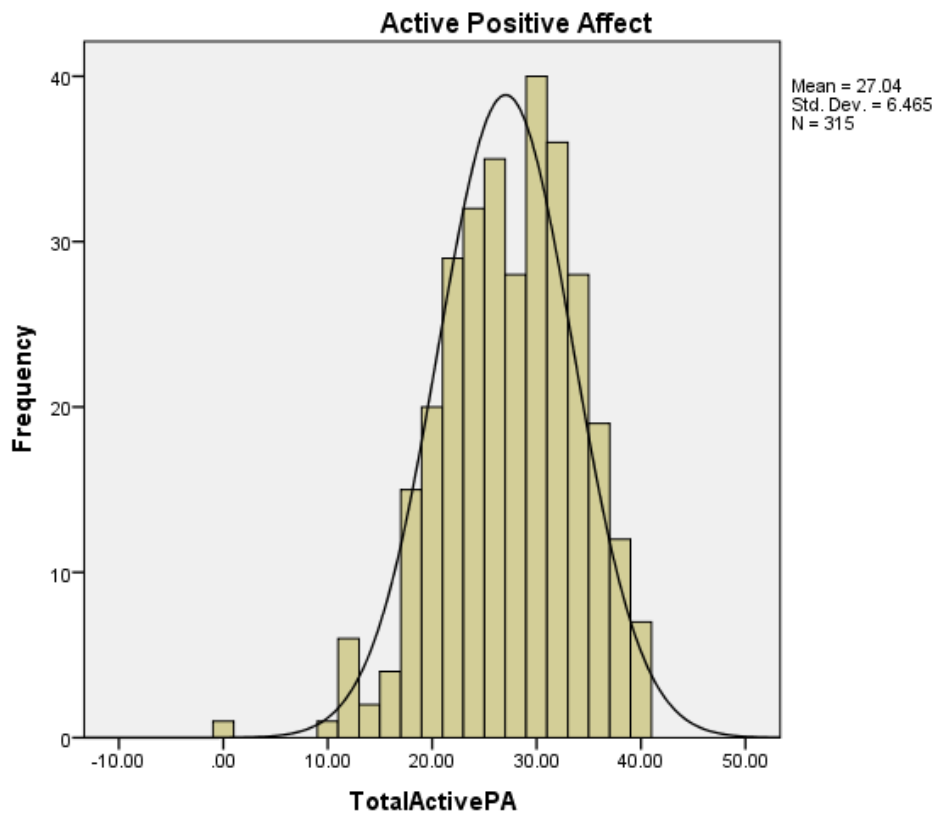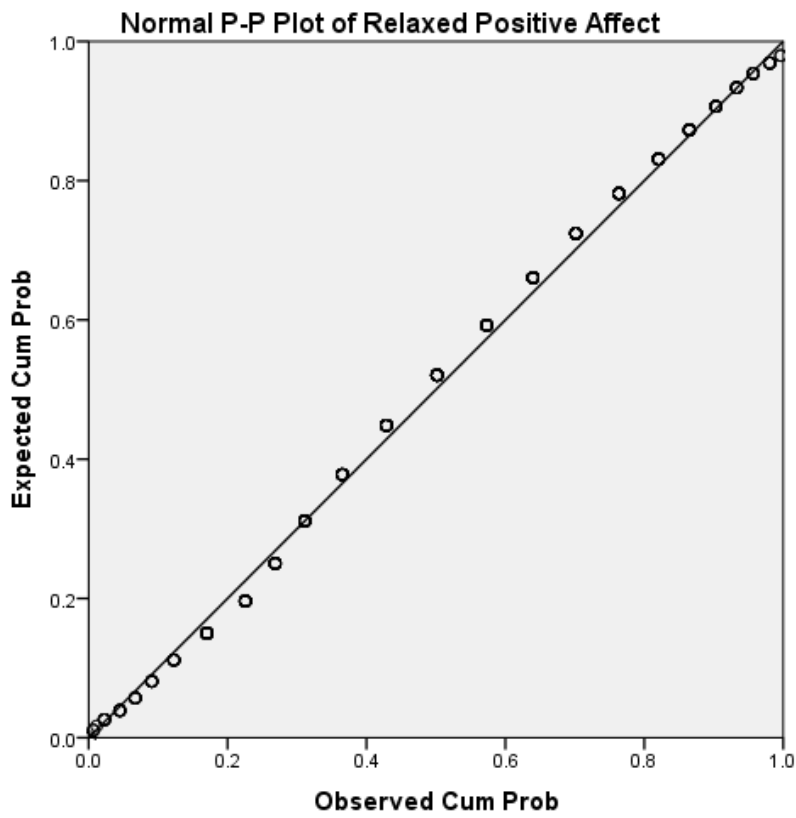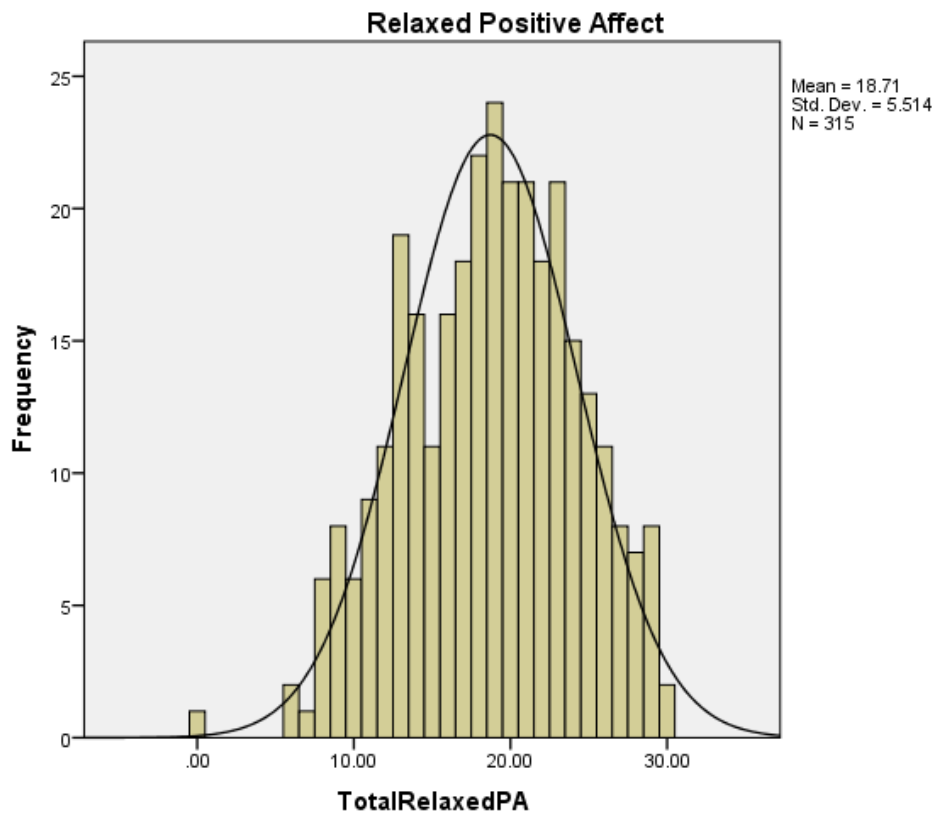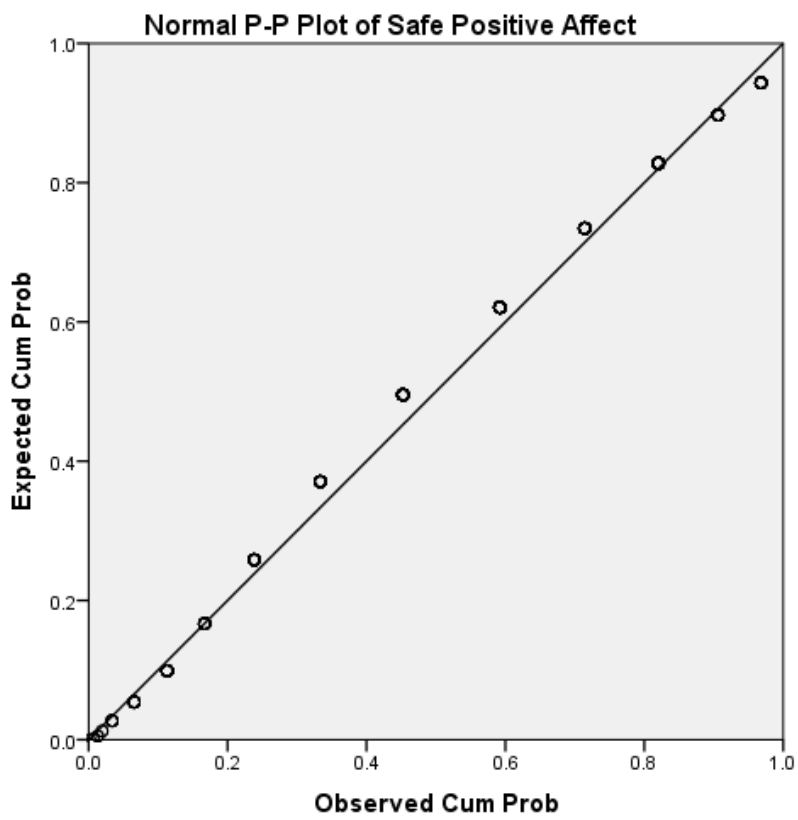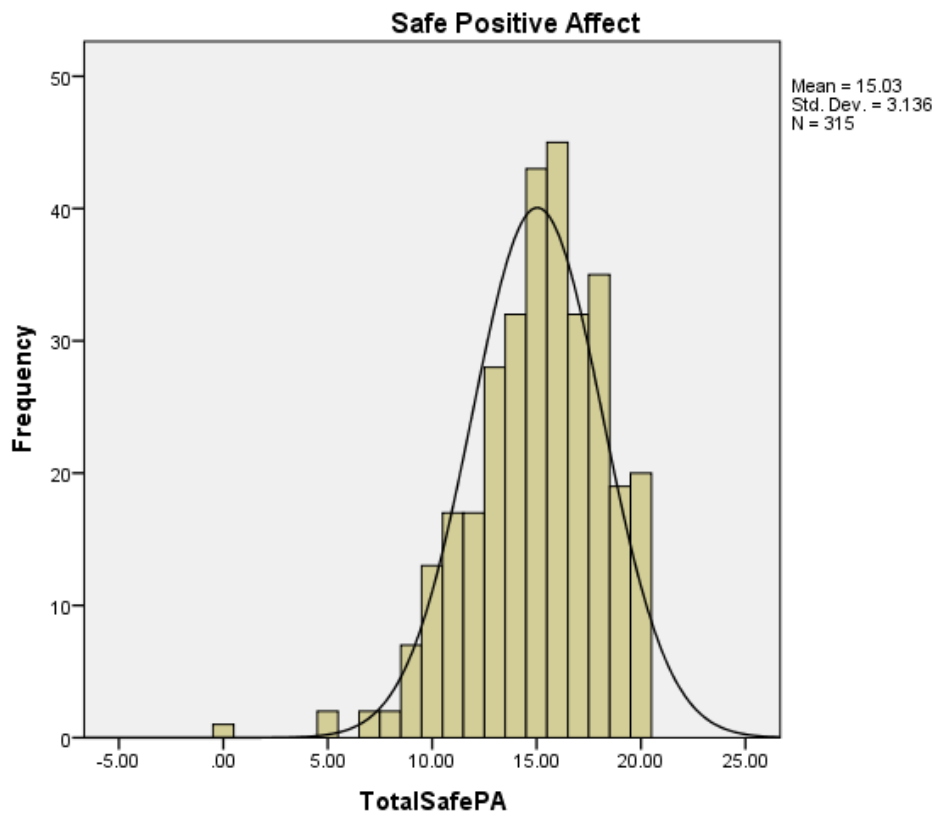
Appendix P

Table showing Skewness and Kurtosis values for SCS, SCBCS, PAS and DASS-21.

	SCS	SCBCS	Relaxed PA	Active PA	Safe PA	DASS-21
Skewness	-.05	-.92	-.20	-.41	-.77	1.28
Skewness Z score	-.36	6.69	1.48	2.97	5.59	9.34
Kurtosis	-.38	.675	-.40	.310	1.29	1.14
Kurtosis Z score	-1.39	2.46	1.45	1.13	4.72	4.16

Note: SCS = Self compassion scale, SCBCS = Santa Clara Brief Compassion Scale, PA = positive affect, DASS-21 = Depression, Anxiety and Stress Scale.

Appendix Q

Correlation Matrix

	Q14_1	Q14_2	Q14_4	Q14_6	Q14_8	Q15_1	Q15_2	Q15_4	Q14_5	Q15_5	Q17_1	Q17_2	Q17_4	Q17_5	Q17_6	Q17_8	Q18_1	Q18_2	Q18_4	Q18_5	Q20_1	Q20_2	Q20_4	Q20_5	Q20_6	Q20_8	Q21_1	Q21_2	Q21_4	Q21_5
Q14_1	1.00	.44	.20	.56	.41	.51	.63	.56	.31	.55	.36	.17	.19	.15	.23	.09	.33	.36	.30	.24	.18	.21	.19	.12	.12	.18	.19	.15	.15	.18
Q14_2	.44	1.00	.36	.40	.25	.32	.36	.28	.28	.34	.33	.32	.23	.09	.25	.12	.29	.27	.28	.35	.26	.29	.23	.16	.24	.18	.24	.23	.25	.26
Q14_4	.20	.36	1.00	.43	.06	.12	.20	.14	.32	.17	.23	.26	.31	.09	.15	.09	.30	.23	.26	.28	.19	.10	.16	.16	.17	.09	.20	.14	.18	.16
Q14_6	.56	.40	.43	1.00	.37	.41	.52	.43	.46	.43	.35	.28	.21	.15	.27	.17	.40	.34	.27	.35	.23	.23	.20	.21	.15	.14	.18	.16	.21	.25
Q14_8	.41	.25	.06	.37	1.00	.44	.48	.44	.26	.55	.11	.13	.11	.12	.13	.21	.10	.14	.12	.06	.09	.10	.11	.22	.10	.22	.08	.11	.16	.20
Q15_1	.51	.32	.12	.41	.44	1.00	.78	.74	.20	.55	.32	.19	.06	.07	.14	.10	.32	.28	.34	.18	.21	.21	.16	.10	.11	.11	.19	.13	.19	.21

Q15_2 -2.	.63	.36	.20	.52	.48	.78	1.00	.75	.24	.60	.32	.22	.12	.17	.20	.10	.32	.37	.34	.22	.22	.26	.21	.23	.14	.17	.19	.18	.24	.26
Q15_4	.56	.28	.14	.43	.44	.74	.75	1.00	.23	.59	.27	.18	.11	.15	.13	.14	.29	.28	.35	.20	.18	.22	.12	.19	.11	.15	.21	.17	.21	.22
Q14_5	.31	.28	.32	.46	.26	.20	.24	.23	1.00	.25	.18	.20	.12	.31	.15	.21	.20	.12	.09	.18	.14	.15	.06	.13	.05	.14	.08	.07	.09	.13
Q15_5	.55	.34	.17	.43	.55	.55	.60	.59	.25	1.00	.24	.18	.16	.17	.17	.09	.24	.27	.29	.21	.22	.19	.25	.23	.21	.23	.19	.20	.25	.25
Q17_1	.36	.33	.23	.35	.11	.32	.32	.27	.18	.24	1.00	.67	.50	.30	.61	.37	.66	.64	.61	.67	.20	.23	.25	.10	.21	.24	.29	.28	.27	.31
Q17_2	.17	.32	.26	.28	.13	.19	.22	.18	.20	.18	.67	1.00	.55	.35	.56	.40	.53	.49	.51	.61	.24	.22	.23	.07	.16	.16	.24	.22	.18	.25
Q17_4	.19	.23	.31	.21	.11	.06	.12	.11	.12	.16	.50	.55	1.00	.31	.46	.27	.41	.38	.39	.48	.18	.16	.27	.10	.13	.18	.17	.16	.17	.18
Q17_5	.15	.09	.09	.15	.12	.07	.17	.15	.31	.17	.30	.35	.31	1.00	.33	.34	.18	.15	.15	.20	-.02	-.01	.00	.08	.01	.10	-.05	.00	-.02	.00
Q17_6	.23	.25	.15	.27	.13	.14	.20	.13	.15	.17	.61	.56	.46	.33	1.00	.35	.46	.46	.46	.52	.13	.15	.21	.04	.19	.16	.16	.18	.11	.17
Q17_8	.09	.12	.09	.17	.21	.10	.10	.14	.21	.09	.37	.40	.27	.34	.35	1.00	.41	.32	.36	.37	.05	.08	.07	.05	.08	.20	.10	.08	.03	.08
Q18_1	.33	.29	.30	.40	.10	.32	.32	.29	.20	.24	.66	.53	.41	.18	.46	.41	1.00	.78	.73	.67	.15	.19	.19	.07	.11	.17	.31	.24	.22	.24
Q18_2	.36	.27	.23	.34	.14	.28	.37	.28	.12	.27	.64	.49	.38	.15	.46	.32	.78	1.00	.73	.62	.11	.17	.17	.13	.12	.17	.27	.28	.24	.27

Q18_4	.30	.28	.26	.27	.12	.34	.34	.35	.09	.29	.61	.51	.39	.15	.46	.36	.73	.73	1.00	.64	.16	.18	.25	.07	.16	.14	.29	.27	.26	.26
Q18_5	.24	.35	.28	.35	.06	.18	.22	.20	.18	.21	.67	.61	.48	.20	.52	.37	.67	.62	.64	1.00	.20	.20	.23	.13	.21	.21	.29	.30	.25	.33
Q20_1	.18	.26	.19	.23	.09	.21	.22	.18	.14	.22	.20	.24	.18	-.02	.13	.05	.15	.11	.16	.20	1.00	.75	.65	.38	.63	.52	.65	.61	.66	.68
Q20_2	.21	.29	.10	.23	.10	.21	.26	.22	.15	.19	.23	.22	.16	-.01	.15	.08	.19	.17	.18	.20	.75	1.00	.62	.40	.60	.56	.65	.62	.63	.66
Q20_4	.19	.23	.16	.20	.11	.16	.21	.12	.06	.25	.25	.23	.27	.00	.21	.07	.19	.17	.25	.23	.65	.62	1.00	.37	.61	.54	.52	.53	.55	.61
Q20_5	.12	.16	.16	.21	.22	.10	.23	.19	.13	.23	.10	.07	.10	.08	.04	.05	.07	.13	.07	.13	.38	.40	.37	1.00	.44	.55	.44	.46	.47	.49
Q20_6	.12	.24	.17	.15	.10	.11	.14	.11	.05	.21	.21	.16	.13	.01	.19	.08	.11	.12	.16	.21	.63	.60	.61	.44	1.00	.60	.67	.63	.62	.62
Q20_8	.18	.18	.09	.14	.22	.11	.17	.15	.14	.23	.24	.16	.18	.10	.16	.20	.17	.17	.14	.21	.52	.56	.54	.55	.60	1.00	.64	.66	.63	.71
Q21_1	.19	.24	.20	.18	.08	.19	.19	.21	.08	.19	.29	.24	.17	-.05	.16	.10	.31	.27	.29	.29	.65	.65	.52	.44	.67	.64	1.00	.83	.75	.76
Q21_2	.15	.23	.14	.16	.11	.13	.18	.17	.07	.20	.28	.22	.16	.00	.18	.08	.24	.28	.27	.30	.61	.62	.53	.46	.63	.66	.83	1.00	.74	.78
Q21_4	.15	.25	.18	.21	.16	.19	.24	.21	.09	.25	.27	.18	.17	-.02	.11	.03	.22	.24	.26	.25	.66	.63	.55	.47	.62	.63	.75	.74	1.000	.80
Q21_5	.18	.26	.16	.25	.20	.21	.26	.22	.13	.25	.31	.25	.18	.00	.17	.08	.24	.27	.26	.33	.68	.66	.61	.49	.62	.71	.76	.78	.80	1.000

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Q14_1		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00	.00
Q14_2	.00		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Q14_4	.00	.00		.00	.15	.01	.00	.01	.00	.00	.00	.00	.06	.00	.07	.00	.00	.00	.00	.00	.04	.00	.00	.00	.05	.00	.01	.00	.00	
Q14_6	.00	.00	.00		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	
Q14_8	.00	.00	.15	.00		.00	.00	.00	.00	.00	.02	.01	.02	.02	.01	.00	.03	.01	.02	.13	.05	.04	.02	.00	.04	.00	.07	.03	.00	.00
Q15_1	.00	.00	.01	.00	.00		.00	.00	.00	.00	.00	.00	.15	.10	.01	.04	.00	.00	.00	.00	.00	.00	.04	.03	.03	.00	.01	.00	.00	
Q15_2	.00	.00	.00	.00	.00	.00		.00	.00	.00	.00	.00	.02	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	
Q15_4	.00	.00	.01	.00	.00	.00	.00		.00	.00	.00	.00	.02	.00	.01	.01	.00	.00	.00	.00	.00	.00	.02	.00	.03	.01	.00	.00	.00	
Q14_5	.00	.00	.00	.00	.00	.00	.00	.00		.00	.00	.00	.02	.00	.00	.00	.00	.01	.06	.00	.01	.00	.14	.01	.20	.01	.09	.11	.05	.01
Q15_5	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Q17_1	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
Q17_2	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00

Q17_4 .00 .00 .00 .00 .02 .15 .02 .02 .02 .00 .00 .00   .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .04 .01 .00 .00 .00 .00 .00

Q17_5 .00 .06 .06 .00 .02 .10 .00 .00 .00 .00 .00 .00 .00   .00 .00 .00 .01 .00 .00 .38 .43 .49 .08 .43 .04 .20 .47 .34 .48

Q17_6 .00 .00 .00 .00 .01 .01 .00 .01 .00 .00 .00 .00 .00 .00   .00 .00 .00 .00 .00 .01 .00 .00 .24 .00 .00 .00 .00 .02 .00

Q17_8 .05 .02 .07 .00 .00 .04 .05 .01 .00 .05 .00 .00 .00 .00   .00 .00 .00 .00 .20 .07 .10 .18 .09 .00 .04 .08 .27 .09

Q18_1 .00 .00 .00 .00 .03 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00   .00 .00 .00 .00 .00 .00 .12 .03 .00 .00 .00 .00 .00

Q18_2 .00 .00 .00 .00 .01 .00 .00 .00 .01 .00 .00 .00 .00 .01 .00 .00 .00   .00 .00 .03 .00 .00 .01 .02 .00 .00 .00 .00 .00

Q18_4 .00 .00 .00 .00 .02 .00 .00 .00 .06 .00 .00 .00 .00 .00 .00 .00 .00 .00   .00 .00 .00 .00 .10 .00 .01 .00 .00 .00 .00

Q18_5 .00 .00 .00 .00 .13 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00   .00 .00 .00 .01 .00 .00 .00 .00 .00 .00

Q20_1 .00 .00 .00 .00 .05 .00 .00 .00 .01 .00 .00 .00 .00 .38 .01 .20 .00 .03 .00 .00   .00 .00 .00 .00 .00 .00 .00 .00 .00

Q20_2 .00 .00 .04 .00 .04 .00 .00 .00 .00 .00 .00 .00 .00 .43 .00 .07 .00 .00 .00 .00 .00   .00 .00 .00 .00 .00 .00 .00 .00

Q20_4 .00 .00 .00 .00 .02 .00 .00 .02 .14 .00 .00 .00 .00 .49 .00 .10 .00 .00 .00 .00 .00 .00   .00 .00 .00 .00 .00 .00 .00

Q20_5 .02 .00 .00 .00 .00 .04 .00 .00 .01 .00 .03 .09 .04 .08 .24 .18 .12 .01 .10 .01 .00 .00 .00   .00 .00 .00 .00 .00 .00

Q20_6 -	.02	.00	.00	.00	.04	.03	.01	.03	.20	.00	.00	.00	.01	.43	.00	.09	.03	.02	.00	.00	.00	.00	.00	.00		.00	.00	.00	.00	.00
Q20_8 -	.00	.00	.05	.01	.00	.03	.00	.01	.01	.00	.00	.00	.00	.04	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00		.00	.00	.00	.00	
Q21_1 -	.00	.00	.00	.00	.07	.00	.00	.00	.09	.00	.00	.00	.00	.20	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00	.00	.00	
Q21_2 -	.00	.00	.01	.00	.03	.01	.00	.00	.11	.00	.00	.00	.00	.47	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00	.00	
Q21_4 -	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.34	.02	.27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00
Q21_5	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.48	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	

a. Determinant = 1.44E-009

Appendix R

Path Model example for action and engagement models

Appendix S

Model fit scores for action and engagement subscales

Fit Index	CEAS Subscale		
	Self-compassion	Compassion to others	Compassion from others
CMIN/DF	4.89	3.14	4.52
RMR	.38	.19	.18
GFI	.90	.93	.90
IFI	.90	.96	.95
CFI	.90	.96	.95
RMSEA	.11	.83	.10

Note. CMIN/DF = the minimum discrepancy divided by its degrees of freedom, RMR = root mean square residual, GFI = goodness of fit index, IFI = incremental fit index, CFI = comparative fit index, RMSEA = Root Mean Square Error of Approximation.

Appendix T

Correlations of all variables

	CEAS self-Compassion	Compassion Others	Compassion Receive	Self-Kindness	Self-judge	Common Human	Isolation	Mindfulness	Over-Identify	SCS	Anxiety	Depression	Stress	Total DASS	Santa Clara	Active PA	Relaxed PA	Safe PA
CEAS Self-Compassion	1	.43**	.32**	.51**	.39**	.41**	.31**	.55**	.28**	.53**	-.32**	-.38**	-.26**	-.35**	.13*	.37**	.27**	.46**
Compassion Others	.43**	1	.28**	.21**	-.02	.19**	.03	.25**	-.06	.12*	-.05	-.00	-.00	-.02	.55**	.23**	.04	.29**
Compassion Receive	.32**	.28**	1	.21**	.23**	.20**	.27**	.18**	.11	.26**	-.15**	-.28**	-.20**	-.24**	.20**	.27**	.15**	.32**
Self-Kindness	.51**	.21**	.21**	1	.58**	.59**	.38**	.68**	.35**	.77**	-.21**	-.30**	-.28**	-.30**	.09	.22**	.39**	.39**
Self-Judge	.39**	-.02	.23**	.58**	1	.38**	.71**	.44**	.66**	.83**	-.43**	-.48**	-.51**	-.54**	-.11*	.21**	.39**	.35**
Common-Human	.41**	.19**	.19**	.59**	.38**	1	.27**	.683**	.33**	.69**	-.18**	-.22**	-.24**	-.24**	.11	.23**	.42**	.46**
Isolation	.31**	.02	.27**	.38**	.71**	.26**	1	.38**	.65**	.75**	-.41**	-.51**	-.46**	-.52**	-.01	.27**	.33**	.34**
Mindfulness	.54**	.25**	.18**	.68**	.43**	.68**	.37**	1	.47**	.77**	-.24**	-.32**	-.30**	-.33**	.07	.29**	.43**	.48**

Over-Identify	.28**	-.06	.11	.35**	.66**	.33**	.65**	.47**	1	.76**	-.41**	-.42**	-.46**	-.49**	-.12*	.14*	.44**	.31**
SCS	.52**	.12*	.26**	.77**	.83**	.69**	.75**	.77**	.76**	1	-.41**	-.49**	-.49**	-.53**	.00	.29**	.52**	.50**
Anxiety	-.31**	-.04	-.14**	-.21**	-.43**	-.17**	-.40**	-.24**	-.41**	-.41**	1	.63**	.69**	.85**	.08	-.09	-.25**	-.23**
Depression	-.37**	-.00	-.27**	-.30**	-.48**	-.22**	-.50**	-.32**	-.42**	-.49**	.63**	1	.70**	.88**	.06	-.28**	-.38**	-.40**
Stress	-.25**	-.00	-.19**	-.28**	-.50**	-.24**	-.46**	-.30**	-.46**	-.49**	.69**	.70**	1	.91**	.08	-.11*	-.38**	-.29**
Total DASS	-.35**	-.01	-.23**	-.30**	-.53**	-.24**	-.52**	-.33**	-.49**	-.53**	.85**	.88**	.91**	1	.08	-.19**	-.39**	-.35**
SCBCS	.13*	.54**	.20**	.08	-.11*	.10	-.01	.07	-.12*	.00	.08	.06	.08	.08	1	.26**	.08	.28**
Active PA	.37**	.22**	.27**	.21**	.21**	.22**	.26**	.29**	.14*	.29**	-.09	-.29**	-.11*	-.19**	.26**	1	.37**	.52**
Relaxed PA	.27**	.03	.14**	.39**	.39**	.41**	.33**	.43**	.44**	.52**	-.25**	-.38**	-.38**	-.39**	.08	.37**	1	.65**
Safe PA	.45**	.29**	.32**	.38**	.34**	.45**	.33**	.48**	.31**	.50**	-.23**	-.40**	-.29**	-.35**	.28**	.52**	.65**	1

Note: CEAS = compassionate engagement and action scale, SCS = Self-compassion scale, DASS= Depression, anxiety and stress scale, SCBS = Santa clara brief compassion scale, PA = positive affect.
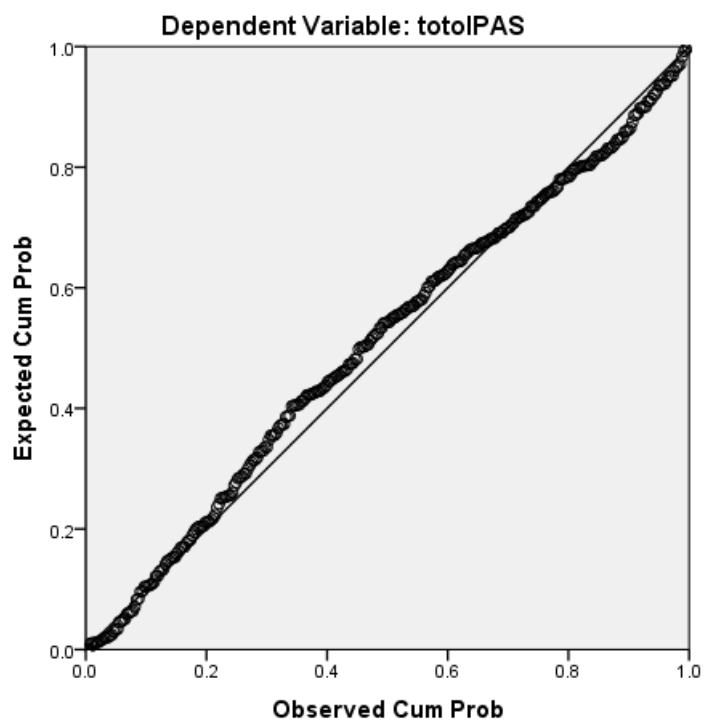
**.Correlation is significant at the 0.01 level (2-tailed).

Appendix U

Residual plots

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Total DASS-21

Scatterplot
Dependent Variable: TotalDASS

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: totolPAS

Scatterplot

Dependent Variable: totolPAS