A feasibility study exploring the impact of practising compassion-focused imagery exercises online on eating disorder symptomatology in a community sample

Constantina Markides

A thesis submitted for the degree in Doctorate in Clinical Psychology Department of Health and Human Sciences University of Essex April 2018

Acknowledgments

Thank you --

Mum, dad for always picking up the phone, and for parting with me for a second time, so that I could follow another ambitious goal. To my sister, Anna, for opening the door of psychology to me, and enthusing me to follow in your footsteps. My friends, Azi, Andre, Simon and Gail, your way of thinking, your passion and commitment to learning and to helping, shapes the kind of psychologist I am, or strive to be. In particularly, Azi, thank you for your unwavering care and support and for being there for every tough part of this 'journey'. To my other sister, Sophie, for being my 'Compassionate Other', so patiently and forgivingly -and for so long. To the two 'St Bernard's' of my 'Wolfpack', Laura and Seamus- you have made, even the hardest parts of this journey a pleasure. Your humour, intelligence, thoughtfulness, work-ethic, kindness and positive mindset are gifts to those around you.

To my supervisors, for their encouragement, especially Leanne, for always making time and to Syd for facilitating the birth of this project at your self-compassion special interest group. To my cohort, for 'holding' me though it all, it has been an honour to train alongside you, learn from you, and to witness your growth and resilience.

Thank you, Professor Paul Gilbert, for your inspiring work and for generously sharing your compassionate imagery recordings with all of us who need them. I am also thankful for the times that have taught me the importance of compassion, which inspired this project and gave me the motivation to carry it through. Elizabeth, this thesis is my 'thank you' to you, which I had never imagined would look like this, eleven years ago.

Above all, I am thankful to everyone who has participated in this research. I hope that participating has planted the seeds of self-compassion in some of you.

Abstract

Many people with eating disorder symptoms (ED-symptoms) in the community may not access treatment due to personal reasons, such as ambivalence about recovery, or due to contextual factors, like limited service provisions. Current evidence-based treatments have been shown to be effective for only a proportion of people with ED-symptoms. Compassion Focused Therapy may help improve treatment outcomes for ED-symptoms. Specifically, self-compassion is proposed to address ED-behaviours by alleviating the high levels of self-criticism which are prevalent among those with ED-symptoms. This study conducted a systematic review and a meta-analysis to evaluate the effectiveness of self-compassion interventions for ED-symptoms. Findings indicated growing evidence that self-compassion interventions might be beneficial to this population. Similarly, 'light touch' online self-compassion interventions showed promising results in the treatment of ED-symptoms. However, these findings are limited by high attrition rates. This evidence suggests that self-compassion interventions and online self-compassion interventions, such as CFI-online, may be an accessible, resource-efficient and beneficial intervention for adults in the community with ED-symptoms. However, the feasibility of CFI-online would need to be explored before conducting larger research in the area. To this end, this research utilised a mixed-methods design to explore the feasibility and acceptability of CFI-online for an adult community sample with ED-symptoms. Self-report measures and semi-structured interviews were used to explore the feasibility and acceptability of the intervention, and to preliminarily evaluate the effects of CFI-online. Quantitative data were evaluated for statistical and clinically significant changes. Qualitative data were analysed using framework analysis. Triangulation of the quantitative and qualitative data suggested that, overall, CFI-online is an acceptable and

feasible intervention for this population, with some promising beneficial results. However, several limitations were noted, especially a high attrition rate. Theoretical and clinical implications are discussed, and recommendations for future studies and the development of CFI-online for ED-symptoms are made.

Contents

List of figures

List of tables

Introduction

Eating Disorders and Eating Disorder Symptoms

According to Herpertz-Dahlmann (2015) eating disorders (EDs) are viewed as mental health disorders whereby a person's eating is pathologically disturbed. The person fears becoming fat, and is excessively concerned about their weight and shape, especially as weight and shape play an excessive bearing on their self-evaluation.

Eating disorder (ED) symptoms can include weight, shape, body-image concerns, body-image dissatisfaction, internalising thinness as an ideal body-shape, and behaviours such as restricting one's eating, binge-eating and purging (Melioli et al., 2016). Fairburn, Cooper, and Shafran (2003) described ED-symptoms as transdiagnostic. This implies that ED-symptoms can be fluid and can change for individuals across the different diagnoses of EDs.

Eating disorders prevalence. Though EDs have until recently been considered relatively rare (Smink, Van Hoeken, & Hoek, 2012) their prevalence may have been underestimated. Changes in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5, American Psychiatric Association, [APA], 2013) broadened the diagnostic criteria for an ED. Changes included removing the amenorrhea criterion and including Binge-eating Disorder (BED) as a diagnosis. This aimed to minimise the amount of those with an ED not fitting full-threshold diagnoses (Micali et al., 2017). Prevalence rates indicate that respectively, 13% and 11% of women and men in the UK are affected by an ED (Allen, Byrne, Oddy, & Crosby, 2013; National Collaborating Centre for Mental Health, 2004). According to Gagne et al. (2012) 13% of women over 50 years old experience symptoms related to EDs (ED symptom). In 2015, a UK EDs charity, Beat (Coopers, 2015) estimated that 725,000 people in the UK experience an ED. Micali et al.,

(2017) suggested that by mid-life, 15.3% of UK women experienced an ED and that of all those with an ED, 10% meet criteria for Anorexia Nervosa (AN), 40% for Bulimia Nervosa (BN), and 50% for Eating Disorders Not Otherwise Specified (EDNOS) and Binge-eating Disorder (BED). ED prevalence rates suggest that EDs cause distress to a significant portion of people, not least because of the high mortality rate associated with EDs, the highest amongst all other mental health disorders (Coopers, 2015). Furthermore, EDs can be chronic and psychologically, socially and physically debilitating (Fairburn, 2008) and are associated with high healthcare costs (Coopers, 2015).

The broadening of the DSM-5 diagnostic criteria further point toward the fact that the wider spectrum of EDs and sub-threshold EDs and ED-symptoms need to be considered, especially as Coopers (2015) recommend early interventions. Indeed, some critics of the DSM-5 suggest that diagnostic cut-off criteria are unnecessary (Ortigo, Bradley, & Westen, 2010; Bentall, 2006) and that what matters is that a person experiences ED-symptoms. That is, they engage in disordered eating, such as purging, bingeing, or restrictive eating, and have weight, shape or eating concerns related to feeling rejected or abandoned (Westen, 2012).

The eating disorder continuum framework. Bentall (2006) recommends viewing mental health problems as occurring on a continuum and not a dichotomy of madness and normal functioning. Similarly, Wildes and Marcus (2013) suggest that ED-symptoms occur along a continuum of normality, and that viewing them dimensionally can have a positive clinical utility. They cite research (e.g., Holm-Denoma, Richey, & Joiner, 2010) showing that ED cognitions, such as a drive to be thin, restraining one's eating, and body-dissatisfaction lie within this continuum of normality. However, in terms of ED behaviours, research remains inconclusive. Some indicates that binge and restrictive EDs

belong to different categories (e.g., Williamson, Gleaves, & Stewart, 2005). Other research suggests that they are associated dimensionally (e.g., Olatunji et al., 2012). Nevertheless, Tylka and Subich (2003) suggest that research aiming to understand EDs would be aided by adopting an approach that views ED behaviours along a spectrum, especially as many models suggest that EDs occur on a continuum (Nyladner, 1971; Scarano & Kalodner-Martin, 1994).

The ED continuum was initially proposed by Nyladner (1971). The purpose of this continuum was to organize and integrate the different kinds of EDs (Scarano & Kalodner-Martin, 1994). This framework, suggests that the differences between those who meet diagnostic criteria for an ED and those who only have milder elements of the disorder, are not qualitative but quantitative (Tylka & Subich, 1999). Within this framework, those who experience no ED-symptoms fall within one extreme of the spectrum and those with an ED at the other extreme, whereas those with moderate levels of ED-symptoms lie somewhere in the middle.

The construct validity of this continuum has received considerable support. For example, Tylka and Subich (1999) found that personality traits (e.g., neuroticism), body dissatisfaction, and preoccupation with controlling one's dieting, demonstrated a linear progressive correlation in females with an ED, depending on ED symptom severity. Though somewhat limited in external validity due to the sample consisting predominantly of university female students, Tylka and Subich (2003) found evidence supporting a dimensional view of EDs in their analysis of how ED psychological (e.g. neuroticism) and sociocultural factors (e.g., pressure to be thin) function along a spectrum. In similar analyses in a large community sample of 3032 twins, Luo, Donnellan, Burt and Klump, (2016) found that individuals with ED-symptoms differ

mainly quantitatively, not qualitatively, and thus can be compared on a spectrum of ED symptom severity.

Potential for early interventions. Studies that have found support for the ED continuum (e.g., Holm-Denomaet al., 2010; Olatunji et al., 2012; Tylka & Subich, 2003) typically advocate for interventions aimed at the different levels of ED-symptoms, including mild ED-symptoms. Doing so may prohibit the escalation of these symptoms to the extreme end of the ED spectrum. The continuum framework would help identify relevant interventions for the various levels of EDs. It would also offer potential pathways of early interventions, especially as milder symptoms of EDs can be risk factors for EDs (Klausner, 2016). Indeed, Killen et al. (1996) emphasise that over-concern with weight/shape and dieting, is pandemic in women in the Western world. They advocate for more research and interventions in the community that focus on 'partial syndrome EDs' and ED-symptoms to address the fact that people can experience ED-symptoms on a spectrum that is not sufficiently defined diagnostically, nor addressed therapeutically. Thus, ED-symptoms may be worthwhile treating, even if they are not severe enough to reach criteria for an ED diagnosis. Indeed, current research recommends that clinicians consider a range of interventions that address ED-symptoms along a spectrum of severity (Melioli et al., 2016). Such a recommendation would build on the idea that addressing ED risk factors can be an early intervention for EDs.

Indeed, according to the American Psychiatric Association, (APA, 2000) experiencing shame and dissatisfaction about ones' body are central to developing an ED (Goss & Allan, 2012). In their prospective study, Rohde, Stice, and Marti (2015) found that a perceived need for and idealisation of thinness, combined with body-dissatisfaction, increased linearly. Body-dissatisfaction also predicted the onset of a

DSM-5 ED diagnosis. Those with high body-image dissatisfaction aged 13-16 years were more likely to develop an ED four years post-assessment. Thus, body-dissatisfaction was suggested as an early intervention target in preventing ED. Furthermore 4-year prospective study (Killen et al., 1996) revealed that girls scoring in the top quartile of weight-concerns met criteria for partial syndrome ED at four-year follow-up. Thus, the need for research and interventions that address the spectrum of ED-symptoms in the community was highlighted.

EDs appear to be chronic, and those who experience full-blown EDs are often resistant to help (Fairburn, 2008). Severe levels of ED-symptoms can be associated with elevated risks, and early intervention is suggested to facilitate a full recovery (Coopers, 2015). Hence, it could be argued that early and accessible interventions need to be offered to anyone experiencing ED-symptoms. Notably, ICD-10, according to Uher and Rutter (2012), does not consider frequency and duration of diagnostic criteria, and instead focuses on the mere presence of ED-symptoms.

Models Explaining the Development and Maintenance of Eating Disorders

Whilst various models have been proposed with regards to explaining the development and maintenance of EDs those that have gathered most empirical support at present include the dual pathway model and the cognitive behavioural model.

The dual pathway model. The dual-pathway model of EDs (Stice, 2001) is an integrative, sociocultural etiological theory of EDs (especially BN and BED). It proposes that individuals feel pressured by others, such as significant others and the media, to achieve thinness to be considered beautiful. This pressure leads them to feel dissatisfied with their body and to engage in unhealthy dieting or eating behaviours, which may escalate to an ED. Being dissatisfied with one's body also contributes to feelings of low

mood, which individuals may try and alleviate or distract themselves from, by binge-eating, according to the affect regulation model (Stice, 2001). In this model, body-dissatisfaction predicts binge-eating via the restraint pathway (e.g., limiting one's eating) or via the negative affect pathway (e.g., low/ negative mood). Within the restraint pathway, limited food intake or breaking one's, strict diet rules, can trigger bingeing or overeating. Within the depressive pathway, binge-eating is employed to regulate negative feelings. Though this model has been extensively evaluated, studies were typically with female teenagers (Allen, Byrne, & Mc Lean, 2012), thus limiting the generalisability of the findings.

Nevertheless, the model has received support from several studies (Maraldo, Zhou, Dowling, & Vander Wal, 2016). Ouwens, Van Strien, Van Leeuwe, and Van der Staak (2009) cite numerous longitudinal studies that provided evidence for the restrain pathway. They suggest that two studies did not find support for the model (Spoor et al., 2006; Stice, 1998 in Ouwens et al., 2009). Ouwens et al. also propose that the negative affect pathway has received empirical support in several longitudinal studies except one, whereas cross-sectional studies provided support for both pathways. In Stice's (2001) longitudinal prospective evaluation, the dual pathway model explained 23% of the variance in the development of ED-symptoms after controlling for initial bulimic levels. This reflects roughly a medium effect size according to Cohen's d criteria (1988). This was a sizeable proportion of variance, yet 77% remained unexplained. However, all the above findings were based mainly on school/college women. Thus, they may not generalise to other populations. They relied on self-report data with relatively short follow-up (e.g. 10 and 20 months post-baseline), limiting conclusions about longer and more objective outcomes.

The cognitive behavioural model. The cognitive behavioural (CB) model (Fairburn, Cooper, & Shafran, 2003) posits that self-esteem is central in predicting that a person with an ED will over-value their eating, weight, body-shape and their ability to control their eating. This would be due to their self-worth being mainly, or completely based on their weight, shape or ability to control their food intake. This then predicts the tendency to impose strict dietary restrains on themselves. However, eating restrain is proposed to trigger binge-eating and purging (Fairburn et al., 2003).

More recently, the CB model has been extended (Fairburn, 2008), aiming to explain all EDs by including, alongside the binge/eating/purging pathway, an under-eating and a low-weight pathway. It has also added factors such as mood intolerance, relational difficulties and perfectionism, theorised to contribute to the maintenance or persistence of ED-symptoms in some people.

Existing approaches and treatments. Generally, the first line of treatment for BN at present is Cognitive- Behavioural Therapy (CBT), with reported respective recovery rates of 37% and 34% when compared to not receiving any treatment or receiving other treatment (Hay, 2013). Stefini et al., (2017) suggested that CBT brought about full recovery from BN to 30%-50% of participants across three studies. Family-based treatment (FBT) has also demonstrated effectiveness in promoting abstinence from bingeing and purging in 41.4% of teenagers with BN compared to 36% of those who received self-care CBT. In their own RCT with adolescent and young adult females, Stefini et al., found that CBT and Psychodynamic Therapy (PDT) were equally effective in bringing recovery from BN in these participants. Furthermore, in their review Hay (2013) concluded that the evidence base for CBT for AN had grown and, regarding BN treatment, CBT remained the leading therapy. Hay however recommended that more non-inferiority trials comparing therapies are needed, to evidence the best way of

addressing ED-symptoms and weight management, especially in those who experience both BED and obesity.

Stefini et al. (2017) suggested that, though some research indicates similar effectiveness across PDT and CBT in BN, CBT may be more cost-effective. For example, Poulsen et al., 2014 have indicated that CBT elicits BN recovery quicker and in fewer sessions (e.g., within 20 session vs weekly psychoanalytic psychotherapy for two years, with mean number of sessions *m* = 73). This is pertinent given financial restraints in the NHS. Indeed, Williams, Tsivos, Brown, Whitelock, and Sampson (2017) added that, though "CBT extended for eating disorders" (CBT-E) is gaining support for its efficacy in treating EDs and ED-symptoms, CBT-E is resource-heavy, given it is designed to be offered twice weekly for the first eight sessions. The authors suggested that though in recent trials, 66% of participants receiving (CBT-E) recovered from ED-symptoms, 34% remained non-recovered. In their review of ED treatments, Kass, Kolko, and Wilfley (2013) recommended expanding therapies to target ED-symptoms more broadly to improve outcomes, especially for those who are treatment-resistant to current approaches. The authors highlight that to reduce the burden of EDs, access to effective therapies for ED-symptoms, which is currently limited, needs to become more widespread.

These economic factors, coupled with the premise of increasing patient choice (National Collaborating Centre for Mental Health, [NCCMH], 2004) and improving access to services (Kass et al., 2013) and the growing evidence base for third-wave behavioural therapy (Fairburn, 2017) makes a good argument for exploring and developing alternative treatments alongside CBT.

Context of eating disorder treatment. Currently, NHS mental health services in the UK focus less on prevention and early intervention and more on intervention. There

are limited services that address distress related to body-image and eating problems, and these services predominantly accept those who meet criteria for an ED (Layard et al., 2012).

Treatment resistance. A difficulty in addressing EDs and ED-symptoms, as mentioned, is that those experiencing them can often deny help, and conceal their experiences (Smink, 2012). Individuals with ED-symptoms may not perceive them as harmful as these fit their ideals. Thus, ED-symptoms are ego-syntonic (Byrne, Eichen, Fitzsimmons-Craft, Taylor, & Wilfley, 2016). Overall, only 25% of those with mental health problems access NHS help (Layard et al., 2012). In a UK-based study on ED prevalence in women, only 27.4% of those with an ED pursued or accepted help, and only 4.9% received psychological help (Micali et al., 2017). Thus, those with an ED may not receive help, or resist and respond less positively to it due to their resistance. Therefore, it may be important to address ED-symptoms that increase risk of developing an ED and before these become so entrenched that individuals resist help or responding to it. Duarte, Pinto-Gouveia and Stubbs (2017), recommend that less intensive interventions may be cost-effective and accessible, and that even brief self-help therapies can reduce BED-symptoms. Wilfley, Agras and Taylor (2013) recommend using internet tools as a way of conserving resources. Consequently, it may be argued that addressing ED issues more broadly, (e.g. concerns around body shape/ weight) may prevent individuals from developing a full-blown ED. Addressing such problems before they become too severe, may also help make economical savings, as less acute ED problems may be addressed with less professional input and for less time. It may therefore be important to offer interventions that can be easily accessed by these individuals, within the community, in a way that is both economical and acceptable.

New Treatment Approaches to Eating Disorders

As stated, despite progress and development in the treatment of EDs, clinically significant change (CSC) recovery estimates for ED-symptoms are approximately 50% (e.g., Castellini et al., 2011; Hilbert et al., 2012; Wilson, 1996) with remission rates across studies between 19%-65% (Smink, van Hoeken, & Hoek, 2013). Linardon, Fairburn, Fitzsimmons-Craft, Wilfley, and Brennan, (2017) systematically reviewed 27 studies and meta-analysed 13 studies, exploring the empirical status of third-wave behavioural therapies (dialectical behaviour therapy; DBT, schema therapy; ST, acceptance and commitment therapy; ACT, mindfulness-based interventions; MBI, and compassion-focused therapy; CFT). They found that these significantly improved ED-symptoms but were generally not superior to other treatments, including CBT. The authors found that numerous studies pointed towards the efficaciousness of third-wave behavioural therapies for BN and BED. However, they found limited efficacy research (RCTs) on third-wave therapies for EDs but that clinicians seem to implement such therapies with ED clients. Thus, to ensure clients receive empirically supported and best quality treatments, and to explore and develop interventions that may increase the current recovery rates from established treatments for EDs and ED-symptoms, it would be important that the effectiveness and efficacy of these third-wave therapies begins to be evaluated, first at a smaller scale, and then in RCTs. This may be especially true given that, research suggests (Juarascio, Manasse, Schumacher, Espel, & Forman, 2017; Wonderlich et al., 2014) that though CBT-E has improved outcomes, a greater variety of ED psychological treatments, such as third-wave therapies, are needed, given there is still room for improvement in current treatments. Such approaches may address issues that drive ED-symptoms and are not currently addressed by CBT-E, such as shame, self-criticism and self-directed hostility (Goss & Allan, 2014; Troop, Allan, Serpell, &

Treasure, 2008). Furthermore, it is hypothesised that those experiencing ED-symptoms may struggle to adhere to behavioural components of CBT-E. This may be because CBT-E does not provide skills for regulating the negative affect that drives ED-symptoms, or that arises from trying to comply with behavioural interventions (Juarascio et al., 2017).

Indeed, national UK guidelines (NCCMH, 2004) have also recommended improvements in psychological interventions of EDs by ensuring interventions target the processes that underlie and maintain these disorders. Some of the main experiences of individuals suffering from an ED include over-concern and criticism of their weight and body-shape. Barrow (2007) found that self-criticism and decreased self-compassion was significantly more prevalent in ED patients than in healthy controls. Similarly, self-criticism has been found to predict eating psychopathology (Fennig et al., 2008).

In the context of Compassion Focused Therapy (CFT), Goss and Allan (2014) explain that, individuals with ED-symptoms experience self-directed hostility towards their shape, weight, and eating. They suggest that these individuals experience heightened internal threat, triggered by their self-criticism and sense of defectiveness. They therefore propose that the opposite of such experiences could be self-compassion; the ability to practice kindness towards one's suffering (Neff, 2003). Accordingly, they have advocated for the use of self-compassion in the treatment of ED-symptoms. Thus, easily accessible interventions aiding individuals to develop self-compassion could be a helpful addition to treating ED-symptoms. Being able to complete these interventions instead of rejecting them or disengaging from them, may increase their efficacy (Grey, 2016).

Self-Compassion interventions: Theory. Neff (2003) defines self-compassion as being empathic towards ones' suffering, and then treating oneself kindly. Self-

compassion encompasses self-kindness, common humanity (i.e., appreciating that we all suffer) and mindfulness. Gilbert (2009) further theorised compassion within an evolutionary framework and developed Compassion Focused Therapy (CFT). According to Gilbert's theory, humans have evolved three emotion regulation systems. The first, called the 'threat system,' concerns self-protection from potential threats. The second system, called the 'drive system,' aims towards achievement and resource-seeking. The third, called the 'soothing system,' facilitates contentment and social connections. According to Gilbert, self-compassion is crucial to achieve balance among these three systems. Thus, CFT aims to enable individuals to be more self-compassionate and access their soothing system, which is proposed to be underused in people with mental health difficulties. Increased self-compassion would alleviate distress stemming from an over-active threat or drive system, and improve psychological wellbeing (Gilbert, 2009; Gilbert & Procter, 2006).

Goss and Allan (2014) adapted CFT for EDs by developing CFT-E. This proposes that ED-symptoms help individuals who are highly self-critical regulate threat. For example, people with anorexic tendencies regulate their emotions and their sense of identity through being competitive in their body appearance and eating-habits. By over-focusing on this, they reduce their capacity to be self-compassionate. CFT-E has extended Gilbert's three-system model of emotional regulation, positing that people with EDs activate their drive system to minimise their sense of threat by trying to achieve pride from ED-behaviours. CFT-E further suggests that, this over-activation of the drive system decreases access to the soothing system. Thus, for those with ED-symptoms, their drive/pride and threat systems often become entangled, resulting in distress. This then creates a vicious maintenance cycle: Individuals experience increased

threat, and decreased capacity to self-soothe, hindering their capacity for emotional regulation. Therefore, CFT-E aims to enable individuals with an ED to activate their soothing system by increasing their self-compassion (e.g., with self-compassion imagery practices). This would enable them to effectively regulate their threat and drive systems. Thus, they would break the vicious cycle of distress, which their ED-symptoms cause them. Indeed, in their meta-analysis (MacBeth & Gumley, 2012) demonstrated a large effect size for the negative relationship between self-compassion and psychopathology (i.e. depression, anxiety, and stress).

Self-Compassion interventions. Various self-compassion interventions have recently been developed to assist clinical and non-clinical populations improve their mental health through increased self-compassion. Gilbert's CFT (2009) relates to the therapeutic application of his three systems theory of emotional regulation and employs a range of skills called Compassionate Mind Training (CMT). It incorporates mindfulness, soothing breathing, and compassionate letter-writing to help individuals access their soothing system and increase their self-compassion. CMT has been shown to effectively reduce anxiety, depression and shame in individuals high in self-criticism (Gilbert & Procter, 2006).

Similarly, building on Neff's definition of self-compassion (2003), Neff and Germer (2013) developed Mindful Self-Compassion (MSC). MSC teaches self-compassion via interpersonal exercises, guided meditations (e.g., mindfulness and loving-kindness meditations; LKM) and informal practices, to increase the practice of self-compassion in everyday life. Compared to wait-list controls (WLC), MSC demonstrated promising results in an RCT, whereby participants in the MSC arm experienced increased compassion for self and others, greater mindfulness and life-

satisfaction, and lower depression, anxiety and emotional avoidance levels (Neff and Germer, 2013).

More recently, compassion-based interventions have shown promise in treating EDs. Goss et and Allan (2014) cite that Holtom-Viesel, Allan, and Goss (2014) found that introducing a CFT psycho-educational component to a CBT treatment of EDs was associated with increases in self-compassion, and reductions in self-criticism and ED-symptoms. These improvements only occurred when the CFT component was introduced. Furthermore, Kelly, Carter, Zuroff and Borairi (2013) found that individuals with high fear of self-compassion and low self-compassion at the beginning of a standard ED-treatment, experienced significantly poorer outcomes than those with higher self-compassion and lower fear of self-compassion at the beginning of treatment.

Recent studies have demonstrated the effectiveness of self-help self-compassion interventions offered online. In a pilot feasibility study, McEwan and Gilbert (2015) found that the practice of compassionate-focused imagery provided via audio-clips online (CFI-online) without clinician support was acceptable, safe and beneficial to university students. For five minutes daily for two weeks, participants practiced a meditation guiding them to imagine an ideal ‘compassionate other’, and a ‘compassionate ideal self’. Findings suggested this intervention was safe and effective in increasing self-compassion and self-reassurance and reducing self-coldness, self-criticism, depression, anxiety, and stress. These benefits were maintained after six months and were more pronounced in initially higher self-critics. The authors suggested that this intervention can now be tested in other, more varied populations who may be experiencing higher levels of distress.

Similarly, Kelly and Carter (2015) in a pilot RCT with individuals with BED found that, the group which used self-help self-compassionate exercises online experienced more improvements in ED-symptoms than controls and a behavioural intervention group. Further, an online self-help self-compassion meditation study by Albertson, Neff and Dill-Shacklefor (2015) showed that women with body-dissatisfaction and eating concerns experienced significantly increased self-compassion and body-image satisfaction compared to controls. Thus, Albertson et al. (2015) recommended that research should next measure the impact of these self-compassion interventions on ED behaviours and attitudes.

Previous Literature Reviews on Self-compassion and ED-symptoms

Braun et al. (2016) reviewed 28 studies on the relationship between self-compassion, body-image and eating. They found that most studies evidenced a significant beneficial relationship between self-compassion and body-image and eating behaviours, whereby self-compassion appeared to protect against ED-symptoms. However, the review only included four intervention studies and only two were with an ED-population. To the best of the author's knowledge there has only been one meta-analysis exclusively on compassion-based interventions (Kirby, Tellegen, & Steindl, 2017) whereby 21 RCTs were reviewed on a range of outcomes (compassion, self-compassion, mindfulness, depression, anxiety, psychological distress, and wellbeing). Significant moderate effect sizes were found for improvements in these outcomes. However, ED-outcomes were not meta-analysed. Kirby (2017) offered an overview and synthesis of various compassion-based interventions and concluded that they produced beneficial results in various clinical outcomes. However, this review included only one RCT in ED. Kirby recommended that specific components of compassion-based approaches need to

be evaluated separately and with different populations, within RCT designs. Kirby also suggested that the 'lighter touch' versions of these interventions would need to be further evaluated and developed to use more widely. Though the above reviews and meta-analysis are promising, they did not focus explicitly or exclusively on compassion-based interventions for ED-outcomes. As such, these findings may not generalise to those experiencing ED-symptoms. Therefore, the next section will systematically review research on self-compassion interventions for ED-symptoms.

The Effectiveness of Self-Compassion Interventions for People with Eating Disorder symptoms: A Systematic Review and Meta-analysis

Rationale and Aims for the Current Review

More intervention studies on ED-outcomes and self-compassion interventions have been published since the recent general review and meta-analysis of compassion-based interventions by Kirby (2017) and Kirby, Tellegen, and Steindl, (2017) and since the review by Braun et al., (2016). Kirby's and Kirby's et al. review and meta-analysis did not systematically or explicitly focus on self-compassion interventions for ED-symptoms, whereas Braun et al., only included four intervention studies for ED-outcomes. Of these, three employed a randomised trial (RCT) design but were not meta-analysed and only one RCT was with an ED population. Thus, neither of these reviews were systematic, or employed a meta-analysis exploring ED-outcomes.

The present review aimed to add to previous reviews and systematically review the effectiveness of self-compassion-based interventions specifically in reducing eating psychopathology and ED-symptoms, in clinical and non-clinical populations. The

secondary outcome of self-compassion will also be explored. It also aimed to, where possible, meta-analyse findings to evaluate efficacy on the primary outcome of eating psychopathology and ED-symptoms and the secondary outcome of self-compassion. The review further aimed to provide an updated synthesis and assessment of the recent evidence on a variety of compassion-based interventions, addressing a range of ED-outcomes.

Method

Inclusion/ exclusion criteria. Included studies had to be published by a peer reviewed journal. Clinical and non-clinical adult populations were included, if the study included and targeted an ED outcome. Interventions had to involve at least one compassion-based intervention and could employ any treatment modality. Studies from all nations published in English language were included. Given efficacy research in the area is nascent and thus limited, randomised controlled trials and uncontrolled trials were included. Studies which did not explicitly employ self-compassion interventions to address ED-outcomes, and which included participants under 18 years old were excluded. This is because younger individuals may respond to self-compassion differently to an adult population.

All potentially relevant literature was initially identified by searching four computerised journal databases: CINAHL Complete, PsychArticles**,** MEDLINE with Full Text, and PsycINFO**.** The main features of each study are presented in Table 1 and Table 2.

Search strategy. Initially, the relevant literature was broadly explored, to contextualise the focus of the current review, identify key search terms and to define

the inclusion/ exclusion criteria. The key search terms noted in the Braun et al. (2016) review were considered.

A systematic search was conducted on the 4th of January, 2018. Electronic databases were searched using the key search terms “compassion”, “eating disorder”, “effectiveness” (see Appendix A). The *priori* limits ‘English language’ and ‘peer reviewed’ were applied. Identified articles were combined.

Study Selection. The title and abstract of 79 articles identified by the initial search were screened. Articles were screened against the inclusion/ exclusion criteria. The reference list of the included set of articles and the work of authors of papers that were selected for inclusion were searched for additional articles that met the inclusion/ exclusion criteria for the review (see Figure 1 for record selection process).

Data extraction. The included nine articles were systematically reviewed using a data extraction form (Appendix B) based on the Cochrane Library Guidance (Higgins & Green, 2011). Features of each article were summarised including methodology, sample characteristics, and treatment condition.

Quality assessment. The *Checklist for Measuring Quality* (Downs & Black, 1998) was used as a basis for appraising the identified articles. The checklist consists of 27 questions, providing criteria by which the reviewer can evaluate both randomised and non-randomised studies, which this review included. It includes questions around reporting, external validity, internal validity and bias, internal validity and confounding variables (selection bias), and items are rated ‘yes’ or ‘no’, dependent on whether they had been evidenced. The checklist was applied flexibly to fit the various included studies

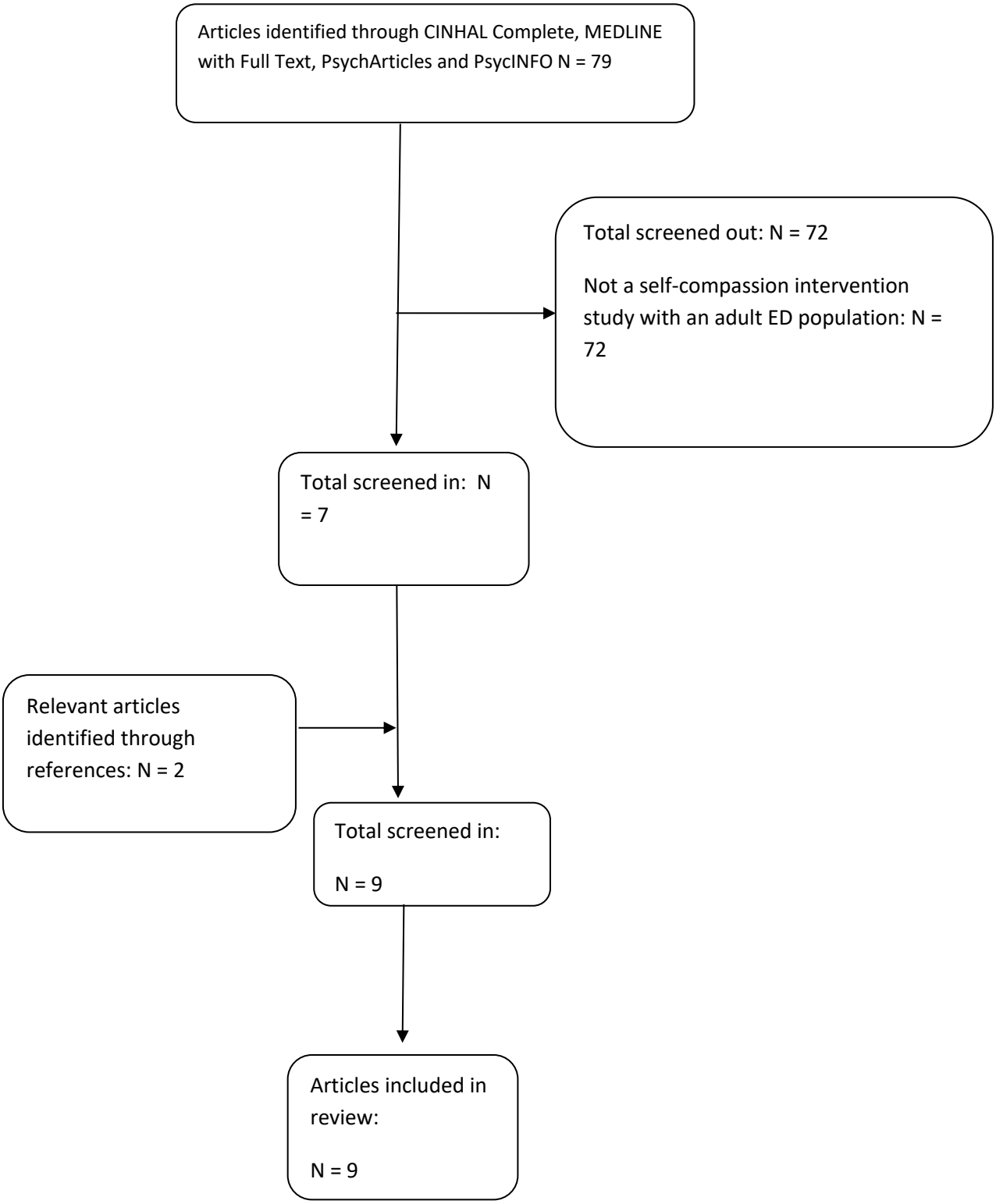


Figure 1. Record selection process

and was used to guide the evaluation of studies as opposed to score their quality. Greenland (1994) and Connor, Ryan, Baxter, and McDonough, (2015) recommend against using numerical scores from quality appraisal tools to rate trials as having low or high quality, as they have found such ratings to be unreliable at identifying studies that have probable sources of bias. Thus, the review followed the recommendation by O'Connor et al. It used the checklist as a guide and a framework of recognising and discussing methodological strengths and limitations, investigating components of it individually and descriptively. Studies were not excluded based on the methodological assessment.

Data analysis and synthesis. As the review included RCTs and uncontrolled studies, narrative synthesis was used as an aid to data analysis (Popay et al., 2006). A meta-analysis was conducted using RevMan 5.0.1 software. Scores of continuous data were analysed using mean difference (MD) for outcomes using the same measure, or standardised mean difference (SMD) when combining data from different outcome measures, and 95 % confidence intervals (CIs). Random effect modelling was used to pool data to estimate the overall effect of all interventions. This model is recommended over the random effects model when, as in this meta-analysis, the included studies have large variations in the type of participants recruited, and in the nature and length of the interventions (Borenstein, Hedges, Higgins, & Rothstein, 2009). To calculate effect sizes, post-intervention and follow-up data that were provided in the included studies were used. Therefore means, standard deviations and sample sizes were extracted from the included studies. If an outcome of interest was examined by at least two RCT's, then a meta-analysis was conducted on this outcome (Borenstein et al., 2009).

Results

The literature search yielded nine studies that met the inclusion criteria and the key features are summarised in Table 1 and Table 2. The general characteristics of the included studies are initially summarised below. The review then summarises the critical appraisal and key methodological limitations evidenced across the included studies. The selected studies evaluated whether introducing the concept of self-compassion to individuals who experienced either an ED, or ED-symptoms would lead to an alleviation of their ED-symptoms.

Participants and settings. All studies bar two, (Kelly & Carter, 2015; Gale, Gilbert, Read, & Goss, 2014) which included 82% and 96% females respectively, only included females. Studies included various ages as participants' ages ranged between 18- 62 years. Six studies reported participants' ethnicity, which was almost entirely Caucasian. Thus, findings may not generalise to non-Caucasian, nor male populations. Three studies were conducted in Canada, three in Portugal, and one in the USA. Only two studies were conducted in the UK, and neither of which were RCT's. Thus, whilst there is growing research in this area in Canada and Portugal, there is limited research in the UK and the current evidence may not generalise to a UK population.

Toole and Craighead (2016) recruited an undergraduate, non-clinical university population who self-identified as having body-image/ appearance concerns. Similarly, Albertson, Neff, and Dill-Shackleford, (2015) recruited women online who did not have an ED diagnosis but self-identified as experiencing shape/ body-image dissatisfaction. Three studies recruited from ED clinics, where individuals were clinically diagnosed with either a variety of EDs (Gale et al. 2014; Kelly, Wisniewski, Martin-Wagar, & Hoffman, 2017) or of BN and OSFED (Tsivos, Brown, Whitelock, & Sampson, 2017). Duarte, Pinto-

Gouveia, and Stubbs, (2017) and Kelly and Carter (2015) recruited participants who were deemed to have BED after a clinical interview from the researchers based on the DSM-5 BED diagnostic criteria. Pinto et al. (2017), recruited from an endocrinology department and the community women diagnosed by the researchers using the eating disorders examination (EDE) interview and scores over the cut-off score of 17 on the Binge-eating Scale (BES), and a body mass index (BMI) ≥ 25. Palmeira, Pinto-Gouveia, and Cunha (2017) recruited from a primary care weight control clinic, females without a BED. Therefore, six of nine studies recruited participants who likely met criteria for an ED, whereas three recruited from non-clinical populations, with non-clinical levels of ED-symptoms.

Study Design and comparison groups. Six out of nine studies employed an RCT design. Three of these compared with an active control group. Kelly et al., 2017, and Palmeira et al., 2017 compared with evidence -based TAU, whilst the intervention group also received TAU. In Kelly et al., (2017) TAU included individual therapy, nutritional and psychiatric appointments. In Palmeira et al., (2017) TAU entailed medical and nutritional appointments, offering nutritional and exercise recommendations and planning and weighing, as well as addressing medical comorbidities. Kelly and Carter, 2015, compared with CBT-self-help and a wait-list. Three of the RCTs compared with a wait-list group. Two of the three non RCTs did not use a comparison group, whereby Pinto-Gouveia et al. (2017) used a wait-list control group. Gale et al. used repeated measures, pre-post intervention design and Williams et al. (2017) used a case-series design (See Table 1 and 2).

Methodological/ design issues. Barker and Pistrang (2015) suggest that pre-post designs that lack a randomised control group, suffer from internal and construct validity

threats. With regards to threats to construct validity, participants in Williams et al. (2017), and Gale et al. (2014) and to a degree Pinto-Gouveia et al. (2017) may have experienced changes due to; spontaneous changes within them ('endogenous change'), generally maturing as people, or other events aside from the intervention that occurred during the same time. Due to lack of randomisation in Pinto-Gouveia et al., equivalence of the intervention and comparison groups cannot be guaranteed. Thus, the internal validity of the study is also compromised.

Three of the six RCTs benefit from using active control groups. The TAU group in Kelly et al. (2017) though not manualised, included DBT and CBT. As the CFT group was offered as an adjunct to these therapies for the intervention group, it is unclear whether benefits gained were merely due to receiving more therapy overall. With regards to the remaining studies that did not use active comparison groups, these may suffer from threats to their construct validity. Changes and group differences cannot be confidently attributed to the self-compassion component of the intervention. Instead, changes may be attributed to expectancy effects and demand characteristics. Furthermore, without the use of an active control group, it is not possible to assess whether compassion-based interventions offer unique gains compared to other treatments for this population.

Table 1

Summary of RCTs included in the review

Author Study	**Intervention and number randomised**	**Sample size; Population type; Attrition rate (%)**	**Symptoms or diagnosis**	**Age (years) Mean**	**Measures**	**Post-baseline data available**	**Main findings**
Albertson et al., (2015)	Three-week self-help online (self-compassion meditation) n = 98 vs. WLC, n = 130	N = 228; multigenerational women (100%); online; 50%	Self-identifying as having body-image concerns	IC: M age=38.42; WLC: M age=36.42. Overall M age = 36.42	BSQ, BAS, CSW-Appearance subscales, SCS	Post-intervention at three weeks, FU at three months	Significant improvements in BAS (medium effect size), BSQ (medium effect size), and CSW (small effect size) and gains in self-compassion (large effect size) in the IC. All improvements were maintained at three months

Duarte et al., (2017).	Four-week self-help online (mindfulness, acceptance, soothing rhythm breathing and compassionate imagery), n= 11 vs. WLC, (n = 9)	N = 20; women (100%); community; 35%	BED diagnosis assessed by screening interview based on DSM-5	IC: M = 37.73; WLC: *M* = 35.78	EDE- 17.0D, BES, BIS, CAAS, SCS, FSRS	Post-intervention at four weeks, FU at one month	Significant improvements in BES (large effect), EDE-total (large effect), EDE subscale scores (medium/large effect), BIS (small effect), DASS-21 (small effect), the inadequate self form of self-criticism FSRS subscale (small effect), and increases in acting with Awareness and Self-reassurance in the CASS (small effect) in the IC. Nearing significant improvement on self-compassion (p = .054, small effect), but within IC change was significant and of medium to large effect.
Kelly et al., (2015).	Three-week self-help online (food planning plus CFT-based self-help: self-imagery, self-talk, and letter-writing for over-eating) n = 15 vs active control group (behavioural self-help) n= 13 vs. WLC (n = 13)	N = 41; BED patients, women (82%); online; 26.6%	DSM-5 BED diagnosis assessed by screening interview and self-report measures	M = 45 years, not reported for each group	EDE-Q, CES-D, SCS.	Post-intervention at three weeks, no FU	Significantly greater improvements in EDE-Q and SCS scores in the IC (medium effect). No group differences in CES-D.

Kelly et al., (2017).	*12-weekly sessions of clinician-led group (CFT adapted for ED plus TAU), n = 11 vs. TAU, n = 11*	N = 22; women (100%); outpatient ED clinic; 20%	Approximately 30% of the sample had AN, 15% had BN, 20% had BED and 35% had a non-BED form of EDNOS	*IC: M =* 36.73; TAU group: M = 27.10	EDE-Q, SCS, FCS, ESS,	Post-intervention at 12 weeks, no FU	Significant improvements in EDE-Q Global, (large effect), SCS, (moderate to large effect), the negative subscale of SC (large effect), FCSC (medium effect size)
Palmeira et al., (2017).	10-weekly sessions of clinician-led, group (Mindfulness, ACT and self-compassion plus TAU) n = 32 vs. TAU (medical and nutritional meetings), n = 27	N = 59; overweight/ obese women (100%); primary care setting; 25%	BMI > 25, without bingeing, seeking weight-loss treatment	IC: M = 41.97; TAU group: M = 42.73	TFEQ-R21 (emotional and uncontrolled eating subscales) SCS; FSCRS	Post-intervention at 12 weeks, no FU	Significant improvements in TFEQ-R21 subscales (medium effect and large effect), inadequate self and hated-self subscales of the FSCRS (medium to large effect sizes). Nearing significant increases in the SCS, (medium effect) in the IC.

Toole et al., (2016)	One-week self-help online self-compassion training (soothing breathing, compassionate body scan, LKM), n = 40 vs. WLC, n = 40	N = 80; female students (100%); university, 7.50%	Self-identifying as having body -image concerns.	M = 18.85	SCS, BSQ-, BAS, CSW-Appearance; Body dissatisfaction subscales; RSES	Post intervention at one week, no FU	Significant reductions on the negative SCS subscales compared to controls, (medium effect size) in the IC. Significant improvements in BAS (small effect); appearance-contingent self-worth, (small effect); and body surveillance (small effect) in the IC. Significant follow-up within-IC improvements in BAS appearance-contingent self-worth, and body surveillance. Controls did not change significantly. Non-significant group-by-time interaction for body-shame and body-dissatisfaction.

Key: Body Appreciation Scale; BAS, Binge Eating Scale; BES; Body Image Scale; BIS, Body Shape Questionnaire ; BSQ, Center for Epidemiological Studies for Depression; CES-D, Compassionate Engagement and Action Scales; CASS , Contingencies of Self-Worth Scale; CSW, Eating Disorder Examination 17.0D; EDE

– 17.0D, Eating Disorder Examination Questionnaire; EDE-Q, Forms of Self-Criticism and Self-Reassurance Scale; Fears of Compassion Scale FSRS; FCS, Experiences of Shame Scale; ESS, The Rosenberg Self-Esteem Scale; RSES, Self-Compassion Scale; SCS. Three Factor Eating Questionnaire-21R; TFEQ-R21.

Table 2

Summary of controlled trials and cohort studies included in the review

Author Study	**Study Design**	**Intervention and number allocated**	**Sample size; Population type; Attrition rate (%)**	**Symptoms or diagnosis**	**Age (years) Mean (SD)**	**Measures**	**Post-baseline data available**	**Main findings**
Gale et al., (2014)	Longitudinal, pre-post	24 sessions group CBT augmented with CFT, IC, N = 99	N = 99; women (96%), outpatient ED clinic; 28%	Transdiagnostic ED UK sample, diagnosed from NHS ED clinic	M = 28.01 years	EDE-Q, SEDS, CORE-OM.	Post-intervention, no FU.	39% CSC and statistically significant change on the EDE-Q Global (large effect size). Clinically significant improvements on all measures.

Pinto-Gouveia et al., (2017)	controlled longitudinal design	12 sessions, clinician-led group (psychoeducation, mindfulness and compassion-based components), n = 19 vs. WLC, n = 17	N = 59; women (100%), from the community and an endocrinology clinic; 45%	BED, assessed by EDE interview from clinical psychologists from the research team, and by scores on BES > 17 as the threshold for binge eating and with BMI ≥ 25)	IC: M = 42.72 years WLC mean age not reported.	EDE 16.0D, BES, SCS BIAAQ, CFBIQ	Post-intervention, three and six months FU.	Significant improvements in EDE 16.0D, BES, CORE-OM, body-image psychological body-image cognitive fusion, and self-criticism SCS subscale (medium-to-large effect sizes) but not in SCS compared to WLC. Results were maintained at three and six months.
Williams et al., 2017	Preliminary Case Series-retrospective evaluation of routinely collected data	15-27 fortnightly, one-hour individual therapy CFT-E sessions, N = 9	N = 9; women (100%), outpatient NHS ED service. Attrition not reported	DSM-5 diagnosis of BN, or OSFED diagnosed from NHS ED clinic	M = 29.33 years	EDE-Q, no self-compassion measure	Post-intervention, no FU	Clinically reliable and statistically significant improvement in EDE-Q global and subscale scores, large effect sizes (d > .8)

Key: Binge Eating Scale; BES; Body Image-Acceptance and Action Questionnaire; BIAAQ, Cognitive Fusion Body - Image Questionnaire; CFBIQ, Clinical Outcomes in Routine Evaluation – Outcome Measure, CORE-OM, Eating Disorder Examination 16.0D; EDE – 16.0D, Eating Disorder Examination Questionnaire; EDE-Q, Self-Compassion Scale; SCS, Stirling Eating Disorders Scale, SEDS.

Outcome measures. Gale et al. (2014) used the self-directed hostility subscale from SEDS to measure self-compassion without providing measures of convergent validity or face validity or other psychometric evaluations. However, the construct of self-directed hostility, similarly to self-criticism, has been argued in the literature to be a distinct from self-compassion (Gilbert, McEwan, Matos, & Rivis, 2011). Some studies (e.g. López et al., 2015) have proposed a two-factor model for the SCS whereby the positive and negative dimensions of the SCS represent self-compassion and self-criticism, respectively and that these factors are distinct processes that should be measured separately. Thus, confidence in conclusions from this study that amelioration of symptoms was associated to increases in self-compassion may be limited.

The EDE-Q/ EDE 17OD/ EDE 16OD were the most commonly eating psychopathology primary outcome measures used in seven studies. In two studies, the BES was used to measure binge-eating. Studies exploring ED-outcomes related to body-image in non-clinical populations mainly used the BSQ, BAS, CSW (e). All outcomes evidenced good internal reliability across the studies. As all measures were self-report, they may suffer from socially desirable responding, and memory bias.

Intervention type and duration. Roughly half of the studies used low-intensity self-help online interventions for individuals mainly experiencing non-clinical levels of ED-symptoms, except Kelly and Carter (2015) who offered online self-help for three weeks to a sample of BED patients. The other half offered longer term, clinician-led, compassion-based interventions, either as a component/adjunct to other evidence-based interventions or stand-alone treatments.

Low-intensity, short-term, individual self-help online. Four out of nine studies used self-help guided meditations podcasts accessed online or provided digitally. Duarte et al. included an initial lab-based session whereby participants were introduced four-week low-

intensity interventions of mindfulness, acceptance, compassionate breathing and imagery. Albertson et al. (2015) and Toole et al. (2016), offered the same self-help online podcasts but Albertson et al. asked participants to practice the meditations daily for three weeks. whereas Toole et al. asked participants to practice for a week, in hope of reducing attrition. These podcasts were three, 20-minute long meditations. They incorporated aspects of self-compassion using affectionate breathing, compassionate body scan and loving kindness meditation (LKM). Kelly et al. (2015) included online compassionate self and compassionate other imagery and compassionate letter-writing, taking more directly from CFT theory. The intervention, similarly to the control group, also included food planning and was three weeks long, as in Albertson et al. (2015). Williams et al. (2017) offered CFT-E hour-long fortnight sessions, for a range of 15-27 sessions, depending on patient need.

Long-term group interventions. Gale et al. (2014), Kelly et al. (2017), Palmeira et al. (2017) and Pinto et al. (2017) used long-term, group interventions. Gale et al. (2014) added CFT elements within a CBT group intervention for ED in a transdiagnostic ED sample for 20 sessions over 16 weeks. This study used retrospective data from groups ran over a duration of 5 years. Kelly et al. (2017), used CFT- adapted in addition to TAU for ED, in a weekly group for 12 weeks. Both Gale et al. (2014) and Kelly et al (2017) explored elements of developing a compassionate self and using imagery to build a compassionate other, and suggested homework around these. Similarly, Palmeira et al., (2017) offered 10 weekly group sessions, plus 2 bi-weekly booster sessions. They incorporated self-compassion aspects from CFT with ACT and mindfulness practices. Participants were also provided with audios to practice self-compassionate meditations at home between sessions. Pinto-Gouveia et al. (2017) offered 'Befree', integrating psychoeducation, mindfulness, and compassion-based components in small, clinician led – groups for 12, 2.5hr weekly sessions. All long-term group studies bar Palmeira et al. (2017),

were conducted with individuals meeting criteria for an ED. Given the above studies offered group interventions, it is possible that observed outcomes were a result of group participation, as opposed to the compassion-based intervention offered.

Treatment Fidelity. In terms of treatment fidelity, for clinician-led interventions, only Kelly et al. (2017) and Palmeira et al. (2017) used a manualised approach for CFT. Gale et al. (2014) reported that their intervention 'became more CFT' towards the end of the 5-year period of the study. This compromises conclusions this study makes about the effectiveness of CFT as an adjunct in the treatment of ED. On the contrary, studies which evaluated online self-help interventions used pre-recorded compassion-based meditations, freely available online. Thus, they offered standardised, easily accessible interventions across participants. Consequently, these studies benefit from high internal validity and are easily replicable.

Adherence. Adherence was measured by all four online studies and in all of these, participants seemed to attempt practices less than the recommended daily amount. Three of these studies used self-report adherence measures. Kelly and Carter (2015) additionally used objective measures, by automatically recording whether the online meditation link was opened by the participant and Toole and Craighead (2016) only used this objective measure. However, both ways of measuring adherence may not have been reliable. Opening a link would not necessarily mean practising the meditation, whereas self-report adherence measures may have been affected by socially desirable responding and memory biases. Kelly and Carter benefit from having used both methods, thus validating their findings related to adherence.

Blinding. All the studies of clinician-delivered interventions suffer from the limitation that the clinician was often also part of the research team (e.g. Palmeira et al., 2017) and was not blind to study hypotheses, thus potentially biasing findings. Furthermore, as all bar one (Williams et al. 2017) of the clinician-led interventions were offered in group settings, some of

the findings may have been due to effects stemming from group participation, such as peer support (Yalom & & Leszcz, 2005) as opposed to the intervention.

Participant blinding. None of the intervention studies blinded participants to their hypotheses. Indeed, all studies recruited individuals seeking improvement in their ED-symptoms. Only Kelly and Carter (2015) controlled for expectancy effects, statistically, in their analysis. Thus, progress in the samples of all other studies, both in control groups and in intervention may have occurred in part due to demand characteristics.

Randomised controlled trials.

Randomisation. Out of the RCTs, there was no reporting of methods of randomisation in Albertson et al. (2015) and Kelly and Carter (2014). Only Palmeira et al. (2017) suggested that data collection was carried out by a clinician blind to the study hypothesis. However, Albertson et al. (2015), Kelly and Carter (2015), and Kelly et al. (2017) collected data online. Thus, risk of experimenter bias was lower compared to the remaining studies. These ran a higher risk for experimenter and confirmation bias, given the researchers were directly or indirectly involved with delivering the intervention (e.g. Kelly et al., 2017; Palmeira et al., 2017). Duarte et al (2017) invited participants to complete outcomes in the lab. This may have increased socially desirable responding, thus biasing data collecting procedures. An intention-to-treat analysis was used in all bar two RCTs (Albertson et al., 2015; Duarte et al. 2017). William et al. (2017) study used retrospective data and did not report therapy drop outs.

Attrition.

Online studies. The three-week study by Albertson et al. (2015) reported a 50% attrition rate whereas the similar but one-week study by Toole and Craighead reported attrition was 7.5%. In Kelly and Carter (2015), attrition was 26.6% for their 3-week intervention. Similarly,

Duarte et al. reported 35% attrition rate from their four-week online study, which included an initial face-to-face 2.5-hour psychoeducation session. In Toole and Craighead and Duarte et al. post-intervention measures were completed in the lab and participants met with the researchers in initial outcome completion sessions. It is possible that low attrition rates in Toole et al., were because; participants who completed the study were awarded course credit, the intervention was shorter than all others, and measures were completed in the lab, thus potentially enabling rapport with researchers. Instead, measures in Albertson et al. and Kelly and Carter were collected online, with no contact with researchers. It may therefore be that, longer studies conducted exclusively online and that provide no contact with the researcher nor incentives for study completion are associated with higher attrition.

Clinic-based studies. Gale et al. (2014) reported 28% attrition rate, attributing it to not having a research assistant collecting outcome measures routinely as the study started as an audit. Attrition in Kelly et al. (2017) was 20%, 25% in Palmeira et al. (2017), 35% for Duarte and 45% for Pinto-Gouveia et al., (2017). Lambert Ogles, (2004) recommend that attrition rates for clinician-led interventions should not exceed 33% if an intervention is to be deemed feasible. Thus, three studies approached this rate, and two exceeded it.

Drop out characteristics. Five studies did not attempt to describe those who dropped-out or to evaluate differences between completers/non-completers, or record attrition reasons. Albertson et al. (2015) reported that those who dropped out reported technical challenges or lack of time. The authors found that post-test outcome follow-up rates were 18% lower for the intervention group and attributed this to wait-list controls being incentivised by wanting to receive the meditation podcasts as promised by the end of the study. Kelly et al. (2017) and Kelly and Carter (2015) found no differences in demographic variables and intervention outcomes between those who dropped out and those who completed the study. In Kelly and

Carter, reasons by the four participants who dropped out included life events, no computer or internet access, or finding the letter writing exercises too difficult. In Palmeira et al. (2017) the only significant difference between those who dropped out and those who completed the study was that non-completers reported less years of education.

Power estimation. Only Palmeira et al. (2017) and Duarte et al. (2017) conducted a formal power analysis. Palmeira et al. met the sample size criterion for detecting significant results of a large effect size, despite attrition. However, Duarte et al. did not achieve a sample size large enough to detect small to medium effect sizes, as they set out to do. Their total sample size was small (N = 20) and only allowed for detection of large effect sizes. All studies except Toole and Craighead (2016), Palmeira et al. (2017), Gale et al. (2014), and Albertson et al. (2015) alluded that their sample size was limited and impacted by attrition, limiting confidence in their conclusions. Despite the high attrition rate in most of the studies, none recalculated power. Nevertheless, medium to large effect sizes were obtained in outcomes in these relatively small samples, illustrating the strength of the results.

Effects of Compassion-based Interventions

This section synthesises the evidence available from the studies included in this review. The effectiveness of compassion-based interventions for ED-symptoms will be explored whilst considering methodological and design issues. Data from the six RCT's will then be meta-analysed to explore the efficacy of the interventions. Significant improvements in ED-outcomes between treatment and control conditions were found in all studies (See table 1 and 2).

Eating disorder-symptoms. Duarte et al., (2017) and Pinto-Gouveia et al. (2017), found that their interventions significantly reduced binge-eating symptoms and eating psychopathology with medium to large effect sizes. Kelly et al., (2015) and Gale et al. (2014) found medium effect sizes for significant improvements in EDE-Q scores, whereas Kelly et al.,

(2017) and Williams et al., (2017) found a large effect size for significant EDE-Q improvements. Using less well-known measures, Palmeira et al. (2017) obtained a medium effect for significant decreases in emotional eating and large effect for uncontrolled eating.

Body-image related-symptoms. Duarte et al. (2017) and Albertson et al. (2015) found significant body-image shame decreases, with small effect sizes. Albertson et al. and Toole and Craighead (2016) also obtained medium and small effect size significant improvements in body-appreciation. Albertson et al. also found significant improvements in body-dissatisfaction (medium effect size). Furthermore, Albertson et al. and Toole et al. detected small effect size significant improvements in contingent self-worth based on appearance. However, using the same measures with the similar study by Albertson et al. with an older female population experiencing body-dissatisfaction, Toole et al. did not find improvements for body-shame and body-dissatisfaction. This could be because Toole et al. only offered a one-week intervention, whereas Albertson et al. offered their intervention for three weeks. This may suggest that self-compassion is a complex issue to grasp and use, to address ones' body-shame/ dissatisfaction. Thus, longer interventions may be necessary. For Kelly et al. (2017) results were clinically significant for shame, whereby post-treatment mean scores fell within one standard deviation of mean scores in community samples.

Compassion. Eight out of nine studies included measures of self-compassion, and the most commonly used was the Self-Compassion Scale (SCS; Neff, 2003). Gale et al. (2014) did not use validated measures of SCS and Williams et al. (2017) did not measure self-compassion. Albertson et al. (2015), Kelly et al. (2015) and Kelly et al. (2017) found that those in the intervention group experienced significant improvements in the SCS with a large, medium, and medium to large effect size respectively. However, four studies failed to find a significant improvement in SCS scores. Toole et al. (2016), and Pinto-Gouveia et al. (2017), did not obtain

significant group differences in the positively worded subscale of SCS nor the SCS-total respectively. Similarly, Palmeira et al. (2017) did not find significant differences between groups but found that participants' scores revealed an almost significant increase in the SCS, with a medium effect size. Echoing these results, Duarte el al. (2017) only found a marginally statistically significant, small effect difference favouring the intervention vs the control group on self-compassion on the SCS. However, within-group change here was significant and of medium to large effect. Using a different scale of compassion, the Compassionate Engagement and Action Scales (CEAS) (Gilbert et al., 2017) the authors also found a significant small size effect on improving engagement in compassionate actions. Gale et al. (2014) reported clinically significant improvements, but their measure of self-compassion was not a validated measure.

Self-criticism and self-judgment. Toole et al., (2016), Kelly et al. (2017) and Pinto-Gouveia et al., (2017) found that participants in their intervention groups reported greater reductions on the 'negatively worded' items of the SCS which they equated with self-criticism, or the self-judgement subscale of the SCS compared to controls, with medium effect size for Toole et al., and large effect sizes for Kelly et al. and Pinto-Gouveia et al. However, it can be argued that the negatively worded SCS subscale and the self-judgment SCS subscale may not exclusively measure self-criticism. Indeed, they each may measure something different from one another, and thus cannot be compared. Duarte et al., (2017) did not find significant differences between groups in the hated-self form of self-criticism, in FSCRS. However, they did find significant improvements in the inadequate-self form of self-criticism in FSCRS, with a small effect size. Palmeira et al. (2017) found significantly decreased levels of inadequate self, $p < 0.016$ and hated-self, $p < 0.007$ (medium to large effect sizes). Finally, Gale et al. (2014) found significant improvements in self-directed hostility in the SEDS subscale (small effect). As self-criticism can have a negative impact on self-compassion and is particularly present for those

with ED-symptoms, consistent measurement of self-criticism across those experiencing various levels of ED-symptoms is important. However, in the nine included studies, measurement of self-criticism was either inconsistent or not measured at all, thus not allowing for a meta-analysis of this measure.

Follow-up analyses. Albertson et al. (2015), Duarte et al. (2017) and Pinto-Gouveia et al., (2017) measured outcomes at three months, one month and both three and six months respectively. Albertson et al., found that all improvements were maintained at three months. In Duarte et al. (2017) effects were maintained for binge-eating, general eating psychopathology, overvaluation of weight and shape, depression and stress symptoms, cognitive fusion with food craving, body image psychological flexibility, self-compassion, and compassionate actions. Finally, Pinto- Gouveia et al. (2017) found that improvements were maintained at 3- and 6-month follow-up for eating psychopathology, binge-eating, depression, quality of life, body-image psychological inflexibility, body-image cognitive fusion, external shame, self-criticism, and self-compassion. However, all other studies are limited by lack of follow-up. They did not evaluate whether outcomes are maintained longer term, and whether engaging in self-compassion practices prevents relapse and facilitates improvements in outcomes, not just in the short-term or post-intervention, but also in the long-term.

Evaluating changes. Gale et al. (2014), and Williams et al. (2017) were the only to report clinically significant and reliable changes (CSC) using the criteria by Jacobson and Truax (1991). Gale et al. reported that 73% of those diagnosed with bulimia nervosa had 'recovered' and 4% 'improved', post-intervention. Of those with a diagnosis of AN, 21% were considered 'recovered', with another 37% making a significant improvement or scoring below the EDE-Q clinical cut-off score. Regarding EDNOS, 30% were 'recovered', with another 30% either classed

as ‘improved’ or ‘undetermined’. In Williams et al. five (55%) patients achieved SCS and reliable change.

Kelly et al. (2017) reported that the post-mean EDE-Q Global estimate of those attending the CFT group fell one standard deviation away from community mean norms (Mond, Hay, Rodgers, & Owen, 2006), and took this to indicate that results were on average clinically significant. However, this is not the recommended approach to reliably evaluate clinically significant change, as it does not assess change on an individual level, nor whether the change is reliable, (e.g., that it exceeds the standard error of measurement).

Furthermore, only Gale et al. (2014) and Palmeira et al. (2017) used the Bonferroni correction to protect from family wise error. Thus, most of the studies may have compromised their statistical conclusion validity by omitting this step. All seven studies that had a control group tested and statistically controlled where necessary, for confounding variables or baseline differences between the intervention and control group in their analyses, (e.g., prior meditation experience, age, duration of prior treatment and ED-subtype, education, socioeconomic status). Such variables could be significantly related to outcomes or contribute to group differences. Thus, controlling for these limited confounding, increasing the validity of findings in these studies.

Meta-analysis

The following meta-analysis aimed to evaluate the efficacy of self-compassion interventions on the primary outcomes of eating psychopathology and ED-symptoms and the secondary outcome of self-compassion**.** Outcomes which were investigated by at least two or more studies were examined in the meta-analysis. Given the two RCT studies that provided follow-up data did not examine the same outcomes, this meta-analysis only evaluated post-intervention data.

Eating psychopathology. A meta-analysis was conducted with four RCTs that had available eating psychopathology data and used the EDE-Q or EDE-1.7 (see figure 2). The standardised mean difference (SMD) has been used, as two different measures were used instead of the same measure across all four studies.

At post-treatment, when compared to control groups, compassion-based interventions reduced overall eating psychopathology (SMD = –2.68, 95% CI –4.85 to –0.51; heterogeneity I2 = 94%, P < 0.00001; df = 3, N = 129).

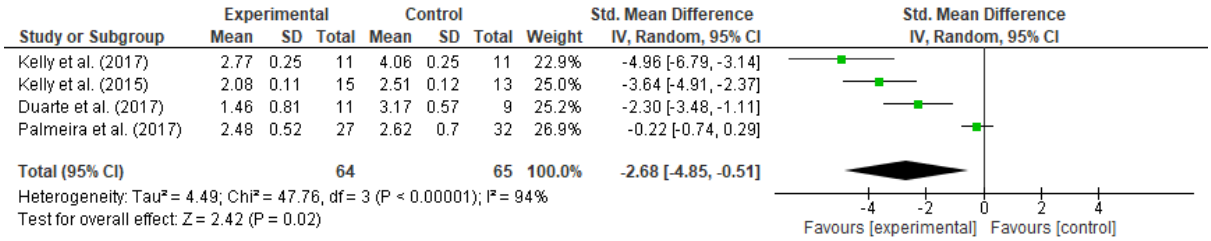


Figure 2. Eating psychopathology meta-analysis output for post-treatment.

Binge-eating. At post-treatment, (Figure 3) when compared to wait list controls, compassion-based interventions did not reduce overall binge-eating (SMD = -1.23, 95% CI –2.65 to 0.18; heterogeneity I2 = 77%, P < 0.04; df = 1, N = 43).

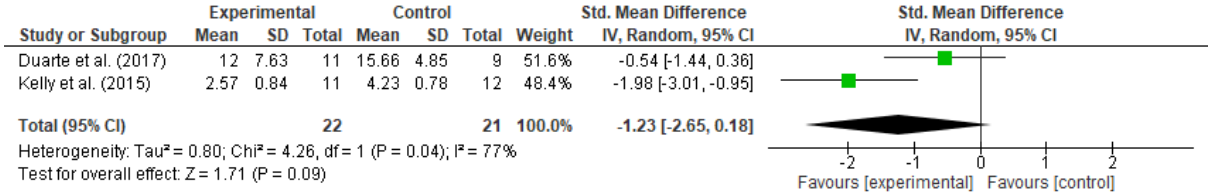


Figure 3. Binge-eating meta-analysis output for post-treatment.

Body-dissatisfaction: body-shape questionnaire. At post-treatment, when compared to waitlist controls, compassion-based interventions did not reduce body-shape concerns (MD = –0.24, 95% CI –0.73 to 0.25; heterogeneity I2 = 68%, P < 0.08; df = 1, N = 308).

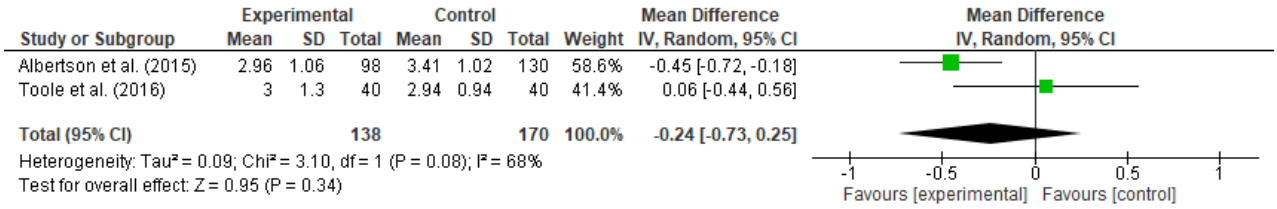


Figure 4. Body-dissatisfaction meta-analysis output for post-treatment.

Shame/ Body-shame. At post-treatment, when compared to wait list controls or treatment as usual, compassion-based interventions did not reduce overall shame/ body-shame (SMD = –0.81, 95% CI –1.66 to 0.04; heterogeneity I2 = 88%, P < 0.00001; df = 3, N = 350).

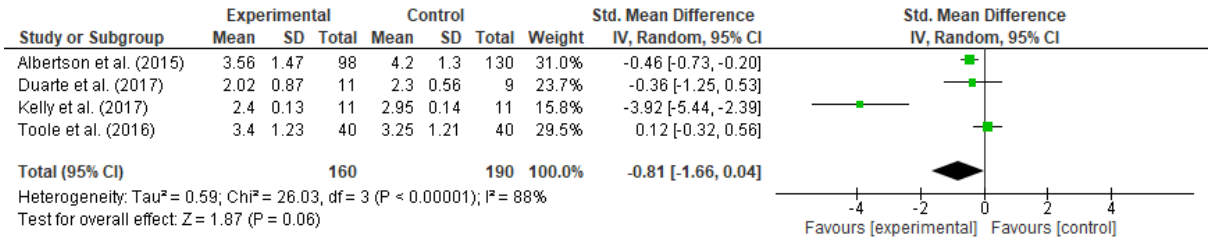


Figure 5. Shame/ body-shame meta-analysis output for post-treatment.

Body appreciation. At post-treatment, when compared to waitlist controls, compassion-based interventions did not increase overall body-appreciation (MD = 0.17, 95% CI –0.16 to 0.50; heterogeneity I2 = 64%, P < 0.10; df = 1, N = 308).

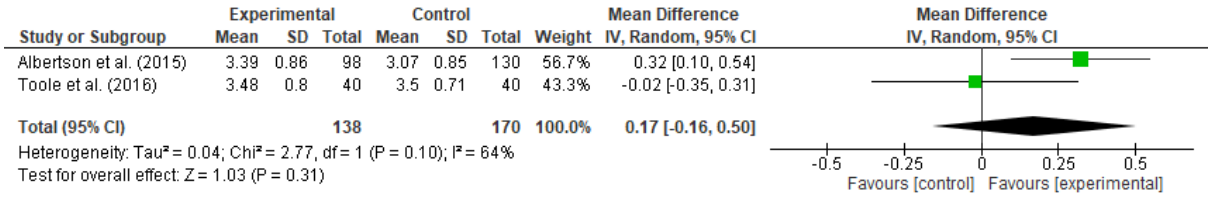


Figure 6. Body appreciation meta-analysis output for post-treatment.

Contingent self-worth based on appearance. At post-treatment, when compared to waitlist controls, compassion-based interventions did not reduce overall Contingent Self-Worth based on Appearance (MD =- 0.27, 95% CI –0.58 to 0.04; heterogeneity I2 = 49%, P < 0.16; df = 1, N = 308).

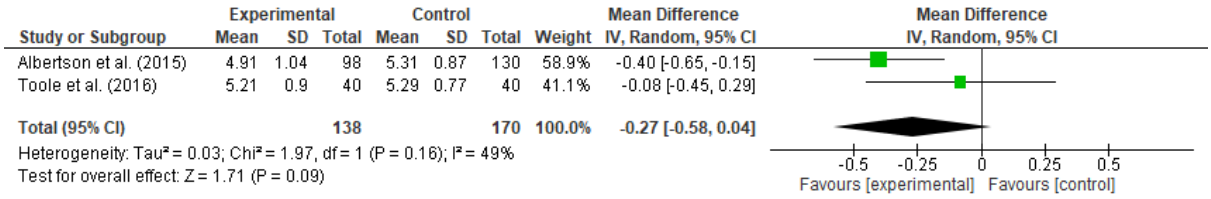


Figure 7. Contingent self-worth based on appearance meta-analysis output for post-treatment.

Self-compassion

At post-treatment, when compared to waitlist controls or TAU, compassion-based interventions in the six RCTs increased overall self-compassion (MD = 0.45, 95% CI 0.15 to 0.74; heterogeneity I2 = 94%, P = 0.003; df = 5, N = 437).

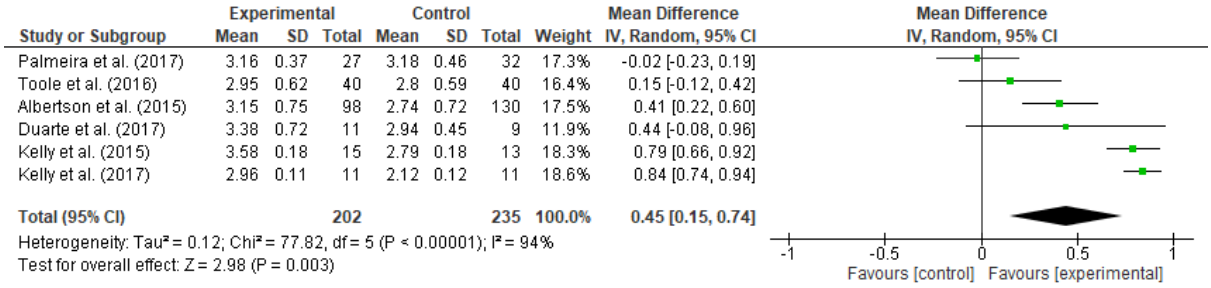


Figure 8. Self-compassion meta-analysis output for post-treatment.

Discussion

Interpretations from this review must be tentative given the small number of studies with small sample sizes which were included and the relatively high attrition rates in most of them. Examination of the interventions revealed that less resource-intensive, online self-help, compassion-based interventions, focused on soothing breathing, self-compassionate imagery and letter-writing. More resource-intensive, face-to-face CFT-E interventions were delivered by

clinicians in groups or in individual therapy. CFT was offered as standalone treatment or as an addition to already established therapies, or components of it were integrated with third-wave therapies. The review did not statistically examine specifically which of these specific types of compassion- based interventions and for whom were most effective, given the paucity of studies. Almost all the interventions were adapted for those with ED-symptoms.

The review found that eating psychopathology outcomes were improved by all four RCTs that examined these, with two showing medium and two showing large effect size changes. In their RCT, Duarte et al., (2017), also investigated binge-eating and found large effect size improvements in these symptoms. One RCT (Palmeira et al. 2017) used less well-known measures and obtained a medium effect for significant decreases in emotional eating and large effect for uncontrolled eating. The remaining two RCTs who did not explore eating psychopathology on the EDE-Q (Albertson et al., 2015; Toole & Craighead, 2016) found small effect changes in appearance-contingent self-worth outcomes, medium effect size changes in body-dissatisfaction and small/medium effect changes in body-appreciation.

A controlled trial (Pinto-Gouveia et al., 2017) found medium to large effect size changes in binge-eating symptoms and eating psychopathology whereas a cohort study and a case series study (Gale et al., 2014; Williams et al., 2017) found large effect size changes in eating psychopathology, with a notable proportion of patients achieving CSC.

Four of the six RCTs found medium or large effect size changes in self-compassion. However, two studies (Duarte et al., 2017; Kelly et al. 2017) only found a marginally significant change of small/medium effect size. A controlled trial found medium effect size improvements in self-compassion whereas a cohort trial and a case-series study did not measure self-compassion changes.

The meta-analysis found significant improvements for eating psychopathology outcomes as examined in four RCTs. Significant improvements were also found for self-compassion when outcomes from six RCTs were meta-analysed. These findings would indicate the efficacy of compassion-based interventions in improving eating psychopathology and self-compassion. The meta-analysis did not find significant improvements in self-worth contingent on appearance, body-appreciation, body dissatisfaction, or binge-eating. However, only two RCTs with relatively small sample sizes contributed to each of these outcomes in meta-analyses. Thus, more and larger RCTs would need to be included in a future meta-analysis to provide more conclusive evidence. The outcome of shame/ body-shame was not significantly improved in four RCTs.

Although the overall effect was not significant for all other outcomes, these were found to have a medium-large effect in the studies within the systematic review. Further RCTs are needed to examine the efficacy of individual compassion-based interventions for eating psychopathology as the current review only identified one study, a case series, offering such an intervention.

Limitations of the review. The review is limited by that it only used published data, and that only one author was involved in extracting and preparing this data, increasing the possibility of bias in the inclusion and evaluation of the included studies. As only studies published in English were included, they were exclusively conducted in the developed world, thus not possible to be generalised anywhere other than the Western world. As research in the field is nascent, the included studies were not only limited in number, but also involved small samples, often lacking active control groups and randomisation. Thus, studies were likely to suffer methodological flaws.

Because of the small number of studies and their small samples included in some of the meta-analyses for body-image outcomes, as Borenstein et al. (2009) suggest, meta-analyses of

these studies may not be powered enough to detect modest effects. Overall, as the included studies in the meta-analysis were heterogeneous, given they included varying samples and lengths or types of interventions, this rendered large confidence intervals. The variable effect sizes, also indicate methodological differences between studies (Wood, Byrne, Varese, & Morrison, 2016). Thus, as Wood et al. suggest, publication bias tests were not possible due to lack of power, given only six RCTs (and for some outcomes only two) were meta-analysed, as opposed to the recommended minimum of ten, to perform such publication bias tests (Ioannidis & Trikalinos, 2007). Given the samples used were almost exclusively female and Caucasian, this limits the external validity of these studies' findings, that cannot be generalised to males or non-Caucasians. However, these studies included clinical and non-clinical populations, with various levels of severity of ED-symptoms, either in the community or in clinics, with positive effects. This suggests that compassion-based interventions may be suitable and be beneficial for clinical and non-clinical contexts.

Strengths of the review. The reviewed synthesised the limited literature on compassion-based interventions for ED-symptoms. It synthesised data on outcome measures, meta-analysing data from RCTs, to identify effect size changes of ED-outcomes in response to clinician-led or self-help compassion-based interventions**.** Furthermore, the review included clinical and non-clinical populations. This meant populations who had not been diagnosed with an ED were also included. This is useful given many individuals do not access services or sometimes, no services are available for all those who may require treatment for ED-symptoms. The review did not only focus on eating psychopathology outcomes. It also investigated outcomes considered as risk factors to developing an ED, such as body-dissatisfaction, body-shame and body-image. Thus, the review elucidated the impact of self-compassion on these factors.

The current review aimed to build on the reviews by Kirby et al. (2017) and Braun et al. (2016) by including literature published following these reviews. Furthermore, it explicitly explored the effectiveness of compassion-based interventions with populations experiencing ED-symptoms. Additionally, it considered the methodological limitations of included studies, to inform future research.

The included studies' findings unanimously suggest that self-compassion interventions can improve ED-symptoms and ED psychopathology. However, they do so with considerable methodological limitations. Some of these limitations may stem from relatively high attrition, and small sample sizes, especially for the studies that offered online interventions. Furthermore, there has been limited online research specifically investigating the effectiveness of compassionate imagery with those in the community with a range of ED-symptoms.

Thus, before evaluating specific components of CFT and their capacity to ameliorate different severity levels of ED-symptoms with more RCTs, it may be important to explore more extensively the feasibility and acceptability of such interventions. Such explorations would help understand and address issues (e.g., attrition), and then help inform the conduction of future RCTs in the area. They would also inform the development and adaptation and the effectiveness of compassion-based interventions for specific ED-symptoms. Feasibility studies could explore the acceptability of compassion-based interventions for less severe ED-symptoms in the community. Feasibility factors behind providing earlier, more accessible and less resource-demanding interventions for such symptoms can be explored to inform future RCTs. Feasibility studies may also explore ways to achieve longer-follow ups with reduced attrition, and various online recruitment avenues, to increase sample sizes and reach more varied community samples. They can also gain valuable qualitative feedback from those receiving the intervention. Developing compassion- based interventions that are easily accessible to individuals that

experience ED-symptoms in the community, may bring the improvement needed in the current treatment of EDs and ED-symptoms.

Together, findings above suggest that compassion-based, self-help interventions offered online, which enlist self-compassion practices such as self-compassionate imagery meditation, may be beneficial for those experiencing mental health difficulties, including ED-symptoms. Furthermore, such interventions could serve as an early intervention for those at risk of developing an ED. They may also address barriers to treatment such as ambivalence or difficulty in accessing services, (i.e. stigma), and strict or high threshold entry criteria to services, or long waiting-lists. Therefore, given the promise self-compassion imagery interventions seem to show, it may be important, before conducting larger studies with individuals with an ED, to firstly explore the feasibility of such online self-help interventions, for individuals in the community who are potentially experiencing various and different levels of ED-symptomatology (e.g., weight, shape and/or eating concerns).

Rationale for the Current Research

The current review and meta-analysis indicate the beneficial effects of self-compassion interventions for ED-symptoms. Furthermore, McEwan and Gilbert, (2015) recently found positive findings of self-compassion imagery practices online (CFI-online) in the general college population. Finally, self-compassion practices offered online have been found to improve body satisfaction and eating psychopathology (Albertson, et al., 2015; Duarte et al, 2017, Toole and Craighead, 2016) and BED (Kelly and Carter, 2015), it seems fruitful to consider whether CFI-online which provides self-compassion imagery, would be acceptable and beneficial to individuals experiencing symptoms related to ED psychopathology.

The purpose of this study therefore is to explore the feasibility of practising CFI-online without clinician support with individuals with ED symptomatology. Based on findings from this review and from Gilbert and McEwan (2015), it seems reasonable to expect that CFI-online can enhance self-compassion and reduce self-criticism and ED-symptoms.

However, it is important to assess how feasible and acceptable this intervention would be in a population that may have greater concerns about their shape, eating and weight. This feasibility study therefore aims to explore initially, whether there is a demand and interest for CFI -online for populations potentially experiencing ED symptoms by looking at recruitment and attrition rates, and adherence to the intervention. It will then explore how acceptable, practical and beneficial this intervention would be, for this population.

The results of the study may not only have research implications in determining the potential for larger research in this area but may also have clinical implications for the treatment of disordered eating. The findings may be the first step towards suggesting that overcoming ED-symptoms may be facilitated by increasing self-compassion, by practicing CFI-online.

Study Objectives

Based on the five objectives of feasibility studies of social or behavioural interventions as proposed by Orsmond and Cohn (2015, p. 7-8), and by Thabane et al., (2010) the study has the following objectives:

Objective 1: To evaluate the recruitment capability and resulting participants' characteristics and the relevance of the intervention to them. The study will assess the number of participants recruited, scoring over the 25th percentile of the EDE-Q as defined by Mond et al., 2006. According to Browne (1995), a sample size of N = 30 would be desirable.

Objective 2: To assess and refine data collection procedures and outcome measures for this population by exploring their appropriateness and suitability, and the amount of collected data.

Objective 3: To examine the acceptability and suitability of the intervention and of the procedures of the study. This will be achieved by assessing attrition rate, adherence to study procedures and intervention engagement. Attrition rates should ideally not exceed 35% and intervention engagement should ideally be over three times per week. Qualitative and quantitative participant feedback about the intervention and the study will also be explored.

Objective 4: To evaluate the resources needed to participate in the study and for running the intervention and the study, and to evaluate the capacity to manage and implement the study and the intervention.

Objective 5: To preliminarily evaluate how participants respond to CFI-online, the study will explore whether CFI-online shows promise of benefiting the intended population.

Method

The chapter starts with explaining the epistemological positioning of the study, followed by describing the study's research method. This includes the research design, recruitment, materials, research procedure, and the quantitative and qualitative analyses used. Ethical considerations are also explored.

Epistemology

The project was guided by a critical realist epistemology (Bhaskar, 1978). This epistemological position can be viewed as bridging positivism and constructivism (Schmidt, 2001). On one hand, positivism and direct realism would suggest that there is one true reality which is tangible, observable and measurable (Popper, 1959; Guba, 1990). On the other, constructivism argues that there is no single observable measurable reality out there, but numerous realities constructed by individuals (Berger & Luckmann, 1991). Therefore, critical realism proposes that reality, is not explicitly observable and that our understanding of the world is shaped by our own lived experience, theories, and frameworks of perceiving the world (McEvoy & Richards, 2006). However, critical realism does not view reality as exclusively socially constructed, nor sees meaning as arising solely from lived experiences as per social constructionism (Gergen, 1999). Instead, this epistemological position would conceptualise reality and knowledge as arising from observable, context-dependent and multiple layered factors (Benton & Craib, 2001), which interact causally, within a social context (McEvoy & Richards, 2006). Though not all qualitative data is necessarily constructivist, a social-constructionist interpretation of qualitative data would likely be incoherently integrated with quantitative data. An exclusively realist approach would not allow for some interpretation of the nuances that can arise from interview data. Thus, a critical-realist position can more coherently allow the integration of the two kinds of data.

Critical realism can be described as drawing on a realist 'ontology', which is the examination of what constitutes reality, with a relativist 'epistemology', which theorises about knowledge (Cruickshank, 2007). That is, an objective reality exists but knowledge of it can only be estimated rather than perfectly detected, due to the limitations of measurement. More specifically, critical realism embodies a constructivist epistemology, in that it views the world as constructed through individual viewpoints and perceptions (Creswell & Plano Clark, 2011). However, the context of this view lies within a realist ontology whereby reality resides outside of perception (Maxwell & Mittapalli, 2010). Thus, while it acknowledges that there can be various perspectives on something, critical realism also accepts that realities not possible to be known also exist (Guba, 1990). Thus, knowledge of true reality can only be estimated representations of it (Maxwell & Mittapalli, 2010). Nevertheless, critical realist research attempts to quantify and validate underlying structures in reality (Bisman, 2010). The implications of critical realism's ontology are shown within mixed-methods research. Critical realists may use theory to guide their research process. However, they acknowledge that these theories are estimations of reality by discussing how some results are not supportive of their theories. It also encourages including insights that are mentally based, such as collecting perception- and reflection-based data. Its emphasis on relationships is connected to its ability to infer causal relationships that are both contextually based and generalizable to others. This perspective has been particularly used in evaluation studies (Pawson & Tilley, 1997).

Bhaskar (1978) posited that there are three layers of reality, 'the real', 'the actual' and 'the empirical'. 'The real', though underlying what we observe, cannot be seen directly, thus can only be approximated. 'The actual' regards to what is observed, as caused by underlying processes in the real. Finally, 'the empirical' refers to what observers experience, and their speculations about the real. Thus, within the quantitative component of this research, whereby

participants were asked to self-report their ED- symptoms, and fear of self-compassion and their adherence to the intervention, reflects the 'empirical' layer of what is real. This recognises that participants cannot report what they experience internally without being affected by their perceptions of the questionnaires or their own judgments of their reported experience. Thus, only speculations can be made about 'the real' layer, which cannot be directly measured.

Study Design

Even though randomised controlled trials (RCTs) are viewed as the gold standard for evaluating the effectiveness of health interventions (Solomon, Cavanaugh, & Draine, 2009), they are not always feasible, especially for psychological interventions (Craig, Dieppe, Macintyre, Michie, Nazareth, & Petticrew, 2013). These can be impacted by greater unsystematic variation than medical treatments (Campbell, et al., 2000), such as attrition, acceptability, adherence, intervention and study delivery, recruitment and smaller-than-expected effect sizes (Medical Research Council, [MRC], 2008). Thus, deciphering causal effects of the intervention can be challenging or not possible. For this reason, the MRC has recommended the importance of feasibility and pilot studies as important first stages to evaluating complex interventions.

Given the paucity or effectiveness research on CFI-online and ED- symptoms for those in the community, pursuing an RCT in the area would not be appropriate. Therefore, the study utilised an uncontrolled, repeated measures feasibility design. It used a feasibility driven, mixed-methods, qualitative follow-up approach (Morgan, 1998). In a qualitative follow-up approach, qualitative methods complement and follow-up a principal quantitative research. In this study, qualitative methods were used to elucidate further, feasibility and acceptability factors of CFI-online for those in the community experiencing a range of ED- symptoms.

A critical realist epistemological position which this study adopts, allows a framework for merging quantitative and qualitative approaches, and thus, a multi-faceted exploration of reality (McEvoy & Richards, 2006). Creswell (2015), suggests that mixed-methods designs entail collecting and analysing qualitative and quantitative data related to research objectives and after using rigorous methods to collect both type of data, integrating them to arrive to new understandings that would not be possible to be gleaned by relying only on quantitative or qualitative findings (Creswell, 2015). Previous research looking into the use of mindfulness-based and compassion-based interventions in eating disorders (EDs) has mainly looked at using quantitative outcomes. This limits our understanding of the context within which such interventions are received, and how those with ED- symptoms experience such interventions. Thus, by utilising a mixed-methods design, a triangulation of quantitative methods and qualitative methods can allow a greater understanding of the feasibility and acceptability factors of CFI-online with a population experiencing a range of ED-symptoms. Guba (1981) suggests that using different methods together offsets limitations whilst taking advantage of the strengths of each approach.

The decision to use mixed-methods was also made due to the current trend of prioritising the employment of such research in the health sciences for feasibility and acceptability studies. For instance, the methodological diversity that characterises mixed-methods research, allows a richer and a multi-levelled exploration of the complex factors related to issues of treatment adherence and acceptability. Such methods also allow for participants' views and experiences to be expressed. When methods are combined, this also enables a better understanding of health difficulties and contextualises outcomes (Plano Clark, 2010).

Specifically, within the quantitative part of this research, the study explored changes in quantitative measures, before ('baseline'), immediately after ('post-intervention') and a month after the intervention finished ('follow-up'). All participants received the intervention. The independent variable was time. The dependent variables were the quantitative outcome measures, namely the Eating Disorder Examination Questionnaire(EDE-Q), Self-Compassion Scale (SCS), Fear of self-compassion (FSC), and Depression, Anxiety and Stress Scale (DASS-21), assessed at baseline, post-intervention, and one-month follow-up. Within the qualitative part of the study, open-ended questions were asked after the intervention, to invite brief written feedback from participants about what they thought of CFI-online and of participating in the study. Participants who consented to be contacted to be invited to interviews were approached a month after they received the intervention, via their preferred method, (phone, skype or email). A subset of these participants who accepted the invitation for interview, were asked about their views on their experience of the study and intervention, to gain deeper insight into the acceptability, effectiveness, and feasibility of the study and the intervention.

To summarise, this mixed-methods, qualitative follow-up study firstly collected the quantitative data to evaluate the five acceptability and feasibility objectives of this study. This phase was followed-up and complimented by a qualitative one, whereby the same objectives were explored with a subset of participants. Clark and Creswell (2011) suggest that this design allows a greater range of exploration of study objectives and of the quantitative findings and that it improves the credibility of results through data convergence.

Procedure

The survey was designed on Qualtrics. Thus, the study was advertised (Appendix C) on Facebook, Twitter, YouTube and Instagram in groups or pages relating to weight-loss, slimming,

dieting, eating disorders, meditation, fitness, exercise and self-compassion. Interested participants were asked on the advertisements to click on a Qualtrics link to find out more about the study. Before starting to complete questionnaires, participants were shown an information sheet (Appendix D). The subject matter of the study was also described, and approximately how long questionnaires would need to be completed, and what the intervention would entail. At the point of consent, tick boxes required participants to indicate whether they were 18 and over, and whether they met any of the exclusion criteria. If they ticked positively for any of the exclusion criteria, participants were automatically directed to the end of the survey with a debrief message. This explained that they were not eligible to participate, and signposting information was provided, along with the researchers' contact details, should they have any questions. The researcher's contact details were provided for any questions from potential participants. These were also given at the end of each follow-up point. Following this, written online informed consent was obtained (see Appendix E). Consented participants were required to provide their preferred contact details. A debrief sheet outlining signposting information and an important information sheet were provided to all participants (see Appendix F, G).

Following completion of the quantitative part of the study, those who had consented to being contacted for interviews were contacted to arrange an interview. The option to answer interview questions in free-text in an anonymised survey on Qualtrics accessed via email was also provided. Prior to starting a phone interview, participants were again given the opportunity to provide informed consent for participating in this second part and for their anonymised data to be transcribed confidentially by a professional transcriber (See Appendix H for participant consent and Appendix I for transcriber confidentiality agreement).

Data collection

Participants were asked when they consented if they were happy to receive a blind email with reminders with the relevant link to the online audio on self-compassion imagery exercises at http://compassionatemind.co.uk/individuals/audio-for-individuals through https://www.qualtrics.com/. An email with a link to the online survey on Qualtrics (https://www.qualtrics.com/) was also sent at the appropriate follow-up points. A unique anonymised number was created for each participant's questionnaires, by asking them to combine the first two consonants of their mothers' maiden name and the last two digits of their telephone number. As this unique number was embedded in their questionnaires, this allowed to anonymously link each participant's data across time points (Appendix E & H). The lead researcher collated the completed outcome measures electronically by downloading data from Qualtrics into SPSS.

Following completion of the baseline measures, participants were emailed a recommended timetable of what day to practice which CFI-online meditation with links to the meditations and brief descriptions of these (Appendix J). As per the study by McEwan and Gilbert (2015), participants were required to practice the CFI-online exercises daily for a minimum of five minutes for two weeks. Reminders for practice were emailed every two or three days, with the relevant practice link. Participants were sent a short adherence measure after the end of each week of their two-week participation. In the end of the first week, these questionnaires were accompanied by a brief reminder and link to the audios to be practiced for the second week of the study. This reminder was combined with these measures to minimize amount of emails sent to participants. Participants were e-mailed all other measures in the beginning, and end of the intervention, and at one-month follow-up. Reminders were sent to complete measures, within a 10-day window of when questionnaires were due to be completed.

Individual semi-structured interviews were conducted on the phone by the researcher, with participants who agreed to be called for an interview after the follow-up questionnaires were emailed to participants. The timing of this was such so that the qualitative part of the study occurred after the quantitative finished. The interviews took approximately 15 to 35 minutes, depending on how much a participant wanted to share and how much time they had. Interviews were recorded on a digital recorder and professionally transcribed. Given an objective of feasibility studies is to respond to participants' needs and refine study procedures such as data collection (Orsmond and Cohn, 2015), as only few participants were able to commit to a phone interview the option to complete interview questions online was also offered. Thus, the interview schedule of the semi-structured interview was also emailed, so that participants could answer anonymously by typing free-text responses. Research has indicated that web-surveys can be impacted the least from socially desirable responding, whereas phone interviews are impacted the most, compared to paper, face-to-face, online survey and interview methods, (Zhang, Kuchinke, Woud, Velten, & Margraf, 2017). Given the feasibility nature of this study, adding this option allowed maximising the chance of getting the views of those who used the intervention, something deemed important when planning interventions (Thornicroft, & Tansella, 2005).

Interviews can facilitate the exploration of the experience of an intervention and enable more detailed feedback, especially with regards to intervention acceptability (Plano Clark, 2010). Using a semi-structured format helped explore the five pre-determined areas of feasibility and acceptability of this study, allowing space for reflection and new insights (Miles & Gilbert, 2005). To assure the credibility of interview data, the researcher actively attempted to help participants feel comfortable to share their authentic views about the study and CFI-online so that they felt free to be honest about their views. This was achieved via rapport building,

reminding participants that all views are welcome and valuable, regardless of whether practices were attempted or not, and avoiding imposing specific ideas on how to answer. The researcher also checked with participants that the time of call was appropriate and that they were in a private place to talk.

The intervention: CFI-online

The first audio of the intervention guided participants through soothing rhythm breathing. This involves slowing and deepening the breath and focusing attention on the sensations of breathing in one's own body. Then, the following imagery practices were introduced:

(1) 'Compassionate other' imagery, which guided participants to imagine an ideal compassionate other who cares about their well-being.

(2) **'**Compassionate image and community', which expanded on the idea of building a compassionate image and receiving compassion from it.

(3) 'Compassionate self-imagery', which guided participants to imagine an ideal, compassionate self who is wise, strong, and non-judgemental.

(4) 'Addressing self-criticism' which guided participants to reflect on self-criticism by guiding them to construct an image of what their self-criticism might look like. It then guided them to further imagine their compassionate image.

Participant Recruitment

The study used similar recruitment strategies as Albertson et al. (2015) but also included males. Therefore, the study recruited male and female participants aged 18 and older within the community, who felt they had eating, weight, or body-shape concerns. The opportunity to win a £50 Amazon gift voucher was offered as an incentive for participation. Advertisements were placed on Facebook, YouTube, Instagram and Twitter on online pages and groups around disordered eating, fitness, weight-loss, diet, and ED recovery/awareness. Snowballing sampling was also used. Participants' demographics are presented in the results section of this paper, given characterising the resulting sample is one of the study's objectives.

Included participants were aged 18 and above who had self-identified as experiencing 'weight, shape and/or eating concerns', lived in the UK, and could speak and understand English. Participants who indicated during the consent process that they had a mental health diagnosis, and/ or were receiving mental health input, and/ or had recently experienced a distressing event and/or did not live in the UK were excluded. This was because the intervention was aimed at those in the community not currently receiving other input and experiencing a level of symptoms that did not require more direct support. Furthermore, the researcher would not have been able to provide sufficient and accurate signposting to those living outside the UK. Finally, those who reported having experienced a distressing event recently were advised they would be excluded at the point of consent, as it was hypothesised that the intervention may give rise to difficult feelings for them.

Recruitment for interviews. After completing post-intervention/ follow-up questionnaires participants were again shown the consent form for the qualitative part of the study asking if they wanted to provide feedback (Appendix E). Participants who consented to

being interviewed were contacted to book an interview. Of those, five were happy to have a telephone interview and three chose to answer interview questions online via an email link. Thus, eight participants were recruited for the qualitative component of the research.

Materials

Measures

Measures chosen for this study have been widely used in research in EDs. Though self-report measures can have limitations, such as that they can limit responses to the provided options, they can allow for a large amount of responses to be collected (Warriner, 1991). Demographic information obtained included gender, age, education, employment, ethnicity, place of residence and previous or current diagnosis of an eating disorder or other mental health disorder. The measures used were:

The Eating Disorder Examination Questionnaire (EDE-Q), Appendix (K). The EDE-Q (Luce, and Crowther, 1999) is a 36-item freely available self-report scale measuring eating behaviour and attitudes over the last 28 days. It is based on the interview Eating Disorder Examination (EDE; Fairburn, & Cooper, 1993). It is widely used for the assessment of the key elements of anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED) and is viewed as the gold standard of assessing ED pathology (Garner, 1995). It consists of four subscales: restraint, eating concern, shape concern, and weight concern. These are rated on a 7-point forced-choice rating scale ranging from 0-6 whereby 0 in most items indicates *no days at* all and 6 indicates *every day* or *markedly*. The rating scale assesses for the presence and frequency of symptoms.

The *Restraint* subscale evaluates strict dietary rules whereas *Eating Concern*, explores worries, and guilt around eating and food, and a fear of not controlling one's eating. *Shape*

Concern captures beliefs about shape and dissatisfaction with one's body image, and *Weight Concern* assesses beliefs about weight.

To calculate a score for each EDE-Q subscale, scores of each item that makes up the subscale are added and then sum divided by the subscales' total number of items. To estimate the global score, the four subscale scores are added and divided by four. Scores on the scale and subscales range from 0-6, whereby higher scores suggest greater severity of ED psychopathology.

The EDE-Q has demonstrated good psychometric properties (Fairburn, 2008). In four studies in 203 adults with bulimia nervosa it was found to have good internal consistency, with internal consistency for the EDE-Q total score (α = .90) and for its' subscales: Restraint (α = .70), Eating Concern (α = 0.73), Shape Concern (α = 0.83) and Weight Concern (α = 0.72) (Peterson et al., 2007). Luce and Crowther (1999) found that the EDE-Q has good test-retest reliability with the coefficients of 0.87, 0.94, 0.92, and 0.81 for restrain, shape concern, weight concern and eating concern subscales. According to Berg et al. (2012), the EDE-Q subscales demonstrated acceptable internal consistency in four studies in 203 adults with bulimia nervosa, with reported Cronbach's alphas ranging from 0.70 to 0.93 and have acceptable internal consistency, with alphas ranging from 0.70 to 0.93. In a non-clinical sample, the Cronbach's alpha for the EDE-Q global was .90 (Peterson, et al., 2007). The mean score for a non-clinical sample of 243 women were 1.55 (SD = 1.21) , 1.25 (SD = 1.32) (SD = 0.62), 0.62 (SD = 0.86) 2.15 (SD = 1.6) 1.59 (SD = 1.37) in the EDE-Q Global and the EDE-Q subscales of Eat Restrain, Eat Concern, shape Concern, Weight Concern respectively (Fairburn and Beglin, 1994). The mean EDE-Q scores for a sample of 726 women in the UK (mean age 27.7, *SD* = 21.2) with an ED diagnosis were 4.25 (*SD* = 1.20), 3.93 (*SD* = 1.65), 4.49 (*SD* = 1.37), 3.85 (*SD* = 1.37), 4.83 (*SD* = 1.23), for the EDE-Q Global scale

and its' subscales of Restraint, Weight Concern, Eating Concern and Shape Concern respectively (Brewin, Baggott, Dugard, & Arcelus, 2014).

The EDE-Q has been used widely in studies with clinical populations, to assess eating pathology and can be used as a screening tool for EDs (Mond, Hay, Rodgers, Owen, & Beumont, 2004). The EDE-Q is a cost-effective measure designed to be completed within 15 minutes. Thus, it was not deemed too time-consuming to complete, nor expensive for the study. Using it in this research could provide new information for this online community population, and how they respond to self-compassion online interventions. Therefore, the EDE-Q was deemed appropriate for the study.

A criticism for the EDE-Q may be that the way questions are asked assumes that any ED-behaviours are performed because of efforts to control one's shape/weight, not giving space to participants to indicate their own reasoning for these behaviours. This may be since the scale was devised based on the cognitive behavioural (CB) transdiagnostic model of EDs, whereby all EDs are theorised to arise from overvaluing one's shape and weight. Thus, this questionnaire does not allow space for other theories, explanations or motivations for ED behaviours and attitudes, that may not be fitting with the CB model of EDs (Gowers & Shore, 2001). Nevertheless, the study was interested in assessing factors such as weight and shape-concerns. The study views these as some of the common factors associated to EDs along a spectrum of severity, rather than assumes that shape and weight concerns are the defining and only characteristics of EDs. This links with the critical realist position of this research, which assumes the inherent weakness of an instrument in capturing wholly accurately the true reality of a construct. A further limitation is that though completing the EDE-Q takes considerably less time that its' face-to-face equivalent assessment (EDE), it may still take considerable time, especially if participants are completing this measure along other measures. Furthermore, given its' time

window of looking back at the last 28 days to answer questions, this measure is not only susceptible to memory biases (e.g. participants may not be able to remember accurately the previous 28 days) but it also does not assess change over the last week. This may be more suitable, as it can be less susceptible to memory biases, and can also be used in a therapeutic setting whereby session-by-session outcome monitoring may be desirable.

Self-Compassion Scale (SCS). The SCS (Neff, 2003) is a 26-item self-report 5-point measure (see Appendix L), that assesses the tendency to be compassionate towards oneself when distressed, from 1 (almost never) to 5 (almost always). It has demonstrated strong reliability and validity, and the total scale score has strong internal consistency (Neff), with reported Cronbach's alpha of .94 in an ED population (Kelly & Carter, 2015). It consists of six subscales: self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification with one's emotions. Cronbach's alphas for the subscales have been shown to range from .70 to .84 (Kelly et al., 2017). Subscales can be examined separately but a total score, which can range from 1-5 can also be given based on the average of all items, and scores on the subscales. Average total scores can be 3.0 on the 1-5 scale. Thus, scores of 1-2.5, 2.5-3 and 3.5-5.0 would suggest low, moderate and high levels of self-compassion. The self-judgment, isolation, and overidentification subscales are reverse-coded. Thus, higher scores suggest increased self-compassion. Recently, studies have indicated that the items that are positively worded (e.g., 'I try to be loving towards myself when I'm feeling emotional pain') can be assessed as indicators of self-compassion whereas the negatively worded items (e.g., 'I'm disapproving and judgmental about my own flaws and inadequacies') can assess a propensity towards self-criticism (López et al., 2015). Toole and Craighead (2016) found Cronbach's alphas of .87 and .89 for the self-compassion and self-criticism factors for their sample, who self-identified as having body-image concerns. The content validity of the SCS been criticised (Strauss

et al., 2016) for not including items about how attentive one is towards their feelings. Its' internal consistency has been questioned in terms of the fact that a single overarching construct of self-compassion can only marginally explain its' proposed six-factor structure (Neff, 2003). Other issues relating this scale have been reported in the systematic review of this thesis. This study explored the total SCS mean score and the mean score of the self-judgment subscale.

Fear of self-compassion (FSC). The Fear of Compassion Scale (FCS; Gilbert, McEwan, Matos, & Rivis, 2011) is divided in three subscales assessing individuals' fears of giving and receiving compassion (see Appendix M). These scales can only be used separately. In this study, similarly to Kelly, Carter, Zuroff, and Borairi, (2013) only the section with 15-items measuring fear of self-compassion was used (FSC), for brevity. This asked participants to rate their agreement with statements about expressing kindness and compassion towards oneself using a 5-point Likert scale of zero (don't agree at all) to four (completely agree). Sample items include: ''I fear that if I am more self-compassionate I will become a weak person'', "I feel that I don't deserve to be kind and forgiving to myself". The face validity of this measure may be compromised by the fact that the terms 'compassion/ compassionate/ compassion towards self' are not explained, yet they are used throughout the scale. The FSC subscale has shown good reliability and internal consistencies with a reported Cronbach's alpha of 0.92, (Gilbert et al., 2011). This scale has also demonstrated strong internal consistency with a Cronbach's alpha of .95 in an ED population (Kelly, Carter, Zuroff, & Borairi, 2013). Scores range on a continuum of low to higher fears. Total scores are the sum of each subscale item and can range from 0-60. Thus, roughly, scores from 0-20, 20-40, and 40-60 may suggest low, moderate and high fear of self-compassion respectively. It must be noted that a low score on this scale does not necessarily imply a positive view of self-compassion. Nevertheless, higher scores suggest greater

fears surrounding self-compassion and thus a higher resistance towards giving and experiencing self-compassion.

The clinical observation that compassion would evoke avoidance or fear in some patients led to the development of this measure (Gilbert, 2010). Gilbert theorised that grounded within attachment theory (Bowlby, 1980), affiliative feelings surrounding social connectedness can be conditioned after one has been neglected or abused within attachment relationships, leading to experiential avoidance or dislike of compassion. Though this theory of fear of compassion was situated within abusive or neglectful attachments, fear of compassion can be viewed dimensionally. Thus, everyone can vary on how fearful they are of compassion, regardless of whether they were abused or neglected within attachment relationships.

Depression, Anxiety and Stress Scale (DASS-21). The DASS-21 (Lovibond & Lovibond, 1995) is a 21-item self-report shortened version of the DASS-42, (see Appendix N) measuring depression, anxiety and tension/stress on three 7-itemed subscales. It has a 4-point Likert scale response format of asking participants about whether certain experiences applied to them over the previous week (e.g., "I felt that life was meaningless"). Scores range from 0 ("did not apply to me at all") to 3 ("applied to me very much, or most of the time"). Higher scores on the DASS-21 suggest increased general psychological distress. Lovibond and Lovibond (1995) recommend clinical cut-off scores of 10, 8 and 15 for the depression, anxiety and stress subscales respectively. Items for each scale are summed and then multiplied by two, so that the shorter DASS-21 form is comparable to the DASS-42 percentile rankings and severity labels (Henry & Crawford, 2005). The DASS-21 subscales have shown good psychometric properties, with excellent reliability, convergent and discriminant reliability, correlating highly with similar measures of distress in a non-clinical sample (Henry & Crawford) and demonstrated similar properties in clinical samples (Antony et al., 1998). The measure has also demonstrated good

internal validity (Depression Cronbach's α = .91, Anxiety Cronbach's α = .80, Stress Cronbach's α = .84; Sinclair et al., 2012). Normative data exist for Australian, UK, and US samples (Henry & Crawford, 2005; Lovibond & Lovibond, 1995)

Adherence. Adherence to CFI-online was measured similarly to McEwan and Gilbert (2015). One week after the intervention started, and at the end, participants were emailed a link to a set of questions on Qualtrics about adherence. These enquired how frequently and intensely participants experienced their imagery meditation exercises. This measure also asked about participants' experience and invited them to provide written feedback, should they want to provide it. The question items (scored 0–10) included ratings of how easy/hard/clear the imagery was experienced by participants (Appendix O). They also enquired about levels of tension, resistance to the imagery and how moved they were by the imagery, as per McEwan and Gilbert. Open ended written feedback was also invited in the end of this questionnaire, for anyone who wanted to provide it (See Appendix O).

Eating Disorder Examination Questionnaire Short (EDE-QS). The EDE-QS (Gideon, Hawkes, Mond, Saunders, Tchanturia, & Serpell, 2016) is a shortened 12-item version of the EDE-Q, measuring eating pathology on a four-point Likert scale (Appendix P). On the first ten items, it asks participants on how many of the previous seven days they experienced issues around restrain, eating weight or shape concerns, ranging from 0-3. A score of 0 would mean 'zero days', 1 means 1-2 days, 2 means 3-5 days and 3 means 6-7 days. The last two questions enquire about body-dissatisfaction and self-judgment based on one's weight or shape.

Initial psychometric evaluation (Gideon, Hawkes, Mond, Saunders, Tchanturia, & Serpell, 2016) of 489 patients of UK ED Services indicated that the EDE-QS has high internal reliability (Cronbach's α = .913) and temporal stability (ICC = .93; $p < .001$). It also correlated highly with the EDE-Q when evaluated with an ED sample $r = .82$ and a sample without EDs ($r = .92$).

Findings also indicated that it is sensitive in detecting those with and without EDs. Thus, this measure may be suitable to be used as a briefer and less burdensome outcome measure of eating pathology, evaluating changes in the previous week. Though other short questionnaires assessing EDs exist, these do not cover the breath of all EDs or the clinical symptoms associated with ED pathology. However, given it is a relatively new outcome, it needs further validation with a variety of populations, including an online community sample such as this one.

Interview schedule. A semi-structured interview schedule was used to guide the interviews (see Appendix Q). It created a framework, providing prompts to responses and helped monitor the progress of the interviews to ensure that the research satisfied its aims. The interview schedule explored thematic areas around the study's five objectives. For example, it explored participants' understanding of the questionnaires and CFI-online and how they felt completing these. It explored how often participants practiced CFI-online and whether that was enough or too much for them, and whether they experienced any positive or negative effects from practicing. Other questions investigated whether; the participants would recommend the interventions and the study to others experiencing similar difficulties; what could be improved in CFI-online or how the study was ran; whether CFI-online felt relevant to them, and what barriers they experienced in participating in the study or in trialling the intervention. Finally, participants were asked which intervention they preferred the most (Appendix Q). However, the schedule was flexible enough to pursue any interesting and novel themes that emerged from interviews.

All participants were also invited to provide written feedback in free text on online questionnaires if they wanted to. These different ways of providing feedback were hoped to enable participants to give their opinion and views, even if they were not willing to participate in

lengthier interviews. At the same time, having lengthier interviews for a subset of participants was hoped to bring a richer understanding to some of the shorter feedback provided.

Analysis

Quantitative Data analysis

Statistical analysis was conducted using SPSS 21 (IBM, 2012). Descriptive statistics were presented for demographic, baseline and post-intervention data for the measures of eating psychopathology, self-compassion, fear of self-compassion as measured by the EDE-Q, EDEQ-S, SCS, FSC, and a brief adherence measure designed for this study, based on previous measures by McEwan and Gilbert (2015).

Quantitative data analysis method for preliminary evaluations. In order to preliminarily evaluate changes, comparisons between baseline, post-intervention and follow-up measures were assessed using inferential statistics. Wilcoxon Signed Rank tests were used as the data was not normally distributed at all time-points. Bonferroni corrections were applied to reduce Type 1 error risk at $p < 0.004$ level. Given this was a feasibility study, the emphasis was not on statistical significance and instead, on clinical significance. Thus, EDE-Q data was analysed using the Leeds Reliable Change Index Calculator (Agostinis, Morley, & Dowzer, 2008).

Table 3 demonstrates how reliable and clinical change outcomes can be categorised in four ways (Wise, 2004). Reliable change (RC) (Jacobson & Truax, 1991) allows clinicians to detect whether observed change on outcomes exceed that of measurement error. Thus, RC was estimated for each participant that completed post-intervention and follow-up measures, between baseline and post-intervention, post-intervention and follow-up, and baseline and follow-up to see whether each participant's scores moved from the clinical range to the non-clinical range. Specifically, Agostinis et al. (2008) suggest that the reliable change index (RCI) indicates the amount of change in a scale's points one must achieve, for this change to be

considered reliable. This then is used to estimate whether participants have recovered, improved but not recovered, did not change or deteriorated (see Table 3). In addition, clinically significant change (CSC) was also calculated to explore whether participant's EDE-Q scores moved from the clinical range to the non-clinical range. Jacobson and Truax (1991) recommended three different ways of doing this, termed A, B and C, for calculating the cut-off scores indicating 'recovery', (e.g., when a participant's scores move from the 'clinical' range to the 'non-clinical' range). Criterion A would signify recovery when a score moves more than two standard deviations from the 'clinical' mean. Using Criterion B, recovery is assumed when scores move within two standard deviations of the 'non-clinical' mean. Criterion C defines recovery as when a score is more likely to be in the 'non-clinical' range than the 'clinical' range. Jacobson and Truax (1991) advice that Criterion C is the preferred method when there are published 'clinical' and 'non-clinical' norms of psychometric measures because criterion A can be too stringent and criterion B is lenient. Thus, this study, used the criterion C method for the EDE-Q Global and its' subscales. It used clinical norms from a UK study with an ED population (Brewin, Baggott, Dugard, & Arcelus, 2014). These norms were chosen due to the sample being the most like this study's population. Community, non-clinical norms were based on findings by Fairburn and Beglin, (1994).

Table 3

Reliable and clinically significant change outcomes

Recovered	Reliable change is significant, and the individual has passed the normative score of the measure.

Improved but not recovered	Reliable change is significant, but the participant remains in the" dysfunctional" range.
No change	RCI is not significant.
Deterioration	Reliable change but worsening of scores.

Qualitative Data Analysis

The Framework Analysis (FA) approach was used to analyse interview transcripts and written feedback. This method, is considered as a flexible tool that can be used within various types of research. According to Gale, Heath, Cameron, Rashid, and Redwood (2013) it is flexible enough that non-interview data (such as in this case, responses to the interview questions on an online survey) can be analysed with interview data, making it particularly suitable for this study, which included data from feedback from phone interviews and from free-text answers to survey questions online. The reason FA is flexible in the ways above is because it is not solely allied to any one specific epistemological, philosophical, or theoretical approach (Gale et al.). FA was preferred to Thematic Analysis, as it emphasises discovering themes within a priori over-arching concepts/categories whilst also allow openness for themes to emerge from the data (Parkinson, Eatough, Holmes, Stapley, & Midgley, 2016). This was suited to this study, which aimed to explicitly explore five pre-defined, specific areas of feasibility and acceptability whilst allowing for some discovery of unexpected topics. Thus, in this study, though FA was mainly used deductively, FA also allowed data to be analysed iteratively, permitting the potential for themes to emerge from the data and to be integrated into the framework of analysis. FA was also deemed appropriate for this study as it is seen as particularly appropriate when evaluating treatments and exploring what could be improved (Newbold, Hardy & Byng, 2013). It was an

appealing approach to choose, given its' strong emphasis on data management (Parkinson et al., 2015) which allowed a clear visible audit trail of the process, which could be transparently shared and reflected upon with supervisors. Indeed, the final themes were checked and agreed upon with an independent reviewer.

The process of FA involved the following five steps, as recommended by Ritchie and Spencer, (1994): 1. Familiarisation, 2. Identifying a thematic framework, 3. Indexing, 4. Charting, 5. Mapping and interpretation. During familiarisation, the researcher immersed herself in the data, by hearing and reading the interviews, getting an overall sense of the data and considering any issues that emerged from it. When identifying an analytical framework, Ritchie and Spencer (1994) recommend being guided by predetermined questions as well as issues that had emerged from the familiarization stage. In this study, developing framework categories involved considering the topic guide which mapped onto the five research objectives of the study surrounding feasibility and acceptability. During the stage of indexing, transcripts were organised into the framework categories. The fourth stage, charting, involved organising the indexed, coded data into a matrix in EXCEL (Swallow, Newton, & Van Lottum, 2003) which allowed formatting it more manageably. One row was assigned per participant and one column per code, with overarching categories. The fifth and final stage of mapping and interpretation focused on understanding the data more broadly, pulling the most key elements within it to map and interpret the findings in their totality and coming up with themes. The researcher achieved this by following Ritchie and Spencer's recommendation to detect overall patterns and placing the meaning of these within the context of the research questions. Thus, by reviewing the matrix, which allowed drawing connections within and between categories and participants, themes were generated. Appendix R (i-iii) provides examples from the framework analysis

process such as familiarisation with the data, coming up with initial themes, identifying themes and coding, and an example of indexing/charting and mapping data in Excel.

Quality issues. It has been a topic of debate, how to assess quality in qualitative research (Yardley, 2000). The current research attempted to ensure it remains coherent, credible, and transparent (Yardley) by adhering to the following quality assurance checks: By discussing with the Research Supervisors, the author was supported to be thorough with her data collection and the way she analysed the data, ensuring she was able to look at the data from multiple perspectives, as to balance out her closeness to the data, and challenge biases and assumptions she had, whilst analysing the data (Shenton, 2004; Patton, 1999). Having summarised data in charts in Excel, it was easy for supervisors to engage with it and provide their own views when the data was being analysed. Furthermore, the charting process also enabled describing the data firstly using each participant's subjective views, before interpreting it. The matrix structure also allowed to visually inspect data easily and helped recognise patterns in the data that could be checked with supervisors. As it is a flexible approach it allowed integration of data from email/online responses to the interview questions in the matrix and analysis. It was also easy to find data extracts that illustrated specific themes, and to check that these extracts did fit a suggested theme. Moreover, this process of analysis leaves an audit trail, from the initial data to the resulting themes.

A final quality assurance task employed by the researcher was reflexivity. This allowed her to understand, and become aware and more open about her biases, values and experiences, both whilst conducting, and whilst interpreting interviews (Robson, 2002). Her ability to be aware of these biases was important, in ensuring she could be open about these, so that her research could be transparent. This reflexivity was enabled through reviewing the data interpretation with her supervisors and keeping an audit trail of how she analysed and coded

transcripts (Robson, 2002). The researcher also discussed with her supervisors in order to debrief (Shenton, 2004).

Planned Quantitative and Qualitative Analyses

Below, the five study objectives as described in Orsmond and Cohn (2015, p. 7-8) and Thabane's et al., (2010) criteria for the success of feasibility studies will be presented and how these were analysed quantitively and qualitatively.

1) To evaluate recruitment capability, the resulting participants' characteristics and the relevance of the intervention to them. Quantitatively, this was assessed through examining recruitment rates; the number of participants and their characteristics. Browne (1995) recommends a desirable sample size of *N* = 30 as indicative of study feasibility. Thus, the study assessed specifically whether *N* = 30 individuals, scoring over the 25th percentile as defined by Mond et al. (2006) in the EDE-Q have been recruited. Participants' symptom severity on outcome measures was evaluated. Qualitatively, participants were asked questions about how relevant CFI-online felt to them and explored their expressed need or appreciation of CFI-online.
2) The objectives of assessing and refining data collection processes and outcome measures, were quantitatively evaluated by investigating data completeness, usability, and completion rates. The internal reliability of the EDEQ-S in this sample was also explored. Qualitatively, participants were asked to give feedback on the appropriateness and clarity of the measures, and how they experienced completing these.
3) To examine the acceptability and suitability of the intervention and of the procedures of the study. Quantitatively, this was assessed by evaluating attrition

rates and whether they fell under 35%. Amount of intervention adherence, aimed to be three times a week on average for each participant, was assessed by evaluating participants' self-reports on an adherence questionnaire. Their experience of CFI-online was also explored through evaluating self-report measures on this. Qualitatively, participants' feedback was sought on their satisfaction with CFI-online and on how much they engaged with it and whether they experienced any adverse effects in response to CFI-online.

4) To evaluate the resources needed to participate in the study and for running the intervention and the study, and to evaluate the capacity to manage and implement the study and the intervention. In terms of appraising the resources needed to manage and implement the study and the intervention, quantitatively, the following were explored: amount and type of administration, time, space and expertise as well as study and intervention financial demands. Qualitatively, comments and themes in participants' feedback around the organisational aspects of the study and participants' resources needed to participate in the study and the interventions, were explored.

5) Finally, preliminary evaluations of participants' responses to CFI-online were quantitatively evaluated by examining the presence of change in quantitative data collected before, immediately after, and one month following the intervention. Effect sizes, clinically significant (Jacobson, & Truax, 1991), and reliable change (using the Leeds Reliable Change Index Calculator by Agostinis, Morley and Dowzer, 2008) were assessed to explore the potential effect CFI-online may have with this population. Qualitatively, participants' responses to CFI-online were examined by

gaging any themes around any effects participants expressed, as attributed to their practice of CFI-online.

Ethical Issues

Ethnical Approval

The research received approval from the University Ethics Committee (Appendix S).

Consent

Potential participants were shown information sheets about the research (see Appendix D). This informed participants that some questions or exercises may bring about some discomfort, and that they were not eligible to participate in the study if; they were not UK residents (for signposting purposes); they had experienced a stressful event recently and/or; they had a mental health diagnosis or were receiving treatment for one. Aside from providing details of the study and contact details for queries, the information sheet informed participants of their right to withdraw from the study, and/or of their right to stop practicing the online exercises at any point without consequences and explained confidentiality and data protection issues. It also reminded participants about the voluntary nature of participation prior to the study commencing.

Confidentiality

To ensure confidentiality, any identifying information, such contact details were kept separately from the completed questionnaires. For the researcher to still match measures with their corresponding participant, each participant's data set were given a unique identification number generated by asking them to combine the first two consonants of their mothers' maiden name and the last two digits of their telephone number. This created a unique,

anonymous ID which allowed each participant's questionnaires to be matched across time points, without their anonymity being compromised (see Appendix E and T).

Debriefing

In addition to providing a debrief sheet to all participants (see Appendix F), the experimenter made herself available by email, to answer any questions or worries that participants may have had about the study. The researcher also debriefed participants after the qualitative interviews.

Distress

To contain any potential distress in the case of any participants experiencing distress when asked to reflect on their level of self-compassion, mood or ED symptomatology, all participants were signposted to online support groups for EDs, to their GP or the Samaritans, with information provided on where to access help (see Appendix F and G).

Data Storage

Constantina Markides, Dr Leanne Andrews and Dr Syd Hiskey all have access to the consent forms and the anonymised measures. All three have access to any data relating to the study, which was saved on a password-protected encrypted device. Upon completion of the study, this encrypted data will be stored confidentially at the University of Essex for 10 years, after which data will be destroyed.

With regards to interviews, all participants who consented to be contacted to complete the qualitative part of the study were contacted for an interview. Five agreed to have a telephone interview and three chose to answer questions online via an email link. Participants were re-assured that all views were welcome and valuable, regardless of whether they

completed measures or attempted the intervention at all. This was done to ensure that those selected engaged with the study and intervention on a range of levels (including none at all) to capture a variety of views and gain rich information related to research aims. Participants were also reminded that they were only requested to participate in this second part of the study on a voluntary basis, and could refuse to participate, or terminate the interview. This ensured that those interviewed, had wanted to engage and open-up about their experience and opinions of the intervention and their participation in the study (Shenton, 2004). A verbal or email consent was also taken by participants in the qualitative interviews, to ensure they were happy to be interviewed and for their anonymous data to be transcribed by a professional transcriber who had signed a confidentiality agreement. (See Appendix H). The general aims of the interviews, confidentiality, and the fact that the researcher was independent from CFI-online were stated to participants prior to the interview, to introduce it, and encourage participants to be open about their opinions and experiences of CFI-online and of the study (Shenton, 2004).

Dissemination of Results

Following approval, this thesis will be available in the library at the University of Essex and an abstract available in the International Thesis Abstracts database. In September 2018 a summary of the findings will be shared with participants via blind email to the email addresses provided at the point of consent. Additionally, the research will be submitted to relevant journals (e.g. 'British Journal of Clinical Psychology'; 'International Journal of Eating Disorders'. It is hoped that the findings will also be presented at a Compassion Mind Foundation Conference. Locally, a summary of findings will also be given to the local special interest group of compassion focused therapy. The research has also been presented at the University of Essex School of Health and Social Care Research conference. Following examination and approval, presentation of findings in other national conference will be pursued.

Results

This chapter presents the analyses of the quantitative and qualitative data collected during the research. Each objective will be firstly described, followed by the quantitative and qualitative analyses that explored the objective.

Objective 1

The first objective was to evaluate recruitment capability, the resulting participants' characteristics and the relevance of the intervention to them. This was quantitatively assessed through examining recruitment rates, the number of participants and their characteristics. Browne (1995), recommends a desirable sample size of *N* = 30 as indicative of study feasibility. Thus, the study assessed specifically whether *N* = 30 individuals have been recruited, who score over the 25th percentile as defined by Mond et al. (2006) in the EDE-Q (e.g., experience at least a low level of ED-symptoms). Participants' symptom severity was also explored. Qualitatively, participants were asked questions about how relevant CFI-online felt to them and explored their expressed need or appreciation of CFI-online.

Quantitative results.

Sample characteristics. A total of 74 individuals consented online to participate between September 1st to February 1st, averaging 15 recruited participants per month. Of the 74 participants, 62 consented to be potentially approached for interviews. Of the total 74, 73 scored over the 25th percentile of the EDE-Q. Indeed, 24.3% of the sample scored within the 85th percentile on the EDE-Q as per Mond et al. (2006) definition (see Table 4). According to Brewin, Baggott, Dugard, and Arcelus (2014) findings in a UK sample, a score of 4.25 and above would indicate an ED diagnosis. Sixteen individuals, scored above this. Thus, 22% of participants potentially met criteria for a diagnosis for an ED.

Table 4

EDE-Q Global score range frequencies at baseline

EDE-Q Global Score Range	**Percentile**	**Frequency**	**Percentage**
0. 04- 0.47	25th	1	1.4
0.47- 0.88	40th	1	1.4
0.88- 1.43	55th	3	4.1
1.43- 2.04	70th	6	8.1
2.4- 2.94	85th	18	24.3
2.94- 4.00	95th	27	36.5
4.00- 4.97	99th	10	13.5
> 4.97	>99th	8	10.8
Total		74	100

Out of the 74 people who consented, 92% were White British and 99% were female, with an average age of 39 years old. In terms of education, 40.5% of the sample were educated at Master's Level and above, whereas 31.1% was educated below Degree level. Table 5 summarises basic demographic data of those consenting.

Table 5

Sample Characteristics

	Participants (N = 74)
Mean Age, (Mean years (*SD*)	39.18 (*11.36*)
Gender (Female (%)	73 (98.6)
Ethnicity (White British (%)	68 (91.9)
Employment (%)	
Employed	66 (89.2)
Unemployed	8 (10.8)
Highest level of education (%)	
Lower secondary	5 (6.8)
High school	2 (2.7)
Upper secondary	6 (8.1)
College	10 (13.5)
Bachelor's	20 (27.0)
Master's	14 (18.9)
Doctoral	16 (21.6)
Previous ED diagnosis (%)	5 (6.8)

The median age of the qualitative sample was *Mdn = 39* years *(*Range = 26 years*)* with the mode being 29 years. For median, range and lowest to highest scores, for the EDE-Q Global, SCS-Total, and FSC-Total please see Table 6. All eight participants were white and female. Seven described themselves as professionals and one as unemployed. None identified as previously having an ED diagnosis. The highest level of education achieved by three participants was a doctorate, another three had a bachelor's degree, one had a Master's and one had a college qualification.

Table 6

Qualitative feedback participants' baseline median scores on EDEQ-Global, SCS-Total and FSC-Total

	EDEQ-Global		**SCS-Total**		**FSC-Total**	
	Median *(Range)*	**Lowest to highest**	**Median *(Range)***	**Lowest to highest**	**Median *(Range)***	**Lowest to highest**
Baseline	3.40 *(3.28)*	2.18 – 5.45	2.18 *(3.10)*	1.21- 4.31	22.5 *(45)*	2-47
Post-intervention	1.70 *(1.36)*	1.26- 2. 63	2.56 *(1.49)*	1.74- 3.23	21 *(15)*	16-31
Follow-up	1.90 *(3.26)*	1.00-4.26	2.50 *(3.45)*	1.08- 4.53	14.00 *(23)*	2- 25

Table 7 below details the participant's mean or median scores at baseline. Those who were aware of having an ED diagnosis and self-reported it were automatically excluded at the point of consent. The mean EDE-Q global score was 3.26, falling just short of the 4.25 cut-off for meeting criterion for a possible ED diagnosis, indicating that the sample overall experienced a high level of ED symptoms. The sample varied in terms of depression, anxiety and stress scores, with their respective median scores falling within the moderate, mild and moderate ranges, according to recommended cut-offs by Lovibond and Lovibond (1995). Average self-compassion scores were within the low range with the reverse scored self-judgment score averaging even lower, indicating that participants were highly self-judgmental at baseline. Participants' scores varied greatly on the FSC scale and the median score fell within the lower third of the scale suggesting low fear of self-compassion.

Table 7

Participant baseline EDE-Q, SCS, DASS-21, FSC mean or median scores

	TOTAL (n = 74)	
	Mean (*SD*)	Median (Range)
EDE-Q Global Mean (SD)	3.26 (*1.19*)	
EDE-1 Restrain*		2.40 (*5.80*)
EDE-Q Eat Concern*		2.80 (*5.60*)
EDE -Q Shape Concern*		2.80 (*5.80*)
Ede-Q Weight Concern*		4.25 *(5.40)*
SCS Mean (SD)	2.46 (*0.62*)	
Self-Judgment subscale *		2.00 (*3.60*)
DASS-21		
Depression Median (Range)*		16.00 (*40.00*)
Anxiety Median (Range)*		8.00 (*36.00*)
Stress Median (Range)*		20.00 (*42.00*)
FSC Median (Range)*		21.50 (*51.00*)

* Not normally distributed at baseline.

Recruitment criteria. Given the above findings, the study's criterion of recruitment success was met, given more than N = 30 scored above the 25th percentile on the EDE-Q Global. Indeed, this was surpassed given 73 participants met this criterion. In terms of symptom severity, it would appear that a large proportion of participants, who were almost exclusively female, experienced a moderate to severe level of ED- symptoms. On average, this study attracted participants who experienced low levels of self-compassion, were highly self-critical and experienced moderate levels of depression and stress, and mild levels of anxiety. Participants on average reported low level of fear of self-compassion suggesting that participants who were attracted to the study perceived themselves not to experience high fear of self-compassion.

Features of participants who did not complete follow-up measures. Mann Whitney U analyses were used, as the data did not satisfy assumptions of normality, to explore differences between those who did and did not complete the follow-up measures. There were no significant differences in demographic characteristics or in mean scores in outcome measures at baseline between participants who completed the follow-up measures and those who did not. See tables 8 and 9 for further detail.

Table 8

Demographic comparison between completers and non-completers

	Completers n = 20	**Non-completers n = 54**
Median Age (Years Range)	37.50 (49.00) 18.00 - 67.00	39.50 (48.00) 19.00 - 67.00
Gender (Female %)	20 (100.0)	54 (100.0)
Ethnicity (White British (%)	18 (90.0)	50 (92.6)
Employment (%)		
Employed	18 (90.00)	48 (88.9)
Unemployed	2 (10.00)	6 (11.1)
Highest level of education (%)		
Lower secondary High school Upper secondary	1 (5.0)	4 (7.4)

	College	1 (5.0)	1 (1.9)
	Bachelor's	2 (10.0)	4 (7.4)
	Master's	1 (5.0)	9 (16.7)
	Doctoral	5 (25.0)	15 (27.8)
		3 (15.0)	11 (20.4)
		7 (35.0)	9 (16.7)
Previous ED diagnosis (%)		0	5 (7.9)

Table 9

Baseline median scores for completers/non-completers

	Completers n = 20	**Non-completers n = 54**	**P-value**
Median Ede-Q Global (Range)	3.14 (5.02) 0.43 - 5.45	3.33 (4.98) 0.67 - 5.65	0.461
Median SCS- Total (Range)	2.50 (3.10) 1.21 - 4.31	2.40 (2.58) 1.46 - 4.03	0.670

Median Self-judgment subscale (Range)	2.00 (3.60) 1.00 - 4.60	2.00 (2.80) 1.00 - 3.80	0.660
Median FSC- Total (Range)	18.00 (41.00) 1.00 - 42.00	23.00 (48.00) 4.00 - 52.00	0.188
Median DASS- 21 (Range)			
Depression Subscale	11.00 (34.00) 0.00 - 34.00	17.00 (40.00) 0.00 - 40.00	0.087
Anxiety Subscale	7.00 (20.00) 0.00 - 20.00	10.00 (36.00) 0.00 (36.00)	0.204
Stress Subscale	18.00 (40.00) 0.00 - 40.00	22.00 (40.00) 2.00 – 42.00	0.140

Qualitative results.

Overall, fourteen themes emerged from the data across seven overarching categories, which were largely pre-determined and based on the five feasibility and acceptability objectives of the study. The main themes and quotations supporting them are presented under each relevant objective (see table 10 for summary). To explore the first objective qualitatively, questions to participants explored how relevant CFI-online felt to them, and whether they expressed a need and appreciation for CFI-online.

Table 10

Categories, themes and subthemes of the feasibility and acceptability of CFI-online from qualitative feedback from participants

Category	Theme
1. Feasibility: Recruitment Capability	Needs of Population
	Relevance to Needs
	Expressed Appreciation
2. Experience of questionnaires/ Data collection processes	Evaluation of Measures
	Impact
	Self-awareness
	Emotional Responses
3. Acceptability of study and intervention /Experience of intervention/study	Adherence
	Amount
	Barriers
	Facilitating factors
	Adverse effects
	Attrition from quantitative part of study

	Reasons for non-completion of measures
	Evaluation of CFI-online
	Accessibility
	Helpfulness
4. Feasibility: evaluating resources	Study organisation
	Study participation demands
5. Preliminary evaluations	Impact
	Changes
	Most Impactful meditation
6. Suggestions/Criticisms	Recommendations
	Measures
	Intervention
	Study delivery
7. Self-reflections	Views on difficulties
	Views on improvements

Category 1: Feasibility – recruitment capability. Participants overall seemed to have wanted to participate based on their need to struggle less with self-criticism and their

eating/body-shape/weight. They appeared to consider the intervention relevant to their needs, though some indicated that the intervention was not specific enough to eating/body-image concerns. Participants generally valued the self-compassion meditations as a 'good' and 'useful' intervention and would recommend participating in the study and intervention.

Needs of population. Participants described struggling with weight, eating, their body-image and self-criticism ("I guess I'm someone who would love to lose weight, and struggle with that. And I'm also quite critical of myself", Participant 1; "self- compassion is a difficulty for me", Participant 2; "we're too hard on ourselves, too hard on ourselves […] but something has to give. Quite often, I think, with women, it's food. So we eat, like comfort eating", Participant 3).

Participant 4 suggested,

> I feel that I do have issues with self -esteem and body image and everything […] So my big problem with eating is that I binge eat. I eat too much really. Of everything. I'll have two sandwiches rather than one", Participant 4.

Whereas participant 8 suggested that she finds it difficult to relax ("I'm a nightmare, a bit of a control freak, so sometimes that relaxing doesn't … isn't particularly easy", Participant 8).

Relevance to needs. Though all interviewees appeared to feel that the intervention was relevant to them, ("that was perfect for me at the time", Participant 4; "relevant. If I was kinder to myself then I think my eating would settle and I would be more accepting of my shape", Participant 7), one interviewee felt that the intervention was not specific to their eating concerns ("think the meditations that I listened to in the beginning seemed to be quite general mindfulness type meditations and not necessarily specific to eating", Participant 1).

***Expressed appreciation*.** All bar one participant seemed to be happy to recommend the interventions to others experiencing similar concerns and struggles, and/or deemed the intervention as useful and worthwhile ("I absolutely would [recommend]. I was drawn to it because I thought it was a really good idea", Participant 2; "I've definitely felt benefit from it, and I feel more positive about myself and my body-image, so yeah I would recommend it", Participant 3; "it's done me so much good […] So yes I would heartily recommend it", Participant 4). One participant was not able to recommend the intervention, given they did not engage with it enough ("I don't feel I gave it enough of a chance to be able to recommend it or not", Participant 1).

Objective 2

The objective of assessing and refining data collection processes and outcome measures, was quantitatively evaluated by investigating data completeness, usability, and completion rates. The internal reliability of the EDEQ-S in this sample was also explored. Qualitatively, participants were asked to give feedback on the appropriateness and clarity of the measures, and how they experienced completing these.

Quantitative results.

Data completeness. Missing data can highlight feasibility issues and data collection weaknesses in study delivery. There were no missing data, except for the adherence measure, given the online survey platform was set up so that participants were required to provide answers to all questionnaires before proceeding to the next section. The adherence questionnaire did not provide this function. This questionnaire was only answered by 17 participants at week one, and 22 out of the 23 participants who completed the post intervention questionnaires. All data collected was usable.

Refining and evaluating data collection. In order to refine data collection for this population, a shortened measure of eating psychopathology was trialled, the EDE-QS. The EDEQ-S appeared to have good internal consistency (α = 0.819) in this sample. All items appeared suitable for retention: the greatest increase in alpha would arise from deleting item eight but removing this item would only increase alpha by .007. All items correlated with the total scale to a good degree (lowest *r* = .099, item seven, which enquired whether participants attempted to control their weight or shape by making themselves sick or taking laxatives). This finding would suggest that in future research, the EDEQ-S would be an appropriate alternative measure for this population. Given it is shorter than the established EDE-Q, it would be less demanding for participants, potentially reducing attrition. It would also potentially take less time to be scored and analysed and provide the possibility of measuring eating psychopathology over a 7-day window as opposed to 28-days as per the EDE-Q.

Category 2: Experience of questionnaires/ data collection processes.

Evaluation of measures. Participants indicated that the questionnaires were clear (e.g. "Made sense to what I thought you were aiming for", Participant 2, "it was quite a straightforward questionnaire", Participant 3. However, Participant 4 felt questionnaires could be long or repetitive and expressed some frustration over having to provide an answer and not leave them blank. ("I seem to remember there was quite there was a few of them, there was a zero response, but I wasn't allowed to just leave it, I had to put it, I had to nudge it a little bit […], the questionnaires were quite long and quite repetitive". This may have been partly due to the inclusion of both the EDEQ-S and the EDE-Q.

Impact.

Self-awareness. Most participants indicated that completing the questionnaires allowed them to reflect on themselves and become more self-aware (e.g. “It made me aware of certain things that I hadn't really thought about”, Participant 3, “made me realise how harsh I can be towards myself”, Participant 5). Participant 8 indicated that in addition to enabling self-reflection/awareness, it allowed them to consolidate learning from the intervention:

> They were quite useful, things to think about and work your way through, I suppose, it was how I see myself and how I think about things that … sometimes it's how you spin thoughts, I suppose, I think, from my point of view, it's that consolidation of learning. It was kind of like not having it … re-doing it again.

Emotional Responses. Reported emotional responses when completing the questionnaires, varied from, feeling validated (“I could connect with them in terms of how I am feeling”, Participant 7) or encouraged (“I suppose I felt like quite a lot of them didn't apply to me, which was quite encouraging [laughs], Participant 1), to neutral, (“I can’t remember feeling anything in particular”, Participant 2), to experiencing a sense of discomfort (“a little bit upsetting but not hugely distressing, most were fine to fill out”, Participant 5; “made me a bit sad as it reminded me of the issues”, Participant 6).

Objective 3

The third objective was to examine the acceptability and suitability of the intervention and of the procedures of the study. Quantitatively, this was assessed by evaluating attrition rates and whether they fell below 35% at each time-point. Amount of intervention adherence, aimed to be three times a week on average for each participant, was assessed by evaluating

participants' self-reports on an adherence questionnaire. Their experience of CFI-online was also explored through evaluating self-report measures on this. Qualitatively, participants' feedback was sought on their satisfaction with CFI-online and on how much they engaged with it and whether they experienced any adverse effects in response to CFI-online.

Quantitative results.

Attrition. Attrition rates for the adherence measure were 77% and 70% for post-intervention and follow-up respectively. For all other measures, attrition rates were 69% at post-intervention and at 73% at one-month follow-up for all measures. These rates were well above the study's objective of not exceeding 35%.

Adherence. Responses to adherence questionnaires (see table 11-14) indicated that during the first week, ten (62.5%) of the 16 participants who responded practiced at least once daily, and 6 (37.5%) practiced two to three times weekly. However, during the second week of the intervention, 13 (76.4%) of 17 participants who completed these questions, indicated they practiced at least two to three times weekly, whereas four (23.5%) either did not practice at all during the second week or only once. The average self-reported time spent on weekly practice was 46 and 29 minutes during the first and second week, respectively. All out of 16 participants who responded in week one and 13 from the 16 participants who responded in week two (81.2%) practiced a minimum of five minutes per time at week one and week two, respectively. However, 78.3% and 77% of the total sample participants did not complete these questions for the first and second week of the intervention respectively.

Table 11

Participant adherence during first and second week of study

Practice frequency	**One-week follow-up n = 16 (%)**	**Two-week follow-up n = 17 (%)**
Once daily	10 (62.5)	3 (17.6)
2-3 times weekly	6 (37.5)	10 (58.8)
Once weekly	-	2 (11.7)
Not at all	-	2 (11.7)

Table 12

Weekly practice amount

Time spent on weekly practice	**One-week follow-up n = 16(%)**	**Two-week follow-up n = 16 (%)**
Under five minutes	-	3 (18.7)
5-10 minutes per time	7 (41.2)	6 (37.5)
10-15 minutes per time	6 (35.3)	5 (31.2)
More than 15 minutes per time	3 (17.6)	2 (12.5)

Table 13

Weekly mean practice duration

Average time spent on weekly practice	**One-week follow-up n = 16 (*SD*)**	**Two-week follow-up n = 17 (*SD*)**
Mean minutes	46.25 (*20.12*)	28.5 (*26.71*)

Capacity to engage with the intervention. Table 14 details median scores given by participants in response to their experience and capacity to engage with the meditation. A score of 10 meant 'very much so' and 0 meant 'not at all'. The responses of participants who completed these questionnaires one week after starting the intervention and at post-intervention seem to indicate that the intervention was acceptable to them. The imagery seemed to be clear at both time-points, and there was little tension at week one, and almost no tension experienced at week one and two, respectively. Participants seemed to indicate that they felt moved by the imagery an average amount and resisted it minimally at both times indicating that they were able to engage with CFI-online.

Table 14

Participant self-reported experience of CFI-online at week one and two

	Week one Median (range) n = 16	**Week two Median (range) n = 17**

Average practice per week	47.50 (*75*)	25.00 (*90*)
Intensity of experience of the imagery meditation exercises	6.50(*4*)	4.00 *(8*)
Ease of practice	6.50 (*6*)	3.00 (*10*)
Difficulty of practice	3.00 (*9*)	3.00 (*8*)
Clarity of the imagery exercise	7.00 (*5*)	6.00 (*8*)
Tension levels during practice	3.50 (*8*)	1.00(*7*)
Feeling moved by the exercise	5.00 (*9*)	4.00 (*9*)
Resisted the imagery	2.00 (*6*)	1.00 (*6*)

Qualitative results.

Category 3: **Acceptability of study and intervention.**

Adherence.

Amount. Seven out of eight participants commented on the amount they practiced the meditation. Whereas one participant did not practice at all, two participants practiced only the first few days, and the remaining four said they practised 2-3 times weekly. One participant was able to practise them almost daily, ("Yeah, pretty much every day bar a couple of days, […], I did

the whole thing, more often than not", Participant 3). Another participant listened to all the meditations and incorporated them in her meditation practice:

> I summoned up that idea, that sort of compassionate friend, and I use that every day anyway. I didn't specifically, and the others as well, I didn't specifically listen to them every day […] So I'm using that combination of them all now. In my own thing. (Participant 4).

Barriers. Almost all participants commented on not having enough time, or not having set a regular convenient time or making it a habit to practice the meditation. Participant 1 explained that she was put off by the recording and length of the meditation recordings, seeming to prefer another meditation over CFI-online:

> But it's something about the recording that made it sound like it was being switched on and off, if that makes any sense? So I found that quite distracting, and that put me off a little bit. And I think the other bit that made it difficult for me to keep up with it was I know that the idea was to do it for five minutes and then you could stop whenever and maybe pick it up the next day, but I felt … and maybe this is my own … I really didn't like doing that. I didn't like the idea of just stopping midway, that … picking it up at that point the next day didn't feel helpful. I would prefer to do it all in one go…I did (try it in one go), but then it was longer than I'd anticipated it would be, and I couldn't … some of them were a bit longer than what I'd had in mind that I could fit in. So I think that was why I didn't commit to it properly.[…] Yeah, I use Headspace, the Headspace app quite a lot. (Participant 1)

Another participant who also struggled to engage with the intervention explained that she forgot about it, as she did not access emails to receive reminders regularly. She suggested that,

as she has chronically struggled with self-compassion, she needed more direct support, and lacking self-compassion in the first place meant not prioritising this intervention.

> (The reminders) certainly put it back in my mind again, but the issue is that they were email reminders and I'm not always looking at my emails[…]Time, consistent time of day would have been helpful but that's not possible, and I think again lacking the self-compassion in the first place is difficult to find the time to do the self-compassion. Ironically […] self-directed, self-compassion, is really hard for people that just don't do that or are not used to doing that. So I think that might be where the difficulty is […] it's so against the grain of how I've lived my whole life that I think it, I need more support and guidance with how to go about that. Which is why I thought that this would be helpful… (Participant 2)

Two participants explained they were unable to concentrate or found the imagery too difficult. ("I got stuck on the imagery of a compassionate person, couldn't conjure it, so I dropped it altogether as too hard", Participant 7).

Facilitating factors. A common facilitating factor was having enough time to practice. Three participants indicated 'Soothing breathing' and/or 'compassionate other' were easy to practice without needing to listen to the audio again. ("Because it was such as small amount, it meant that you could do that anytime, you could do that anywhere as well. So five minutes, if you've got … you've always got five minutes somewhere, so that's perfect", Participant 8; "Actually I could just do that [compassionate other meditation] without having to listen to the track", Participant 3). Participant 6 indicated they practiced, as practicing fit the need of helping them relax and it was easier than other practices ("[I practiced because of] …the need to relax and less demanding on cognition."). Participant 4 indicated a sense of readiness for this intervention "I

have recently had the idea about being less, well not being critical at all […] I think it's just kind of come at the same time this idea that the study just came at the right time for me ". Two participants reported having prior meditation experience (I didn't mind listening to it, because I've listened other mindfulness type things", Participant 3).

Adverse effects. All interviewed participants when explicitly asked about adverse effects said they did not experience any adverse effects, ("no [adverse effects]. I found it very positive actually", Participant 8). However, three participants indicated frustration or regret over not doing the meditations ("None. Although I did feel frustrated with myself on the days I didn't do it […] frustrated and disappointed that I gave up" (Participant 7). Participant 4 became tearful at one point when practicing but did not experience this as something negative: "I'm very, I cry very easily, I cry at happy things, so I probably, in fact I probably did shed a tear or two, but nothing, wouldn't cause me anxiety and it was part of the process".

Attrition from quantitative part of study.

Reasons for non-completion of measures. Three participants indicated they did not complete post-intervention or follow-up questionnaires. Participant 3 assumed their feedback would not be helpful ("I haven't completed them because I thought that I shouldn't because I haven't done it properly"), whereas participant 4 indicated they could not complete the measures due to not having internet access ("Given that I've got no broadband at the moment, I haven't had since the weekend, so do send it [again] but well they're saying another couple of days, so I won't be able to do it."). Participant 5 indicated they would have forgotten to complete measures without reminders "the amount of reminders was useful because I would have forgotten to complete the questionnaires if not", Participant 5).

Evaluation of CFI-online

Accessibility. All but two participants indicated that they found the intervention accessible and easy to understand:

> There was nothing that I didn't quite understand... I mean presumably I did do it right. But no everything was smooth. I don't remember thinking oohh what am I doing here at all. I found sound cloud was good. That worked. The quality was good as well…. I also think that for people who haven't had any, or not much experience with meditating, visualisations and things, it's a really nice form of visualisation technique…I like the quality, I like the sort of ease of it and the non-mumbo-jumbo". (Participant 4)

Others also suggested;" the instructions were easy to understand and simple", Participant 5; "I was quite happy to do … the longer ones that were quite a bit over the five minutes, I would quite happily just plug it in and listen to the whole tape", (Participant 3). Participant 1 indicated they could not offer feedback given they did not listen to most of the meditations, and Participant 7 explained they struggled with the intervention due to not being able to construct the imagery: "The instructions were easy to understand, I just had trouble imaging the compassionate person". This may indicate that some individuals may need some more support with regards to using imagery as a tool to become more self-compassionate.

Three participants expressed dissatisfaction with the quality of the recording. They explained they either only tried one and a half of the first recordings or none at all, citing the quality of the recording or struggling with the visualisations as the reason they stopped practicing, whereas Participant 2 was not able to practice at all due to life-commitments. Thus, quality of the recording and difficulties with imagery may be a reason behind some of the participant's lack of engagement, CFI-online. ("I did feel a bit irritated by the quality of the … the

sounding like it kept switching off. That was a bit irritating. And again, just distracting from actually doing it", (Participant 1). "I felt irritable and also found the imagery related recordings difficult". (Participant 6)

Helpfulness. All five participants who were able to comment on their satisfaction with the intervention, described feeling satisfied with it or helped by it ("And I found that quite beneficial… I thought it was really good. […] . I'm really pleased with it…It had a really natural flow to it", Participant 3). Another participant commented:

> …but I've never really summoned up a compassionate friend. And that idea I loved and I've run with[...] And then the other two afterwards were also helpful, really good […] I would (recommend)…first of all because I think it's done me so much good… especially the second one which I thought was so useful for me, that idea. I've taken that idea and I'm still doing that, that's the idea of the compassionate friend. I summoned up that idea, that sort of compassionate friend, and I use that every day anyway […] Well lots of benefits as I said, or a big benefit as I said…the compassionate friend thing idea, has really helped enormously […]. I'm really pleased with it", (Participant 4)

Others also indicated that some of the imagery practices and concepts made a sustained impression on them, and that they have continued, or hope to continue to practice some of the ideas ("it's kind of stuck…and I'm going to continue (practicing) […] I found them all helpful", Participant 3).

Some participants indicated that they found practicing the exercises enjoyable, and that it had helped them feel less anxious about other areas in their life, such as work ("I enjoyed practicing - it helped me feel calmer and feel less stressed about work", Participant 5). This

would suggest that perhaps for some, benefits experienced were broader than just related to ED- symptoms.

There was also a suggestion that the initial meditation of 'soothing breathing' worked as a grounding exercise, and that the 'addressing self-criticism' imagery practice helped them address anxieties more generally:

> I think it's useful, certainly …I found the rhythmic … the first one was just quite useful to get that grounding and just bring … be able to get rid of all the outside world bits, and the last one was addressing quite a lot of things that make me quite anxious, I suppose. It was being able to get through that. (Participant 8)

Objective 4

The fourth objective was to evaluate the resources needed to participate in the study and for running the intervention and the study, and to evaluate the capacity to manage and implement the study and the intervention. In terms of appraising the resources needed to manage and implement the study and the intervention, quantitatively, the following were explored: amount and type of administration, time, space and expertise as well as study and intervention financial demands. Qualitatively, comments and themes in participants' feedback around the organisational aspects of the study and participants' resources needed to participate in the study and the interventions were explored.

Quantitative results.

Administration time and expertise. In order to gain enough knowledge of Qualtrics, the online platform used to complete outcome measures for the study, 8.41 minutes were spent contacting customer support. Approximately two working days were spent setting up the

questionnaires and some of the automatic reminders. For manual reminders, an average of 40 minutes per week was spent sending email reminders to participants for the duration of the study. Four working days were spent advertising the study online. Two working days were required to conduct interviews, and ten working days were spent entering and analysing data by the researcher, who is on the Doctorate training in Clinical Psychology, with support from supervisors. Interviews were transcribed by a professional transcriber. Clinicians were not required to deliver CFI-online. Therefore overall, setting up the study did not take a large amount of time, and setting it up did not require particular training, but required technical support from Qualtrics customer services. Analysing the data required a level of training and expert supervision. Delivering the intervention took no time and required no space as it was provided online.

Study and intervention financial and technological demands. Audio-files(CFI-online) developed by Professor Paul Gilbert and made freely available on the compassionate mind foundation website (compassionatemind.co.uk) were utilised. This kept costs to a minimum and provided a standardised intervention. Qualtrics and SPPS required a license fee to use. However, costs for these are covered for students by the University of Essex, thus were free to use for the researcher. Other researchers would have to be aware of these licencing fees. Phone-calls for interviews cost 50 GBP. Qualtrics provided an effective way of both collecting and evaluating the data. Data from Qualtrics could be imported into SPSS, thus limiting any data inputting or scoring errors. Due to a function within Qualtrics of requiring participants to provide responses to all questions before moving to the next page, and due to the capacity to restrict response values, this minimized both missing data and erroneous inputs from participants.

The above findings suggest that a relatively low amount of administration time or expert input was needed to run the study. This is especially true given the intervention is standardised and offered without clinician support.

Qualitative Results

Category 4: Feasibility – evaluating resources

Study Organisation. Four participants commented on the organisation of the study. Overall, they stated it was well-organised and they appreciated the reminders to practice the meditations and questionnaires (…" well put together, the whole thing. I just think it was really well put together. I liked the fact that we got reminders, and I liked that you could just click the link and it would open it up", Participant 2; "it's got a nice sort of easy feel about it, the whole thing", Participant 4; "well delivered and the amount of reminders was useful because I would have forgotten to complete the questionnaires if not", Participant, 5; "the reminders were really quite useful as a sort of 'Have you done it? What's the next step?' bit", Participant 8). Thus, it appears that participants felt the study was 'user-friendly' in that it was ran smoothly, without demanding much of them in terms of understanding how to participate, and without any study organisational problems affecting their ability to participate. Indeed, it seems interviewed participants appreciated reminders for practice and for completing measures.

Study participation demands. Participants indicated overall that participation was easy and did not take too much time. However, some participants indicated that bearing it in mind and making time for it was difficult amongst other life obligations. Despite being pleased they only had to try CFI-online for a minimum of five minutes, they were more satisfied with it when attempting a longer meditation session. Participant 2 indicated, "I think yeah, it's trying to bear it in mind amongst everything else was tricky really. I don't think five minutes is too much"; "cut

short sometimes, but five minutes suggestion made that ok", Participant 5. Participant 8 similarly suggested, "you've always got five minutes somewhere, so that's perfect […] Five minutes was okay and enough, but a bit longer tended to make things feel a bit better".

Objective 5

Preliminary evaluations of participants' responses to CFI-online were quantitatively evaluated by examining the presence of change in quantitative data collected before, immediately after, and one month following the intervention. Effect sizes, clinically significant (Jacobson, & Truax, 1991), and reliable change (using the Leeds Reliable Change Index Calculator by Agostinis, Morley and Dowzer, 2008) were assessed to explore the potential effect CFI-online may have with this population. Qualitatively, participants' responses to CFI-online were examined by gaging any themes around any effects participants expressed, as attributed to their practice of CFI-online.

Quantitative results.

Inferential statistical analyses. Scores were not normally distributed across all time points. Therefore, the non-parametric Wilcoxon Signed-rank test was conducted 12 times to explore changes within the EDEQ-Global, SCS-Total, SCS Self-Judgment subscale and FSC, across all time-points to explore short and longer-term changes and whether changes are maintained, in outcomes that the literature suggests are important to target in the treatment of ED-symptoms. A Bonferroni correction was applied to control for familywise error ($p = 0.004$).

A one-way Analysis of Variance (ANOVA) would have been an appropriate statistical test to analyse within-group statistical differences. However, inspections of histograms, Q-Q plots and skewness and kurtosis z scores of the outcome measures suggested that measures were not normally distributed across all time-points (see Appendix U). Thus, assumptions of normality

were violated, and non-parametric tests were deemed more appropriate. Given the small sample size of the study, this was expected. Conducting numerous statistical significant tests increases the change of familywise error, affecting the validity of results. Nevertheless, a series of non-parametric tests were performed for the outcome measures most relevant to the objectives of the study (EDEQ-Global, SCS-Total, SCS Self-Judgment subscale and FSC) and a Bonferroni correction was applied. Effect sizes were also calculated, for both statistically significant and non-significant findings. This is because significance tests do not directly indicate the size of an effect. Furthermore, when sample sizes such as in feasibility studies like this one are small, and given Bonferroni corrections can be conservative, statistical tests have a high risk of a Type II error. Large effect sizes even if non-significant, may point towards the need for larger, more powerful studies in the area. Effect sizes were estimated using Rosenthal's (1991) formula of r = *z*-score/ √N. They were interpreted using Cohen's (1998) criteria of interpreting effect sizes (effect sizes of .10, .30 and .50, indicate a small, medium and large effect, respectively).

The Wilcoxon-Signed Rank test was used to explore differences between baseline and post-intervention, baseline and follow-up and post-intervention and follow-up mean scores. Given the feasibility nature of the study and it's focus, the secondary outcomes of depression, anxiety and stress, and the EDEQ-S were not included in the statistical analyses. Table 15 summarises outcome measure data changes between all time-points.

Table 15

Changes in scores between baseline, post-intervention and follow-up median scores

	Median (Range)		**Effect Size**	**p-value**
EDEQ-Global	Baseline n =74	Post-intervention	r = 0.48	0.001*
		n = 23		
	3.28 (5.22)	2.26 (5.18)		
	Baseline	Follow-up	r = -0.55	0.001*
	n = 74	n = 20		
	3.28 (5.22)	1.86 (4.21)		
	Post-intervention	Follow-up	r = -0.32	0.101
	n = 23	n = 20		
	2.26 (5.18)	1.86 (4.21)		
SCS	Baseline n =74	Post-intervention	r=-.056	0.001*
		n = 23		
	2.42 (3.10)	2.65 (2.42)		
	Baseline	Follow-up	r = -0.45	0.005
	n = 74	n = 20		
	2.42 (3.10)	2.96 (3.45)		

	Post-intervention n = 23 2.65 (2.42)	Follow-up n = 20 2.96 (3.45)	r = -0.16	.421
SCS- Self-Judgement	Baseline n =74 2.00 (3.60)	Post-intervention n = 23 2.60 (3.60)	-r = -0.38	0.010
	Baseline n = 74 2.00 (3.60)	Follow-up n = 20 2.40 (3.40)	-r = -0.38	0.017
	Post-intervention n = 23 2.60 (3.60)	Follow-up n = 20 2.40 (3.40)	r = 0.28	.155
FSC	Baseline n =74 21.50 (51.00)	Post-intervention n = 23 16.00 (43.00)	r = -0.33	0.27
	Baseline	Follow-up		0.016

n = 74 21.50 (51.00	n = 20 10.00 (30.00)	r = -0.38	
Post-intervention n = 23 16.00 (43.00)	Follow-up n = 20 10.00 (30.00)	r = -0.10	0.623

*Indicates statistical significance at Bonferroni corrected p value of p < 0.004

For those who completed post-intervention measures, EDE-Q global levels were significantly lower at post-intervention (*Mdn* = 2.26) than at baseline (*Mdn* = 3.28), *z* = -3.224, *p* = .001, *r* = .48, indicating a medium effect size. At one-month follow-up, EDE-Q global levels were significantly lower (*Mdn* = 1.86) than at baseline (*Mdn* = 5.22), *z* = -3.509, *p* = .001, *r* = .55, indicating a large effect size. There were no significant changes between post-intervention and one-month follow-up scores in EDEQ-global scores, indicating a maintenance effect as expected See Table 15).

At post-intervention, SCS-total levels were significantly higher (*Mdn* = 2.65) than at baseline (*Mdn* = 2.42). *z* = -3.772, *p* = .001, *r* = .56, indicating a large effect size. At one-month follow-up, SCS-total levels were not significantly higher (*Mdn* = 2.96) than at baseline (*Mdn* = 2.42). *z* = -2.838, *p* = .005, *r* = .45, indicating a medium effect size. There were no significant changes between post-intervention and one-month follow-up scores in SCS-total scores, indicating a maintenance effect.

With regards to exploring changes on participants' levels of self-criticism, the SCS- Self-Judgement subscale was explored. Higher scores indicate lower self-judgment. At post-

intervention, SCS-Self-Judgement subscale levels were not significantly different (*Mdn* = 2.60) than at baseline (*Mdn* = 2.00). z = -3.5723, p = .01, r = .38, indicating a medium effect size. At one-month follow-up, SCS-Self-Judgement subscale levels were not significantly different (*Mdn* = 2.40) than at baseline (*Mdn* = 3.60). z = -2.381, p = 0.017, r = -0.38, indicating a medium effect size.

Similarly, there were no significant changes in FSC scores between baseline (*Mdn* = 21.50) and post-intervention (*Mdn* = 43.00), z = -2.211, p = 0.27, r = -0.33, suggesting a medium effect size. No changes were observed between baseline (*Mdn* = 21.50) and follow-up (*Mdn* = 10.00), z = -2.416, p = 0.016, r = -0.38, suggesting a medium effect size, nor between follow-up (*Mdn* = 10.00) and post-intervention (*Mdn* = 16.00), z = -0.491, p = 0.623, r = -0.10, suggesting a small effect size.

Reliable change index and clinically significant change.

Clinically significant change statistics were deemed important to evaluate. Firstly, given the small sample size of the study, the reliability of the within-group results may be limited. Secondly, though statistical differences in the within group analyses may indicate to an extend significant differences across the time-points of the study, clinical significance tests can explore the effectiveness of CFI-online in regards to whether participants moved from the 'clinical' range to the 'non-clinical' range of scores on outcomes. Reliable and clinically significant change scores were calculated for the EDEQ-Global, and its four subscales between baseline and post-intervention, baseline and follow-up and post-intervention and follow-up. As indicated in the Methods section, 'Criterion C' (Jacobson, & Truax, 1991) was used to set the level for clinically significant change. Thus, CSC was assumed if the post-intervention/follow-up EDEQ score was closer to the mean of the functional population mean rather than that of the dysfunctional population.

As seen in table 16, most participants did not demonstrate reliable change. However, a moderately-sized minority showed clinically significant change on some measures between baseline and post-intervention, or at follow-up. Namely, at post-intervention compared to baseline, 26% and 31% participants showed CSC in their scores on the EDE-Q global and the subscale of Shape Concern, respectively. At follow-up compared to baseline, 45% and 50% achieved CSC in their scores on EDEQ-global and Shape concern, respectively; with another 30% showing CSC in the two subscales of Eating and Weight-concern. Only up to two participants showed this change on the Eating Restrain subscale at post-intervention and follow-up, compared to baseline. Notably, it was in this same subscale that the largest proportion of participants showed CSC at follow-up compared to post-intervention (62%), whereas CSC in all other scales were minimal between these two points.

Table 16

*No. of participants who have reliably changed at post- and follow-up **

	Pre-Post (n=23)			Pre-Follow up (n=20)			Post-Follow up (n=13)		
	Improve* (CSC)	No change	Deteriorate	Improve* (CSC)	No change	Deteriorate	Improve (CSC)	No change	Deteriorate
EDEQ-Global	7 (6)	16	0	10 (9)	9	1	1(1)	12	0
EDEQ-Restraint	1 (1)	22	0	2 (2)	18	0	8 (8)	5	0
EDEQ-Weight Concern	5 (3)	18	0	7 (6)	12	1	0	13	0
EDEQ-Eating Concern	2(2)	21	0	6 (6)	12	2	1 (1)	12	0

EDEQ-Shape concern	8 (8)	15	0	10 (10)	9	1	0	13	0

*Statistical reliable improvement; CSC = where relevant, of those who reliably improved, no. clinically significantly changed

A much smaller minority declined on the EDE-Q and its' subscales. There was no deterioration between baseline and post-intervention, and between post-intervention and follow-up. However, there was deterioration for up to two participants between baseline and follow-up. The same participant indicated deterioration across the EDE-Q-Global and the subscales of weight, eating and shape concern. On examination of this individual's scores, this participant consistently scored the lowest of all the sample at baseline (indeed, her EDE-Q global score was the only one below the 25th percentile on the EDE-Q Global). It may be that this individual experienced a sudden change in their symptoms, or that they misunderstood how to complete the measures at baseline, thus significantly under-reporting their symptoms at baseline as much lower, compared to follow-up. Similarly, the second person who indicated a deterioration in the eating concern subscale, scored significantly lower in this subscale at baseline (M = 1.60) compared to the mean of their other three EDE-Q subscales (M = 3.29). They may have become much more concerned with their eating at follow-up, or perhaps they mistakenly scored themselves much lower at baseline. Notably, both participant's follow-ups were completed following the Christmas Holiday period, whereby there may have been more opportunities to over-eat. This may also explain some of the increase in weight/shape/ eating concerns.

Qualitative Results

Category 5: Preliminary evaluations

Impact

Changes. All five participants who attempted the meditations described experiencing positive cognitive, emotional and/or behavioural changes, often offering how a change in one of these areas fed into changes in the others.

Behavioural changes included four participants describing continuing the meditation practice and exerting an effort to be more self-compassionate:

> So now, when I'm feeling a bit … I can do those breathing exercises without having to listen to the track…Yeah, being kind to myself, and thinking to myself that I need to be kind to myself and not be so negative towards myself. Seeing more of the positive and less of the negative. (Participant 3)

Participant 4 also commented that she was able to see her body with more acceptance:

> And I found that very hard to start with and after I'd done a couple of the meditations or the, yeah the meditation things, the visualisation, I wouldn't say I was 100% happy to look but I could definitely look at myself more compassionately. And I've noticed that at home as well. I'm almost not even deliberately…I'm almost deliberately looking, which is a massive thing. I haven't been able to do that for years…At my body, yeah…With no clothes on… (Participant 4)

Three participants described adopting improved eating patterns, often as a result of less self-criticism/more self-compassion or less rumination/focus on eating:

> But eating as well, and I have actually … because Christmas is coming…so it was like, 'Do you know what? I'm just going to be kind to myself'. And actually, because I haven't been so focused on what I shouldn't be eating, or as I think I shouldn't be eating, whatever it may be, I don't think I've eaten as much. (Participant 3)

Participant 4 also suggested:

> So my big problem with eating is that I binge eat. […] I now don't, I'm not critical about that. I don't worry about that so much. And I, which is really good, and I think that's a

> permanent thing. I do think I'm eating less but it's not something that I'm not really watching that. (Participant 4)

Participant 8 indicated they were able to make healthier food choices:

> If I'm in work I'll end up eating absolutely everything in sight, particularly if there's cakes and things. And now I've been really good at taking stuff in and making sure that I've got food that I know is good for me. (Participant 8)

Reported emotional changes included feeling more positive about one's body and more optimistic overall ("I've definitely felt benefit from it, and I feel more positive about myself and my body image. I can use it to change things, push things in a more positive direction", Participant 3).

Five participants described experiencing reduced anxiety ("…I've practised it since, when I've been feeling a bit anxious, and it definitely brought my anxiety level down", Participant 3). Others explained feeling less guilt and more self-compassion:

> I'm basically being more compassionate about myself. I definitely think that's a big factor and I think that's permanent as well […] But I think I am, I definitely think I'm bingeing less. And also, I'm not critical about what I eat. So I don't feel guilty. (Participant 4)

Cognitive changes included reduced self-criticism and less rumination surrounding eating ("I now don't, I'm not critical about that [bingeing]. I don't worry about that so much. And I, which is really good, and I think that's a permanent thing", Participant 4. Participant 3 indicated that less rumination over her eating may have led to improvements in her eating

patterns; “It's made me think, 'Okay, so I'll be kind to myself. I ate it, but that's gone now, that's past, I'll just carry on'. So I think that my eating pattern has improved”.

Others indicated feeling more present and making mindful decisions and worrying and being less critical about eating something that they perhaps deemed as unhealthy:

> I think it's helped me make much more mindful decisions, and it's … yeah, I suppose that's the biggest thing, that mindful decision making and being able to lose the anxieties…around eating in a way, so it's that mindful decision that if I have had something that is normally seen as bad, that's fine, that's okay, I've enjoyed it and I can move on and make those positive choices in the future”. (Participant 8)

Most Impactful Meditations. The most impactful meditations reported were the “compassionate other”, and “soothing breathing” and “addressing self-criticism” (“it was definitely the first one and the last one”, Participant 3; The last one and the first one, they were the two” (Participant 8) “Compassionate friend thing idea, has really helped enormously”, Participant 4.

Additional Emergent Themes from Qualitative Analyses

There were two additional categories with themes that emerged from the qualitative analyses. These revolved around participants’ offering of criticisms and recommendations as well as some of their self-reflections. These additional themes that emerged from the data will be presented below.

Category 6: Suggestions/Criticisms.

Recommendations. Most participants indicated that they had no recommendations for improvement. However, two participants spoke critically about the measures, the intervention and the study delivery.

Measures. Participants indicated they would have liked the questionnaires to be shorter, ("Back to improvements, the questionnaires were quite long and quite repetitive", Participant 3). Thus, shorter questionnaires such as the EDEQ-S may be preferable for future studies and reduce some study participation demands.

Intervention. Participant 1 indicated that the quality of the recording could have been improved, ("it's something about the recording that made it sound like it was being switched on and off"), that it's timing could be set at 10 minutes, ("I didn't like the idea of just stopping midway"[…] "I think ten minutes would have been manageable"), and that it could be more specific to body-image ("I was interested in something that might be more specific around body image".

Study delivery. Participant 1 said they would have preferred daily reminders, ("I think it would have been helpful for me to have a reminder every day…"). Participant 2 would have preferred receiving text reminders ("I think maybe a text reminder would have been more possible for me cause I've always got my phone with me but I'm not always accessing emails". Participant 2 suggested that engagement with the intervention could be enhanced by asking participants to set practice reminders and providing a rationale for the benefits of practicing meditation as well as seeing someone face-to-face:

> …Getting people to set reminders for themselves at a convenient time for them […] I wonder if there would need to be some preparatory work or something about the

potential benefits […] but having somebody face-to-face or a commitment face-to-face is potentially going to be more motivating. (Participant 2)

Category 7. Self-reflections

Views on difficulties. Participants spontaneously offered some of their views of their difficulties and what maintains them, such as negative self-talk or self-punishment. For example, Participant 2 indicated that they judge themselves negatively, and set high standards for themselves, which then leads them to use even more self-critical talk. The participant indicated that doing so makes them more likely to overeat, ("I think the worse feel about myself and the more pressure I put on myself and the more negative words I use about myself, the more likely I am to overeat"). It may be that over-eating in this example is used to soothe, or punish oneself, as a response to the negative self-talk.

Views on improvements. Indeed Participant 2 offered their views on what improved their difficulties, suggesting that, if she did not punish herself after over-eating or eating something she deemed 'wrong', then she was more likely to treat this incident as a 'one-off' and return to making healthy eating choices for the day, or the week. This may suggest that by reducing self-criticism as a function of increasing self-compassion, the pattern of over-eating or bingeing for some may be interrupted, ("Because I haven't punished myself for it, I've not continued on the path of perhaps eating the wrong thing, for the rest of the day or the rest of the week", Participant 3).

Additional qualitative feedback from short open-ended text responses. Open text anonymous responses by 13 participants at one-week indicated that 11 participants found that the practice was "not too demanding" the pace was "good" and that the instructions were "easy to understand". One participant indicated that they listened to the whole recording each time.

Another indicated that they initially found it uncomfortable to practice but that they would like to keep trying as they felt it would benefit them. Two others indicated that the questionnaires were long/repetitive. At post-intervention, eight respondents suggested they found the amount of recommended daily practice of five minutes was "about right" and/or that they practiced more than this (e.g., 10-15 minutes each time they practiced). The remaining three comments indicated that the participant fell asleep each time, or only practiced the first meditation, or that they were too busy to practice.

Summary of findings. Firstly, regarding evaluating the recruitment capability and resulting participants' characteristics, this study was successful at attracting N = 30 of individuals experiencing ED-symptoms at a level above the 25th percentile of the EDE-Q. Participants were predominantly White British women (age M = 39). On average, they experienced moderate/severe ED-symptoms, low self-compassion, high self-judgment, low fear of self-compassion and mild or moderate depression/anxiety/stress. A majority was educated at Master's Level and above, whereas 31.1% was educated below Degree level. Qualitative findings indicated that participants participated in hope of reducing their self-criticism and eating/body-shape/weight difficulties. Those who attempted CFI-online suggested that CFI-online was useful and relevant to their needs and they would recommend it. Some indicated that CFI-online was not specific enough to eating/body-image concerns.

Secondly, in terms of assessing and refining data collection procedures and outcome measures for this population, Qualtrics enabled efficient data collection, with minimal missing data and no unusable data. The shorter scale of the EDEQ-S indicated good internal reliability, thus could be used in future similar studies, minimizing demands on participants. Qualitative participant feedback indicated that they did not experience completing questionnaires negatively.

Thirdly, examining the acceptability and suitability of CFI-online and the study revealed that attrition rates did not meet the criteria of success for this study. These were 69% at post-intervention and 70% at follow-up, which is above the aimed threshold of 35%. The study's criterion of sufficient adherence of practicing three times a week was partially met with adherence dropping to twice or three times weekly during the second week. Qualitative participant feedback suggested that some were unable to practice at all, and others practiced several times a week. Findings from those who completed quantitative self-reports indicated that CFI-online was acceptable to them. Qualitative responses revealed that barriers to attempting CFI-online were time-constraints, forgetting to practice, disliking the quality of the audio, difficulties with conjuring the imagery, and resisting self-compassion due to ingrained struggles with it. Facilitating factors included not needing to listen to the recording to remember some of the practices and being able to make five minutes to practice. Adverse effects were not reported by anyone. Regarding study attrition, some interviewees did not complete questionnaires due to assuming that their feedback would not be helpful given they did not practice CFI-online. However, even some who reported beneficial effects did not complete outcome measures. Evaluations of CFI-online suggested it was perceived as accessible, with some feeling dissatisfied with the audio quality. All interviewed participants who attempted CFI-online described feeling helped or satisfied with it.

Fourthly, evaluating resources needed to run and to participate in the study, indicated that these were deemed feasible. Delivering the intervention was free, standardised, and did not require clinician support, or clinical space or time. Setting up the study online did not require expertise. However, analysing the data required a level of expertise and time, and expert supervision. Qualitative results for this fourth objective indicated that participants found

the study user-friendly. Participation was easy in terms of the daily five-minute practice, but completing some of the questionnaires felt repetitive/ long.

Fifthly, preliminary evaluations of CFI-online effectiveness in quantitative findings indicated statistically significant improvements of a large effect size on the EDE-Q and SCS, which were maintained at follow-up. There were no significant improvements on the SCS-Self-Judgement subscale nor on the FSC. A considerable minority of participants indicated clinical and reliable change in their EDE-Q scores at post-intervention or follow-up. A minimum of 26% and a maximum of 62% achieved such changes on the EDE-Q and its' subscales. A much smaller minority declined on the EDEQ and its' subscales with only two participants deteriorating between baseline and follow-up. Qualitative findings seem to complement the above findings. All five participants who attempted CFI-online described feeling benefits from it. They described positive cognitive, emotional and/or behavioural changes that fed into each other. The reported most impactful meditations were the "compassionate other", and "soothing breathing" and "addressing self-criticism". Participants' recommendations included; making measures shorter and less repetitive, improving the audio quality and standardising its' length to 10 minutes, and making it more specific to body-image. Some recommended that clinician support may be needed for those with long-standing difficulties. In terms of study-delivery some indicated a preference for daily reminders, potentially via text. Participants reflected that negative self-talk or self-punishment may maintain their difficulties. They suggested that self-compassion interrupted a cycle of self-criticism and self-punishment followed by binge-eating/overeating that fed into even more self-criticism.

Discussion

The chapter will begin by summarising the objectives of the research within the context it is placed in. Results of each objective will then be outlined and presented in relation to theory and previous research. Following this, the limitations and strengths with recommendations for future research will be discussed. The study's clinical, research and theoretical implications will then be offered. The chapter will end with reflections on the experience of conducting the research.

Summary of the Context and Objectives of the Study

Though evidence-based treatments for EDs such as CBT are available within the NHS, access to them can be difficult for those with ED- symptoms. This can be due to patient-factors such as ambivalence and stigma, but also due to insufficient health-care resources (Vollert et al., 2018). In the UK, perhaps due to limited funding (Layard et al., 2012), resources can often focus on intervention rather than prevention or early interventions. Thus, those who do not meet criteria for a mental health diagnosis may not be offered a service. Furthermore, ED remission rates from current, resource-intensive evidence-based treatments such as CBT-E are not optimal (Williams et al., 2017). Internet-based self-help interventions may potentially address barriers pertaining to treatment access and service-related barriers. Indeed, it has been suggested that internet-based interventions can offer cost-effective and easily accessible interventions more widely to those in the community who may otherwise not be able or are not eligible to access face-to-face therapy (Wilfley, Agras, & Taylor, 2013).

Online self-compassion meditation interventions have shown some promising results in helping those with ED- symptoms (Albertson et al., 2015; Kelly & Carter, 2015). Though such interventions need further evaluation, community ED studies can be costly and show inconclusive findings due to lack of engagement (Ali, Fassnacht, Gulliver, Bauer, Griffiths, 2017).

Given these challenges, it is important to design studies to inform the feasibility and acceptability of online self-compassion interventions.

The present study aimed to explore the feasibility and acceptability of compassion-focused imagery online (CFI-online) intervention without clinician support for people in the community who are experiencing ED- symptoms. Firstly, it explored recruitment capability and the characteristics of those interested. Secondly, it evaluated outcome measures and data collection processes. Thirdly, it explored how acceptable CFI-online was for this population. It did this by evaluating the study's attrition and follow-up rates, adherence, participants' satisfaction and capacity to engage with the intervention, and by investigating the presence of any adverse effects. Fourthly, it explored the resources associated with running and participating in the study. Fifthly, it provided some preliminary evaluations of changes in the primary outcomes of self-compassion and eating psychopathology, self-judgment and fear of self-compassion. Where possible, the above objectives were also evaluated though short open-ended feedback from participants and post-treatment qualitative feedback from eight participants, five of whom were interviewed on the phone, and three of whom answered open-ended questions from the interview schedule online.

Summary of Results

Objective 1: Recruitment.

Participant demographics and relevance of intervention to intended participants.

Seventy-four participants consented online to participate in the study. Recruitment for the study was done almost exclusively online and primarily on Facebook, illustrating that advertising this study through social media and especially Facebook may be particularly effective. This lends

support to research suggesting that Facebook can be a powerful tool for conducting psychological research (Kosinski, Matz, Gosling, Popov, & Stillwell, 2015).

The mean age for participants was 39.18, which is similar to the online community study by Albertson et al., (2015). Like similar studies, the sample was almost exclusively female. This gender bias may indirectly lend support to Stice's (2001) sociocultural dual pathway of EDs, whereby social pressures to be thin, which are more pronounced for females in mass social media, can lead to body-dissatisfaction and a perception of thinness as a beauty ideal.
The study's criterion of recruitment success of recruiting at least 30 individuals who score over the 25th percentile of the EDE-Q (percentiles taken by Mond et al., 2006) was achieved, given the study recruited 73 participants who scored above this percentile. Interestingly, most of the sample scored well above the 25th percentile on the EDE-Q Global, with a large proportion scoring over the 85th percentile. Indeed, 22% scored within the clinical range of this scale of eating psychopathology. Those who had a formal diagnosis of a mental health problem and/or where receiving treatment were excluded at the point of informed consent. Thus, this finding indicates that there may be a substantial number of people in the community in the UK who experience a high level of ED-symptoms, yet are not receiving treatment, nor have received a formal ED diagnosis. This reflects published estimates reporting that only 25% of those with mental health problems and 27.4% of those with an ED actually access NHS help (Layard et al., 2012; Micali et al., 2017). These results also perhaps support the hypothesis that those with ED-symptoms are resistant to help. This could be due to the fact that various ED-symptoms such as concerns and attempts to control one's weight and shape are ego-syntonic. That is, they fit with one's strive to achieve an ideal body-image. As the theory behind CFT-E proposes, succeeding in controlling one's weight, shape or eating may also give a sense of pride (Goss & Allan, 2014). Thus, certain ED- symptoms may not be deemed as necessarily negative by those who

experience them, even if these symptoms do impair their lives in some way (Byrne, Eichen, Fitzsimmons-Craft, Taylor, & Wilfley, 2016). This finding may also be reflective of barriers in accessing help (e.g., stigma, long waiting lists, and higher threshold entry criteria to NHS services due to limited funding). However, it is important to note that research has indicated that respondents seem to score their symptoms on the EDE-Q higher in self-reports, than in face-to-face diagnostic interviews on the EDE (Fairburn & Beglin, 1994). Notably, research on mode bias (e.g., differences based on the way responses are provided) have indicated conflicting results. Some research has indicated that online respondents tend to report more extreme scores whereas others that they tend to report more mid-point scores (Duffy, Smith, Terhanian & Bremer, 2005).

This project was initially aimed at participants experiencing ED symptoms rated as mild/moderate or higher. The finding that the baseline sample experienced higher levels of ED-symptoms perhaps indicates that CFI-online may be accessible and/or of interest, at least as a first step, even to those with more severe level of symptoms. This is especially true given the study excluded those with an ED/ mental health diagnosis or those receiving mental health treatment and given the reported ambivalence and resistance of those experiencing an ED to engage with interventions (Smink, 2012). Furthermore, the baseline SCS mean score of the sample was 2.46. This is lower than similar studies by Albertson, et al. (2015) or Toole and Craighead (2016) which reported baseline SCS mean scores of 2.65 and 2.80, respectively. This may indicate that, at least in the UK, this population may be in particular need for interventions aimed at increasing self-compassion.

Indeed, feedback from participants suggested that they were attracted to the study due to feeling it resonated with their struggles around self-criticism and their difficulties around eating/shape/weight/body-image. Interviewees who attempted CFI-online felt the intervention

was relevant to them and useful and would recommend study participation. However, one participant felt the intervention was not specific enough to ED-difficulties. Notably even those who struggled to try the meditations, indicated in their adherence open-text feedback that they felt the intervention is relevant to their issues, and could potentially be beneficial to them, should they engage with it more in the future.

Overall, the above findings indicate that the study was capable of achieving the desired sample and was desirable to its target population. Qualitative feedback from interviewed participants suggested that, overall, they felt the intervention was relevant to their needs, but there was a suggestion that it was not specific to ED-symptoms. Interviewed participants who attempted CFI-online indicated that they would recommend CFI-online and participation in similar future research.

Objective 2: Data collection processes and suitability of outcome measures

Using Qualtrics proved to be an effective way of data collection. This is except for the adherence questionnaire as the survey function of not allowing participants to proceed to the next set of measures unless this questionnaire was completed was not set. This would indicate that using the function of 'forcing' an answer from participants would be helpful in future studies to ensure data completeness. Attrition rates for measures ranged between 69% to 77%. These rates were well above the study's objective of not exceeding 35% and are considerably higher than two other similar online studies, whereby attrition rates were 50% for Albertson et al. (2015) and 7.5% for Toole and Craighead (2016). However, participants in Albertson et al. were entered into a draw to win a gift card (four $25 and one $100) for starting and completing the study. For Toole and Craighead participants had contact with researchers as they were required to complete measures on two lab visits one week apart and gained course credit for

completing each assessment. The incentive for participation in this study was only one £50 Amazon voucher. Given the lack of greater incentives and with some suggesting that Internet research can have much higher attrition rates (Eysenbach, 2005), with other online research reporting completion rates as low as 0.5% (Christensen, Griffiths, & Jorm, 2004), this completion rate may in fact not be considered low for internet research standards. There were no significant differences between those who dropped out of the study and those who completed it. However, all those who had reported a previous ED diagnosis dropped out. Thus, the above may indicate that self-compassion is not a concept with which all individuals are comfortable with. Indeed, as a participant indicated in their interview, some individuals may need more support to over-come some of their barriers and ambivalence to self-compassion, especially if this has been a long-standing issue for them. Thus, online, self-help self-compassion approaches may be difficult to engage with, especially without any clinician support. Furthermore, the research placed many demands on participants. It asked them to complete multiple measures at three time points, with adherence measures at one week and two-weeks and asked them to practice daily and to potentially participate in an interview. Thus, to reduce attrition in future studies, it may be important to provide more support, and reduce the amount and length of the questionnaires. Albertson et al. asked participants to complete five questionnaires at baseline, after the three-week intervention and at three months and to practice daily for twenty minutes, which was how long the audios were. Though the number of questionnaires were the same, these were slightly shorter than this study's. Another difference is that the study in Albertson et al. did not use imagery. Instead, it offered loving kindness meditation variants that focused on affectionate breathing and affectionate body scans. It may be, as indicated in interviews in this study, that conjuring imagery may be more difficult, especially given most of the qualitative feedback indicated that the soothing breathing exercise was one of the most preferred

exercises. Furthermore, though this study only required participants to practice a minimum of five minutes instead of 20 minutes as per Albertson et al., some participants suggested that they preferred it when they were able to practice the whole recording in one go, especially as they did not like stopping mid-way.

Participants overall reported that completing measures was not upsetting and instead allowed them to reflect, become more self-aware, or consolidate their learning from CFI-online. Some also indicated that the questionnaires made sense, which may allude to measures having face-validity. However, some participants indicated that questionnaires were long. This study examined the reliability of a shorter measure of eating psychopathology, the EDEQ-S. Findings indicated the measure has good internal reliability with this sample. Therefore, future larger studies with this population could use this measure instead of the EDE-Q, potentially making completing questionnaires less demanding for participants.

Objective 3: Study and intervention acceptability.

Intervention attrition. As previously mentioned, questionnaire attrition rates were 69% at post-intervention and 73% at follow-up thus did not meet the criterion of success in this study of not exceeding attrition over 35%. However, given the study was carried out online without any direct contact with researchers or clinicians, similar research in the literature has comparable or higher attrition rates. In terms of intervention feasibility, it is suggested that attrition should not exceed 33% (Lambert & Ogles, 2004). However, these recommendations are for clinician-led interventions. Furthermore, it was not possible to assess whether participants practiced the meditations, despite not having completed follow-up questionnaires. Indeed, two interviewed participants, who continued practicing CFI-online, despite their positive feedback about the intervention, did not complete follow-up measures. This could suggest that some

participants did practice the meditation but did not complete the online measures. Potentially, at least some participants may have felt completing measures was too time consuming, and thus did not complete them, yet practiced CFI-online. Nevertheless, a third participant did indicate that they felt they should not complete measures given they had not attempted the meditations sufficiently. This highlights one of the difficulties of conducting feasibility studies, whereby getting feedback from non-completers is difficult. Nevertheless, this study did gain some feedback from some non-completers given some individuals had consented from the beginning of the study to be contacted for their feedback. Inviting participants to provide short phone or online feedback may have felt less demanding. It may have facilitated gaining feedback from some who did not complete other questionnaires of the study or attempt CFI-online. Non-completers may have also felt more able to express they had not been able to attempt CFI-online in qualitative feedback, given they could provide more context to their answers. Guilt or shame may have stopped some of the non-completers from completing quantitative measures despite efforts from the researcher to explain that all feedback was welcomed.

The study attrition rate may indicate that, though potentially relevant and initially easily accessible to those with ED-symptoms as noted previously, those with more severe difficulties such as this sample, may need additional support to remain engaged with CFI-online. Indeed, research has indicated that those with ED-symptoms have particularly high drop-out rate from interventions (DeJong, Broadbent, & Schmidt, 2012) often due to extreme ambivalence and low motivation towards change. This was reflected in one participant's comments. She suggested that ironically, those who need to develop self-compassion the most, may be the ones resisting it the most in the first place and thus may need more direct input to remain motivated or to understand the rationale behind developing their self-compassion.

Adherence. The study's adherence criterion was only partially met. In the first week, most participants adhered to the recommended daily practice, but adherence dropped in the second week, with most participants practicing only 2-3 times weekly. Qualitative feedback corroborated these findings, as some participants reported not practicing at all, and others practiced several times a week. This could indicate that motivation to adhere may have dropped, and that many participants did not attempt the final and perhaps most relevant CFI-meditation on addressing self-criticism. It may also be that the specific population is particularly resistant to addressing their self-criticism, and perhaps hold positive views about its' function. This amount of adherence is not dissimilar to Kelly and Carter (2015) whereby a third of the intervention links where opened in the three-week duration of the study. Adherence in this study was also higher compared to Toole and Craighead (2016), whereby only 50% of the participants meditated at least once during the week-long duration of the study.

Capacity to engage with the intervention. Participants self-reported to have experienced CFI-online as relatively 'intense' yet 'easy' at week one, and less so at week two. This may indicate that meditations felt more powerful, yet easy during the first week, but the meditations in the second week felt less easy and less powerful. Thus, more support or guidance may have been needed during week two. Participants reported feeling minimal tension or resistance to the imagery, and experienced it to be rather clear whilst practicing, during both weeks. These findings indicate that CFI-online was acceptable to participants, relatively easy to engage with, yet overall moving and powerful. These findings are similar to McEwan and Gilbert's (2015) in a nonclinical college population except average resistance to the imagery was lower in this study. These findings may reflect the study's finding that the sample on average had low fear of self-compassion on average at baseline, perhaps indicating some openness to receiving self-compassion.

Open-text responses and qualitative feedback from those interviewed corroborated the quantitative findings. They indicated that most respondents did not find CFI-online too demanding and found it understandable, beneficial and easy-paced. However, there were some reported difficulties with constructing the imagery, which led some to give up trying CFI-online. This again may suggest that some participants may need further support with constructing imagery. Qualitative interviews revealed potential barriers in trying CFI-online, such as not having enough time, or forgetting to practice. This may point towards the idea that people found this study online and it had been easy to sign-up for, perhaps spontaneously, without much thought on how the intervention may fit in their lives or indeed, how ready they were to implement a daily self-compassion practice. For some, self-criticism, lack of self-compassion and ED-symptoms may have been chronic difficulties, and thus they may have felt ambivalent about becoming more self-compassionate and needed more motivation and support to address these difficulties. Findings indicated that the quality of the recording, it's lack of explicit focus on ED-symptoms and the fact that participants were encouraged to stop it after practicing for five minutes, instead of listening to the whole audio which was up to 20 minutes, may have also been a factor that put people off attempting the CFI-online. Study attrition may be reflective of these difficulties in a substantial proportion of participants. However, this would be difficult to confirm given many of those who dropped-out did not provide feedback. What seemed to facilitate engagement was having spare time and the fact that soothing breathing' and/or 'compassionate other' were practices participants could try without having to listen to the audio again.

Overall the above suggest that CFI-online may be generally feasible and acceptable to those that persevere with it. However, this cannot be assumed for the whole sample, given the high attrition rate. Though statistical analysis did not indicate significant differences between

those who dropped out and those who did not, the qualitative feedback from some participants suggests that some had found it difficult to engage with CFI-online and thus did not attempt it or chose an alternative meditation. The aforementioned barriers or reasons for non-engagement with CFI-only may need to be addressed in the future to increase its' acceptability.

Adverse Effects and Satisfaction with CFI-online. None of the interviewed participants in the qualitative part of the study indicated experiencing any adverse effects, whereas all five participants who practiced the meditations felt satisfied and/or helped by it. They reported that CFI-online concepts were useful and could be used in their daily lives. A few participants suggested they continued to practice the ideas from CFI-online. Two participants however felt irritated by the intervention, due to difficulties with constructing the imagery, or disliking the audio quality. All interviewed participants expressed an appreciation for the intervention, and especially 'soothing breathing'. This preference may have been biased by the fact that it had been the first meditation offered. Thus, more participants would have been likely to try this. However, participants commented that this and the 'compassionate other' meditation practices were their most preferred meditations, and especially accessible and useful to them, given they did not need to listen to the recording to remember how to practice them.

Objective 4: Evaluating resources.

Administration time and expertise. Overall, running the study was not deemed resource-intensive, pointing towards its' feasibility. The intervention was free and did not require clinician input. Advertising it was also free and did not a require substantial amount of time, yet it reached a relatively large number of participants. The software needed to run it (SPSS, Qualtrics) require a licence fee and analysis required a level of expertise. Qualtrics, which was also used in previous research (e.g., in Toole and Craighead, 2016) proved to be effective in

minimizing missing and unusable data. Qualitative feedback suggested that participants found the study user-friendly. Therefore, these findings reflect a wider move towards incorporating technology and online resources as cost-effective means of increasing access to interventions and participation in studies (Kosinski et al., 2015). Most of those who provided feedback suggested study participation was not too demanding. However, the high attrition rate, may indicate some participants did find it too demanding, especially given some feedback indicated lack of time was a factor of non-engagement and that questionnaires were long or repetitive. Thus, the amount and length of questionnaires may have been a lot for some participants. Though overall the study was not deemed resource-intensive, it may be important to not over-rely on technology and to not eliminate direct contact with researchers or clinicians, given some attrition may be contributed to lack of this. A level of clinician or researcher support may increase study participation and thus conserve resources by reducing attrition.

Objective 5: Preliminary evaluations

Q*uantitative changes.* This feasibility study did not intend to assess the clinical effectiveness of CFI-online with this population but to offer preliminary evaluations of participants' responses to the intervention, as proposed by Orsmond and Cohn (2015). Thus, quantitative and qualitative data were explored for signals of treatment benefit.

Outcome measure results suggest some positive effects of CFI-online at post-intervention or one-month follow-up. Participants experienced significant improvements in self-compassion and in ED-symptoms. The median SCS-Total score at baseline of *Mdn* = 2.42 would indicate a relatively low level of self-compassion out of possible 5 and is lower to the means reported by Kelly and Carter (2015), Albertson et al., (2015), and Toole and Craighead (2016). Baseline EDE-Q mean scores were higher in this study at baseline, post-intervention and follow-

up compared to Kelly and Carter (2015) who specifically recruited individuals with a BED diagnosis. This would perhaps suggest that the avenues via which the study was advertised, which included social media pages and groups related to dieting, exercising, weight-loss and fitness, attracted participants with particularly low self-compassion and high ED-symptoms. This would be fitting with CFT-E theory which poses that those with ED-symptoms focus on competitive dynamics, whereby shame and pride dominate (Goss & Gilbert, 2002) and they have a social mentality that is competitive and rank sensitive, as opposed to affiliative and compassionate (Cardi, Di Matteo, Gilbert, & Treasure, 2014). Thus, it may be that the social media groups and pages related to fitness, weight-loss and dieting that the study was advertised on, provide fertile ground for such dynamics. Furthermore, such social media groups and pages could potentially function as a platform whereby individuals with ED-symptoms, as CFT-E would suggest (Goss & Allan, 2009), strive to regulate their threat system via trying to fit in and gain acceptance and respect for their weight-loss/fitness/ability to maintain a diet. Goss and Allan suggest that those with ED-symptoms may over-use these strategies (as opposed to self-compassion), to the detriment of their capacity to successfully access their soothing system. This would be fitting with the finding that the online sample in this study scored low on self-compassion and high on ED-psychopathology. The theory (Goss & Gilbert, 2002) also suggests that, when individuals try to access their affiliative drive through the aforementioned strategies, the drive/ threat systems become interlinked, and lead to vicious cycles that further hinder the successful development and access of the soothing system. Thus, individuals employ further strategies relating to ED-symptoms to manage threat and access the drive/pride system, worsening ED- symptoms. This would then explain why the sample also experienced particularly high levels of ED-symptoms.

It has been argued that effect sizes may be more important than statistical significance in interpreting differences, as they measure the size of differences. Contrarily, p values, which are highly dependent on sample size, provide no information about the size of differences (Sullivan & Feinn, 2012). In previous similar studies such as Kelly and Carter (2015) whereby the self-compassion intervention included imagery, self-talk, letter-writing, and food-planning, changes on the EDE-Q Global were of a small to medium effect size (r = 0.18). In this study, effect size change was considerably larger, whereby, in EDE-Q global the effect size was medium (r = .48) and large (r = .55) at post-intervention and follow-up respectively. These improvements were also statistically significant. Thus, this may indicate that the specific component of self-compassion *imagery*, as in CFI-online may be particularly potent in helping improve ED-symptoms. CFI-online may also bring SCS-Total improvements in this population. As self-compassion changes were also of a large effect size at post-intervention (r = .56), and this improvement was statistically significant. These changes are similar or larger to previous similar studies by Kelly and Carter, who found small to medium size changes, and Albertson et al. who found large effect (d = 0.82) changes. However, in this study, at follow-up, changes were of a medium effect size (r = .45) and were not statistically significant. Similarly, compared to baseline, mean scores in the self-judgment subscale of the SCS indicated a reduction of a medium effect size post-intervention (r = .38), and of a small effect size at follow-up (r = 0.28). These changes approached but did not achieve statistical significance. These findings may indicate that adopting a more self-compassionate and less self-judgmental stance in this population may be a long process, that requires longer-term and perhaps more intensive or clinician directed input than a two-week self-help intervention. However, findings may have failed to achieve statistical significance given the conservative p value following the Bonferroni correction.

Though the majority of the sample did not demonstrate clinically significant and reliable changes (CSC), a moderately-sized minority did. Compared to baseline, over 25% at post-intervention and over 45% at follow-up of those who completed measures, demonstrated CSC in their EDE-Q global scores and in the subscale of shape-concern scores. A third of participants showed CSC and reliable change at follow-up compared to baseline in the EDE-Q subscale of eating and weight-concern. The eating-restrain subscale revealed the less amount of people achieving CSC at post-intervention and follow-up, where only one and two people achieved this change respectively. However, it was on this subscale that most individuals (eight out of 13, 62%) who completed measures achieved CSC at follow-up compared to post-intervention. This links with findings that those with anorexia (e.g. who tend to restrain their eating) are less cognitively flexible (Fairburn, Cooper, & Shafran, 2003). Thus, eating-restrain symptoms may take longer to treat with self-help interventions such as CFI-online. Furthermore, in terms of the emotional regulation theory by Goss and Gilbert, (2002) restraining one's eating may provide a sense of pride and thus positive emotions, therefore individuals may be particularly resistant to shifting this.

A much smaller minority deteriorated on the EDE-Q and its' subscales. There was no deterioration between baseline and post-intervention and between post-intervention and follow-up. However, there was deterioration for up to two participants between baseline and follow-up. The finding that there was minimal deterioration, with up to 10% of those who completed measures showing a deterioration would suggest that, overall, the intervention could be delivered safely to those experiencing this level of symptoms. However, as there were participants found to experience some deterioration, this area would need further exploration. Furthermore, the study has high baselines of EDE-Q scores. Hence, these significant and

clinically and reliable changes may in part be due to regression to the mean as opposed to the intervention being beneficial.

The overall pattern of quantitative results would suggest that this intervention can provide some benefits to those struggling with their weight/shape/ eating or body-image and other ED- difficulties and risk factors. It would also indicate that changes can be maintained or occur a month following completion of the intervention. This may suggest that self-compassion is a complex and lengthy process to grapple with and develop, especially in those with high ED-difficulties.

Qualitative exploration of changes. Of those interviewed, all five participants who tried CFI-online reported cognitive, emotional and/or behavioural improvements, and suggested that change in one area led to improvements in another. Others explained ruminating less and criticising themselves less about what they eat, which they said led to them to binge-eat less, make wiser food choices or feel less guilty about their eating. Emotional changes included feeling more positive about one's body, or optimistic about improving issues. Others reported feeling calmer or less anxious. Overall, the qualitative feedback suggests that some participants experienced increases in self-compassion. They felt that this enabled them to reduce rumination and criticism about their eating/weight/shape. This was reported to reduce their anxiety over these issues and lead them to adopt improved eating habits/choices and increase their acceptance of their body-shape/ eating/ weight.

Summary of preliminary findings.

These qualitative and quantitative findings are consistent with the CFT-E (Goss & Allan, 2014) formulation of ED-symptoms based on Gilbert's (2009) theory of three emotional regulation systems. Self-compassion is theorised to activate the soothing system and counteract

self-criticism, reducing the threat-system and thus, lessening the drive to be thin or control ones' eating. This process then reduces ED-behaviours. The findings are also consistent with previous online self-kindness meditations with similar populations (Albertson et al. 2015) and add that, self-compassion imagery may impact symptoms specifically related to eating psychopathology, as opposed to only body-image. The positive significant findings in the quantitative data also indicate that CFI-online may be helpful for this population. Thus, results add to previous findings that have indicated that the use of self-compassion online interventions in clinical BED populations (Kelly & Carter, 2015) can be beneficial, and extend these findings for those experiencing wider ED- difficulties.

Limitations

Findings must be considered within the context of several study limitations, some of which already highlighted in previous sections.

Study design. Given the lack of randomisation into an active and a control group, the study design suffers from limited internal validity. Thus, changes or lack of thereof could potentially have been attributed to factors other than the intervention (Barker & Pistrang, 2015). The study did not measure extra-therapeutic factors that could have influenced intervention outcomes positively or negatively by as much as 40% (Miller, Duncan & Hubble, 1997). According to Hubble, Duncan and Miller (1999) such factors could include events in the participants' lives that occurred during their participation, personal resources and support networks. For instance, though a substantial proportion of participants appear to have achieved CSC from post-intervention to follow-up in the EDEQ-Restrain subscale, it may be that this finding was confounded by 'time-effects' (Barker & Pistrang, 2015). The study spun across months that included the Christmas period, whereby individuals may tend to over-eat than to

restrain their eating. Participants also knew they were receiving CFI-online to potentially increase their self-compassion and reduce their worries around shape/eating/weight, thus findings may have been confounded by expectancy effects.

The design of the present study was informed by previous research (McEwan & Gilbert, 2015; Albertson et al., 2015) but added a qualitative component whereby some participants offered feedback in interviews. There was potential experimenter bias in terms of the telephone interviews as it had been clear to the interviewees that I was the researcher evaluating the intervention. Participants were encouraged in interviews and email reminders to be honest in their feedback, given the study was evaluating the feasibility of this intervention and thus constructive feedback was welcomed. Regardless, participants may have felt inclined to provide positive rather than negative feedback. Indeed, those who provided less positive feedback or were unable to practice the intervention, expressed some regret and were apologetic to me in interviews. Therefore, future studies would benefit from having an independent researcher conducting the interviews or sending email reminders to complete the intervention or study measures, to ensure participants feel able to provide honest and open answers, thus limiting social desirability and experimenter demand bias.

Intervention duration. A further methodological limitation was the two-week duration of the intervention. Toole and Craighead (2016) offered a similar intervention for a shorter time (one week), but this was to a non-clinical college population. Kelly and Carter, (2015) offered an online self-compassion intervention to a BED sample for three weeks. Though the intervention duration was comparable to these two similar studies with a non-clinical and a clinical sample, it is possible that offering CFI-online for longer would have been more suited to this sample, given it presented with some moderate to severe ED-symptoms. Indeed, in Kelly et al. (2015) adherence was increased as the three-week intervention progressed. However, a longer

intervention may have increased attrition. For example, Toole and Craighead (2016) repeated Albertson et al.'s (2015) study but decreased attrition compared to Albertson by reducing the duration of the study from three weeks to one.

Analysis. Furthermore, as the study was a feasibility study and not an outcome study, it may not have been sufficiently powered to allow an adequate exploration of subscales. Analysis employed non-parametric tests, which can suffer from reduced power to detect a significant effect, if one does exist and this risk of Type II error may have been increased from applying the Bonferroni correction which may be conservative, especially for preliminary evaluations (Moran, 2003). The study is also limited by the fact that a completer analysis was performed to explore changes for the quantitative data. Emails sent to remind all participants to complete questionnaires stated that responses and feedback from everyone would be appreciated, regardless of whether they were able to complete the meditations at all, especially as this was a feasibility study. Nevertheless, this analysis is subject to completer/non-completer bias as it may be that those who were more motivated to engage with CFI-online or felt they benefitted from it, completed these measures and provided qualitative feedback. Thus, the study is limited by the lack of data from non-completers. Given the above, findings of the study cannot be confidently attributed to the intervention. However, this is a feasibility study and not an outcome study. Thus, it only provided some preliminary findings to provide future researchers with an indication of whether this intervention is worth evaluating in a larger study. Another limitation relates to the limited generalisability of the study, given it only recruited from across the UK. Though generalising results is not an aim of feasibility studies, it is important to consider that these findings may not generalise to other populations. This is especially true given the sample consisted mainly of white UK women. The implication of this is that the study cannot be generalised to men with ED-symptoms, nor to non-white populations or those not living in the

UK. Moreover, given the high attrition, findings may only relate to women highly motivated to engage in compassion-based interventions for ED-symptoms. Nevertheless, the findings can potentially inform larger research on UK treatment approaches in public services for white females who live in the UK and who experience ED-symptoms and are seeking help for these.

The analytic approach taken to analyse the interview data (framework analysis) which is considered a technique of thematic analysis, employed a primarily top-down, deductive approach. This was in order to explicitly explore themes within pre-set areas of interest around feasibility and acceptability, and because it is recommended for evaluating participants' responses to treatments (Newbold, Hardy, & Byng, 2013). However, this analysis did not allow a more in-depth exploration of the experience of individuals and the meaning they made of CFI-online. Face-to-face interviews of longer duration would potentially facilitate this. Employing a mixed method approach as that suggested by Yin (2014) whereby qualitative data is presented alongside quantitative case-series data, would also enable a greater understanding of the reasons behind each participant's scores on measures.

Strengths

Based in the UK. The study explored the feasibility of CFI-online with an online, community UK population with ED- symptoms, which had not previously been investigated. Thus, it offers insight into the feasibility of CFI-online with this population. In a context whereby, those with ED- symptoms in the UK struggle to access treatment, whether due to internal or external barriers, providing an intervention that addresses these barriers may help improve outcomes for this population. Given the increased number of individuals accessing social media sites in the UK, this study highlights the potential benefits of conducting online research and

offering CFI-online, to reach those who may not otherwise be likely to participate in such research, nor access treatment for their ED-symptoms.

Intervention delivery. The intervention delivery method benefited from requiring no direct clinical input. Given that the findings are indicative of potential therapeutic effects, this suggests CFI-online may be a cost-effective treatment for those in the UK community experiencing similar difficulties. In terms of the imagery meditations offered in this study, the *compassionate other exercise and compassionate self* (Gilbert, 2009) are exercises often offered within CFT. Thus, they benefit from high fidelity to the CFT model. Furthermore, given CFI-online is a recording by professor Paul Gilbert himself, it was standardised across all participants. This limits any clinician variability factors that could impact the way the intervention is delivered, (e.g., limit its fidelity to the model and introduce random variability in the intervention).

Outcomes. Another strength of this study is that it assessed eating psychopathology by using the formal measure of EDE-Q, and that it offered some psychometric evaluations of the shorter EDE-Q version (EDEQ-S) which could be used in future studies to reduce participation burden, and potentially reduce attrition. Furthermore, the study also offered a longer follow-up than previous studies allowing more longer-term explorations of outcomes than previous similar studies which only explored outcomes post-intervention (e.g. Kelly and Carter, 2015).

Design quality. This is the first mixed-method study evaluating the responses of those with ED- symptoms to CFI-online. The literature review highlighted that previous studies in this area of self-compassion interventions with those with ED- difficulties did not include a qualitative component to them to explore in more depth participant's responses to the interventions. In view of initiatives to increase service-user involvement in their care and treatment, getting feedback from participants about this intervention is particularly important.

The mixed-methods design allowed the research to qualitatively explore the five objectives of this feasibility study, complementing, corroborating or expanding on the quantitative findings. It enabled participants to offer constructive criticisms. These may link to attrition, poor adherence reasons or why this intervention was not helpful to some of the participants. Thus, feedback from participants can inform improvements in future studies.

Analysis and reporting of data. A range of analyses was employed allowing triangulation of findings. The qualitative analysis adopted framework analysis, which allowed a systematic and transparent (Yardley et al., 2000) method of analysing the qualitative data. This meant it could be checked by supervisors to reduce the chance that results from the qualitative data were biased by the researcher's assumptions and thus increase their credibility. The quantitative and qualitative data were combined to lend more credibility and coherence to findings. Finally, to the best of the author's knowledge, this is the first online study, to date, that has preliminarily examined the clinical usefulness of CFI-online with those with ED- symptoms, by evaluating clinically and reliably significant changes in eating psychopathology outcomes.

Implications for Practice

These findings add support to previous research evidencing that self-compassion can benefit those with ED-symptoms such as body-image dissatisfaction (Albertson et al., 2015), and eating psychopathology (Gale et al, 2014). This study provides evidence for the feasibility and acceptability of CFI-online for those with ED-symptoms in the community and provides some insight into the challenges of offering CFI-online to them.

Findings of this feasibility study suggest that CFI-online may be a safe, and less resource-intensive and easily accessible first step to those needing help around ED- difficulties. It gives

some preliminary evidence that CFI-online can promote self-compassion and the reduction of eating psychopathology for some individuals in the community. An intervention such as this could potentially be considered an initial intervention geared towards those who do not need or are unable to access more direct support. This is particularly relevant in the context of limited funding for public mental health services (Layard et al., 2012) and stepped care, which is recommended for some EDs (Fairburn and Peveler, 1990). Recent findings showed that individuals with EDs felt positive towards online self-help (McClay, Waters, Schmidt, & Williams, 2016). CFI-online may also be offered as a first step to accessing more in-depth interventions, to those who are more ambivalent about change, (e.g., are in the pre-contemplation/contemplation stage of change (Prochaska & DiClemente, 1992). Indeed, Hötzel et al. (2014) found that internet-based interventions can enhance motivation to change in those with ED-symptoms and can lead to some initial symptom improvement. More generally, if mental health difficulties and ED-symptoms are conceptualised within a continuum (Bentall, 2006; Wildes & Marcus, 2013) these findings indicate potential benefits of offering self-compassion interventions to those with various severity levels of EDs. However, as the findings of this study suggest, those with more severe ED-symptoms or chronic difficulties with self-compassion and self-criticism may need more clinician support, to address some of the barriers to increasing their self-compassion. Indeed, though McClay et al (2016) found that an ED UK community sample were positive about online self-help, their majority wanted this to be offered with some level of clinician support.

Implications for Research

As this research was a feasibility study and employed a repeated measures uncontrolled study design, it would not be appropriate to draw firm conclusions about the effectiveness of CFI-online. Offering the intervention for longer than two weeks may be more beneficial. As

demonstrated in this sample, even those in the community not accessing direct clinical support or having a diagnosis of an ED, can experience severe or more chronic symptoms, thus potentially taking longer to respond to interventions. Furthermore, a longer intervention could enable participants to form the new habit of practicing self-compassion meditation, which as research suggests can take 18 to 254 days; highlighting that habit formation can be a long process (Lally, Van Jaarsveld, Potts, & Wardle, 2010). More research would also need to explore how participants experiencing mild vs more severe ED- symptoms or those with particularly and/or chronically low self-compassion respond to CFI-online. It could investigate whether more direct methods of delivering this intervention are more appropriate for those on the higher end of the ED-symptoms severity continuum and those with chronic experiences of low self-compassion or with particularly low self-compassion.

Engagement with the intervention appears to have been difficult for some participants, as evidenced in the interviews and attrition rates. Furthermore, none of the participants suggested the 'common humanity' audio meditation of the intervention as their preferred meditation, nor highlighted it as helpful in interviews. To address these issues, future research may evaluate whether the 'common humanity' aspect of the intervention could be enhanced by offering an online forum, potentially moderated by a clinician, that would enable themes of common humanity amongst those following the intervention to surface. Offering an online community could re-enforce feelings of common humanity, considering CFT in a group can enhance the experience of 'common humanity' (Neff & Germer, 2013). Sharing experiences could also help reduce shame (Judge et al., 2012). Furthermore, if future research incorporates an online community forum in CFI-online, it could boost adherence to it. Participation in a group whereby narratives around the helpfulness of daily CFI-online practice are dominant or enabled, could, according to the theory of planned behaviour (Ajzen, 1991), highlight normative beliefs

and subjective norms around the importance of committing to this new behaviour. This may increase adherence, and decrease attrition in future studies, two important limitations of this study. Support from peers and online discussion of the major tenets of CFI-online could also facilitate understanding of these concepts and the adoption of a more self-compassionate stance. As some participants recommended, adherence to CFI-online and study procedures (e.g. completing follow-up questionnaires) could also be increased by using daily reminders of practice, which could also be sent by text.

Some participants indicated they would have liked the questionnaires to be shorter. Future research could use the shorter version of the EDE-Q, (EDE-QS) to reduce participation demands, and perhaps attrition. Moreover, future research could evaluate whether making CFI-online more specific to ED-symptoms, (e.g., by employing concepts from CFT-E), improving its' audio quality and standardising each recording so that it lasts for 10 minutes as a whole, increases feasibility and acceptability. The Body Compassion Scale (Altman, Linfield, Salmon & Beacham, 2017) could be used in future studies, to specifically map onto and measure changes relating to self-compassion towards one's body. Starting to use this scale may also encourage the development of self-compassion interventions that focus more explicitly on body issues.

Once these adaptations are made, which would hopefully reduce attrition and enhance study retention and intervention adherence, the next step could be trialling the intervention with a larger sample, potentially using a control group. The study recruited 74 individuals at baseline and retained 23 and 20 people at post-intervention and follow-up respectively. Primary outcomes revealed medium to large effect changes. Thus, it is possible that a larger RCT trial would be feasible especially if the abovementioned adherence improvements and intervention adaptations are made. Such trial, would allow the evaluation of the efficacy of the intervention, using more powerful inferential statistics. It would also allow for the more detailed exploration

of subscales. Larger future trials could include wait-list controls, and/or an active control group, to investigate whether CFI-online is more or less effective than no therapy and/or other online interventions such as CBT. Additionally, more in-depth approach to interviews and analysing qualitative feedback on the intervention, would enable a more open exploration and thus a richer understanding of how this intervention is experienced by participants.

Recommendations for CFI-online Development

As findings indicated, participants felt that increasing their self-compassion was particularly relevant to them. However, they made some recommendations for further development of CFI-online which will be discussed below.

Some participants indicated that they preferred meditations that they could easily remember, without needing to play the audio. Therefore, providing participants with multiple formats of the intervention (e.g., audio, written) may aid remembering the imagery practices, and thus practicing them in their daily lives, without needing the audio. Furthermore, CFI-online, as some participants indicated, did not include self-compassion exercises that explicitly addressed ED-symptoms. This may explain some of the high attrition, from which this study is limited. Thus, CFI-online could be developed further, so that it addresses ED-symptoms explicitly. For example, it could be adapted so that it addresses self-criticism and directing self-compassion to oneself, specifically related to one's body-image, weight, eating and/or shape.

A participant also suggested that it would be helpful to urge potential participants to set personal reminders for practice, and to give them a rationale about the benefits of daily CFI-online practice. It was also acknowledged that direct clinician support may increase motivation and remove barriers around engaging with CFI-online. Thus, if more resources were available, telephone, online chat or in more severe cases, face-to-face conversations with a trained

clinician could facilitate intervention engagement and address any study and intervention engagement difficulties.

Given participants did not experience significant changes in their fear of self-compassion (FSC) and given research has indicated that baseline levels of FSC predict treatment outcomes, (Kelly, Carter, Zuroff, & Borairi, 2013) it may be necessary to adapt CFI-online by actively addressing such fears and barriers to self-compassion (Gilbert, McEwan, Catarino & Baiao, 2014). It would be useful to examine whether the abovementioned adaptations would increase the feasibility and acceptability of CFI-online in this population.

Implications for Theory

Findings from this study provide some preliminary support for the effectiveness of CFI-online for a UK-based community sample with a range of ED- symptoms. Findings suggest that CFI-online can increase self-compassion and reduce ED-symptoms. However, the process of how this happens still needs more exploration.

Some reflections from interviewed participants potentially elucidate the mechanism of change, in a way that would offer support for Goss and Allan's (2014) adaptation of the CFT model, based on Gilbert's (2009) evolutionary theory of three systems of emotional regulation, in the treatment of EDs (CFT-E). According to the theory, self-compassion activates the soothing system reducing the threat-system activated by self-criticism. Thus, drive to control one's weight/eating to reduce their sense of threat lessens, reducing ED-behaviours. Participants seemed to indicate that, as CFT-E posits, by being more self-compassionate, they were able to ruminate less about their eating/weight/shape and be less self-critical. This then was suggested to result in them making healthier eating choices in the future, and/or accepting their shape more. This would then, as the CFT-E model suggest, break the vicious cycle of an increased drive to control one's eating as a way of regulating their over-activated threat system, which is

triggered by criticism of one's shape/body/weight/eating. Reductions in the self-judgment subscale offer some support of this claim, but these reductions were not statistically significant, given the conservative p value.

Participant's reflections would also offer partial support to Stice's (2001) affect regulation model, whereby disordered eating is used to regulate one's own negative feelings, such as depression, or body dissatisfaction. Given the study did not measure self-esteem, it would be difficult to hypothesise whether findings fit the Cognitive Behavioural (CB) model (Fairburn, Cooper, & Shafran, 2003), in which low self-esteem is predictive of over-valuing one's shape/weight as a measure of self-worth, leading to disordered eating.

Nevertheless, self-compassion may be the missing link helping achieve an increase in self-esteem that is irrespective of one's shape/weight. Indeed, self-compassion has been suggested to bring a stable and unconditional sense of self-worth that is irrespective of achievements (Neff and Vonk, 2009) which in the case of those with ED- symptoms would be maintaining a diet or achieving a certain weight/ body-shape. Some participants in this study commented that they experienced a sense of self-acceptance (such as being able to see themselves naked in the mirror when they could not do so in the past) and a sense of self-acceptance instead of self-punishment if they have eaten something they deemed 'unhealthy'. Self-compassion may also be important in enabling a person to regulate their emotions as an alternative, more helpful way than to using unhelpful eating habits to regulate their emptions, which Stice (2001) suggests maintains ED's. However, such claims are speculative and would need further exploration. Differences across other outcome measures were in the direction fitting with CFT-E, in that increases in SCS can lead to improvements in psychological wellbeing (e.g. reduction in fear of self-compassion and self-judgment), but these differences were not significant.

Self-reflexivity

Research Process

Decision to Explore ED-symptoms and self-compassion. Before commencing the clinical psychology training I completed a professional dance degree in the UK. This experience exposed me to the fact that many individuals can experience ED-symptoms and that even when these difficulties do not reach a clinical level, they can be disabling. It also alerted me to the fact that accessing help can be a difficult process due to individual and contextual factors. The research interest in self-compassion was sparked by my clinical experience of using CFT and CFI-online, and my curiosity as to whether such treatments would be feasible and accessible to a community-based sample that may not have access or be reluctant to engage in treatment.

Experience of a mixed-methods approach. Choosing a mixed-methods approach arose from previous clinical experience of involving service users in evaluating the services they received. It felt important to capture the views of those this intervention was hoped to reach. This was especially relevant given this was a feasibility study that hoped to inform future research and improvements in the area.

This approach required me to become familiarised not only with quantitative methods of analysis but also with qualitative methods, thus broadening my research skills. Though a mixed-methods approach has at times been demanding, the experience of exploring participants' views was invaluable and often encouraging. Indeed, at times I was surprised to hear the kind or extent of benefits some participants reported, as I had not anticipated this. Receiving some critical feedback about CFI-online also felt important. It gave context to quantitative findings, such as attrition and adherence, and provided constructive ideas for future improvements.

Conducting a feasibility study using a mixed methodology has given me the confidence to continue using both quantitative and qualitative approaches, even on a smaller scale in my clinical work. Indeed, I hope to use framework analysis to evaluate a group intervention offered in my current clinical placement. This study has highlighted to me the importance of including a qualitative approach when evaluating interventions, as this lends itself well to better capturing service-users' views and their recommendations and helps gain a more intricate understanding of whether an intervention works for individuals.

Data analysis

Having come to this research with a basic understanding of statistics, my main goal with regards to the analysis was to develop my statistical analysis skills to a more advanced level. I had initially hoped to employ a more complex method of quantitative analysis, such a MANOVA, based on previous research (McEwan & Gilbert, 2015). However, I had not appreciated that it was not appropriate for a feasibility study with a limited sample. Indeed, it was a challenging task to choose the most appropriate method of statistical analysis, especially given most of the data were not normally distributed. Choosing whether to analyse the data using parametric vs non-parametric tests was a subjective one, that I based on reading more expert opinion on the matter (Fields, 2013). Eventually I decided that non-parametric tests would be most appropriate, especially given that choosing ANOVA's would limit the sample even more, as ANOVA in SPSS excludes cases listwise, thus increasing completers' analysis bias. Furthermore, especially having assessed studies included for this in my systematic review, I applied the Bonferroni correction to control for family-wise error given multiple analyses. This made finding significant changes more difficult. Applying this correction demanded discipline, given some results would have been significant had the p value been set at a less conservative level, thus teaching me the importance of ensuring that I limit biasing my results from multiple testing.

Furthermore, though I was curious to explore more subscales such as those from the Depression Anxiety Stress Scale- 21 (DASS-21), I accepted that due to the relatively small sample size and the feasibility nature of the study, such analyses would not have been appropriate.

Choosing what method I would employ to analyse qualitative data required a significant amount of reading. In the end, framework analysis seemed most appropriate because I had explicit goals of exploring specific factors relating to feasibility and given framework analysis has been reported to be a recommended approach to evaluating interventions. Furthermore, due to the flexibility of framework analysis from an epistemological perspective, it fitted the critical realist position of this mixed-methods research.

Finally, conducting a meta-analysis was challenging given I had not performed one before. I feel that doing so has informed my capacity to understand and consider meta-analytic reviews, both in my research and in my clinical work.

Overall, this project has taught me that there are numerous ways of conducting research, none of which perfect. Eventually, I realised that it is most important to make an informed decision based on theory, the type of data, time constraints, and the research objectives. I believe this research has enabled me to develop my ability to perform various methods of data analysis as well as how to review and appraise research when informing my own practice as a scientist-practitioner.

I have felt particularly encouraged and inspired by both positive and negative feedback from participants during interviews, which has helped me place some of the quantitative findings in context and think more creatively about possible improvements of the intervention and study. This process alerted me to the importance of getting patients' views on studies and interventions and not only rely on quantitative outcomes. Finally, the apparent and reported

benefits in some of the participants has inspired me to continue pursuing research in this area. It has helped me appreciate the importance of research, even when this feels laborious and tedious at times, given it may inform future research and eventually clinical practice, and potentially benefit those who need help.

Conclusion

This study provides some tentative findings supporting the feasibility and acceptability of CFI-online with individuals with a level of ED- symptoms as assessed by feasibility study objectives recommended by Orsmond and Cohn (2015) and by Thabane et al., (2010). CFI-online appears to be attractive to those who experience ED- symptoms, with some indication that this intervention is relevant to their difficulties. However, some findings indicate that the intervention could be more tailored and specific to ED-symptoms and that some individuals may need more clinician support to benefit from this intervention. Data collection procedures in this study appear to be appropriate and suitable. They can be refined by using a shorter measure of ED psychopathology which in this study has shown promise as an alternative, less time-consuming measure to complete. The high attrition rate and only partial adherence to study procedures in this study would indicate some difficulties with its acceptability. Recommendations based on these findings have been made for future research. The study and intervention appear overall to be cost-effective, but demands on participants may be high, and thus need to be reduced in future studies using shorter measures. Preliminary evidence from both quantitative and qualitative data tentatively support the effectiveness of CFI-online, but this requires further validation.

References

Agostinis, A., Morley, S. J., & Dowzer, C. N. (2008). The Leeds Reliable Change Index Calculator. *Retrieved from www. lihs. leeds. ac. uk/ dclin/ research_ products. htm/ RCI/ RCI_ main_ page. html*, *1*.

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), 179-211.

Albertson, E. R., Neff, K. D., & Dill-Shackleford, K. E. (2015). Self-compassion and body dissatisfaction in women: A randomized controlled trial of a brief meditation intervention. *Mindfulness*, *6*(3), 444-454.

Ali, K., Farrer, L., Fassnacht, D. B., Gulliver, A., Bauer, S., & Griffiths, K. M. (2017). Perceived barriers and facilitators towards help-seeking for eating disorders: A systematic review. *International Journal of Eating Disorders*, *50*(1), 9-21.

Allen, K. L., Byrne, S. M., & McLean, N. J. (2012). The dual-pathway and cognitive-behavioural models of binge eating: prospective evaluation and comparison. *European child & adolescent psychiatry*, *21*(1), 51-62.

Allen, K. L., Byrne, S. M., Oddy, W. H., & Crosby, R. D. (2013). DSM–IV–TR and DSM-5 eating disorders in adolescents: Prevalence, stability, and psychosocial correlates in a population-based sample of male and female adolescents. *Journal of abnormal psychology*, *122*(3), 720.

Altman, J. K., Linfield, K., Salmon, P. G., & Beacham, A. O. (2017). The body compassion scale: Development and initial validation. *Journal of health psychology*, 1359105317718924.

American Psychiatric Association, & American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (revised 4th ed.). *Washington, DC.*

American Psychiatric Association. *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub, 2013.

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*, 176–181.

Barker, C., & Pistrang, N. (2015). *Research methods in clinical psychology: An introduction for students and practitioners*. John Wiley & Sons.

Barrow, A. (2007). Shame, self-criticism and self-compassion in eating disorders (Doctoral dissertation, Psychology).

Bentall, R. (2006). Madness explained: Why we must reject the Kraepelinian paradigm and replace it with a 'complaint-orientated' approach to understanding mental illness. *Medical Hypotheses, 66*(2), 220-233.

Benton T. & Craib I. (2001). *Philosophy of Social Science: The Philosophical Foundations of Social Thought.* Palgrave, Basingstoke.

Berg, K. C., Peterson, C. B., Frazier, P., & Crow, S. J. (2012). Psychometric evaluation of the eating disorder examination and eating disorder examination-questionnaire: A systematic review of the literature. *International Journal of Eating Disorders, 45*(3), 428-438.

Berger, P., & Luckmann, T. (1991). *The social construction of reality: A treatise in the sociology of knowledge*. UK: Penguin.

Bhaskar, R. (1978). On the possibility of social scientific knowledge and the limits of naturalism. *Journal for the Theory of Social Behaviour*, *8*(1), 1-28.

Bisman, J. (2010). Postpositivism and accounting research: A (personal) primer on critical realism. *Australasian Accounting Business & Finance Journal*, *4*(4), 3.

Borenstein, M., Hedges, L. V., Higgins, J., & Rothstein, H. R. (2009). *Introduction to Meta-Analysis*. West Sussex, United Kingdom: John Wiley & Sons, Ltd.

Bowlby, J. (1980). *Attachment and loss, volume 3: loss; sadness and depression*. London: Basic Books.

Braun, T. D., Park, C. L., & Gorin, A. (2016). Self-compassion, body image, and disordered eating: A review of the literature. *Body image*, *17*, 117-131.

Brewin, N., Baggott, J., Dugard, P., & Arcelus, J. (2014). Clinical Normative Data for Eating Disorder Examination Questionnaire and Eating Disorder Inventory for DSM-5 Feeding and Eating Disorder Classifications: A Retrospective Study of Patients Formerly Diagnosed Via DSM-IV. *European Eating Disorders Review*, *22*(4), 299-305.

Browne, Richard H. "On the use of a pilot sample for sample size determination." *Statistics in medicine* 14.17 (1995): 1933-1940.

Byrne, M. E., Eichen, D. M., Fitzsimmons-Craft, E. E., Taylor, C. B., & Wilfley, D. E. (2016). Perfectionism, emotion dysregulation, and affective disturbance in relation to clinical impairment in college-age women at high risk for or with eating disorders. *Eating behaviors*, *23*, 131-136.

Campbell, M., Fitzpatrick, R., Haines, A., Kinmonth, A. L., Sandercock, P., Spiegelhalter, D., & Tyrer, P. (2000). Framework for design and evaluation of complex interventions to improve health. *BMJ, 321*(7262), 694-696.

Cardi, V., Di Matteo, R., Gilbert, P., & Treasure, J. (2014). Rank perception and self-evaluation in eating disorders. *International Journal of Eating Disorders*, *47*(5), 543-552.

Castellini, G., Sauro, C. L., Mannucci, E., Ravaldi, C., Rotella, C. M., Faravelli, C., & Ricca, V. (2011). Diagnostic crossover and outcome predictors in eating disorders according to DSM-IV and DSM-V proposed criteria: a 6-year follow-up study. *Psychosomatic Medicine*, *73*(3), 270-279.

Christensen, H., Griffiths, K. M., & Jorm, A. F. (2004). Delivering interventions for depression by using the internet: randomized controlled trial*. BMJ, 328,* 265.

Clark, V. L., & Creswell, J. W. (2011). *Designing and conducting mixed methods research* (2nd ed.). London: SAGE

Cohen, J. (1998). *Statistical Power Analysis for the Behavioural Sciences* (2nd ed.). New York: Lawrence Erlbaum Associates.

Coopers, P. W. (2015). The costs of eating disorders: Social, health and economic impacts. *B-eat, Norwich*.

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2013). Developing and evaluating complex interventions: the new Medical Research Council guidance. *International Nursing Studies, 50*(5), 587–592.

Creswell, J. W. (2015). *A concise introduction to mixed methods research*. Thousand Oaks, CA: Sage.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research*. (2nd Ed.). Thousand Oaks, CA: Sage.

Cruickshank, J. (2007). Critical Realism and Critical Philosophy. *Journal of Critical Realism, 1*(1), 49-66.

DeJong, H., Broadbent, H., & Schmidt, U. (2012). A systematic review of dropout from treatment in outpatients with anorexia nervosa. *International Journal of Eating Disorders*, *45*(5), 635-647.

Downs, S. H., & Black, N. (1998). The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non- randomised studies of health care interventions. *Journal of Epidemiology and Community Health, 52,* 377-384.

Duarte, C., Pinto-Gouveia, J., & Stubbs, R. J. (2017). Compassionate Attention and Regulation of Eating Behaviour: A pilot study of a brief low-intensity intervention for binge eating. *Clinical Psychology & Psychotherapy*.

Duffy, B., Smith, K., Terhanian, G., & Bremer, J. (2005). Comparing data from online and face-to-face surveys. *International Journal of Market Research*, *47*(6), 615.

Eysenbach, G. (2005). The law of attrition*. Journal of medical Internet Research, 7*(1).

Fairburn, C. G. (2008). Eating disorders: The transdiagnostic view and the cognitive behavioral theory. In, *Cognitive behavior therapy and eating disorders* (pp. 7-22). New York, NY, US: Guilford Press.

Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire?. *International journal of eating disorders*, *16*(4), 363-370.

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behavior Research and Therapy., 41*, 509-528.

Fairburn, C. G., & Peveler, R. C. (1990). Bulimia nervosa and a stepped care approach to management. *Gut*, *31*(11), 1220.

Gagne, D. A., Von Holle, A., Brownley, K. A., Runfola, C. D., Hofmeier, S., Branch, K. E., & Bulik, C. M. (2012). Eating disorder symptoms and weight and shape concerns in a large web-based

convenience sample of women ages 50 and above: Results of the gender and body image (GABI) study. *International Journal of Eating Disorders*, *45*(7), 832-844.

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.

Gale, N. K., Heath, G., Cameron, E., Rashid, S., & Redwood, S. (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC medical research methodology*, *13*(1), 117.

Garner, D. M. (2002). Measurement of eating disorder psychopathology. In: Brownell K.D., & Fairburn C. G., (Editors). *Eating disorders and obesity: A comprehensive handbook*. New York: Guildford Press.

Gergen, K. (1999). *An Invitation to Social Construction*. London: Sage.

Gideon, N., Hawkes, N., Mond, J., Saunders, R., Tchanturia, K., & Serpell, L. (2016). Development and psychometric validation of the EDE-QS, A 12 item short form of the Eating Disorder Examination Questionnaire (EDE-Q). *PLoS One*, *11*(5), e0152744.

Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in psychiatric treatment, 15*(3), 199-208.

Gilbert, P. (2010). An introduction to compassion focused therapy in cognitive behaviour therapy. *International Journal of Cognitive Therapy*, *3*(2), 97–112. doi:10.1521/ijct.2010.3.2.97

Gilbert, P., Catarino, F., Duarte, C., Matos, M., Kolts, R., Stubbs, J., Basran, J. (2017). The development of compassionate engagement and action scales for self and others. *Journal of Compassionate Health Care, 4*(1), 4.

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 and Psychotherapy, 13,* 353–379.

Goss, K., & Allan, S. (2009). Shame, pride and eating disorders. *Clinical psychology & psychotherapy*, *16*(4), 303-316.

Goss, K. & Allan, S. (2012). An Introduction to Compassion-Focused Therapy for Eating Disorders (CFT-E), In Fox, J.R.E. & Goss, K. P. (Eds.) *Eating and its Disorders*, Chichester, John Wiley & Sons Ltd.

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.

Goss, K., & Gilbert, P. (2002). Eating disorders, shame and pride: A cognitive-behavioural functional analysis. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualization, research & treatment* (pp. 3–54). Hove, UK: Brunner-Routledge.

Gowers, S. G., & Shore, A. (2001). Development of weight and shape concerns in the aetiology of eating disorders. *The British Journal of Psychiatry: The Journal of Mental Science, 179,* 236-242.

Greenland, S. (1994). Quality scores are useless and potentially misleading. *Am J Epidemiol*, *140*(3), 300-1.

Grey, D. (2016). *Treatment Non-Completion of a Compassion-Focused Therapy Eating Disorder Programme: A Mixed Methods Study* (Doctoral dissertation, Department of Neuroscience, Psychology and Behaviour).

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ*, *29*(2), 75.

Guba, E.G. (Ed.) (1990). *The Paradigm Dialog.* London: Sage.

Hay, P. (2013). A systematic review of evidence for psychological treatments in eating disorders: 2005–2012. *International Journal of Eating Disorders*, *46*(5), 462-469.

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.

Herpertz-Dahlmann, B. (2015). Adolescent eating disorders: Update on definitions,

symptomatology, epidemiology, and comorbidity. *Child And Adolescent Psychiatric Clinics Of North America*, *24*(1), 177-196.

Higgins, J. P., & Green, S. (Eds.). (2011). *Cochrane handbook for systematic reviews of interventions* (Vol. 4). John Wiley & Sons.

Hilbert, A., Bishop, M. E., Stein, R. I., Tanofsky-Kraff, M., Swenson, A. K., Welch, R. R., & Wilfley, D. E. (2012). Long-term efficacy of psychological treatments for binge eating disorder. *The British Journal of Psychiatry*, *200*(3), 232-237.

Holm-Denoma, J. M., Richey, J. A., & Joiner Jr, T. E. (2010). The latent structure of dietary restraint, body dissatisfaction, and drive for thinness: A series of taxometric analyses. *Psychological assessment*, *22*(4), 788.

Hötzel, K., von Brachel, R., Schmidt, U., Rieger, E., Kosfelder, J., Hechler, T., ... & Vocks, S. (2014). An internet-based program to enhance motivation to change in females with symptoms of an eating disorder: a randomized controlled trial. *Psychological medicine*, *44*(9), 1947-1963.

Hubble, M., Duncan, B. & Miller, S. (1999). *The heart and soul of change: What works in therapy?* Washington, DC: American Psychological Association.

Ioannidis, J. P., & Trikalinos, T. A. (2007). The appropriateness of asymmetry tests for publication bias in meta-analyses: a large survey. *Canadian Medical Association Journal*, *176*(8), 1091-1096.

Jacobi, C., Hayward, C., de Zwaan, M., Kraemer, H. C., & Agras, W. S. (2004). Coming to Terms With Risk Factors for Eating Disorders: Application of Risk Terminology and Suggestions for a General Taxonomy. *Psychological Bulletin*, *130*(1), 19-65. doi:10.1037/0033-2909.130.1.19

Jacobson, N. S., & Truax, P. (1991). Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. *Journal of consulting and clinical psychology*, *59*(1), 12.

Juarascio, A. S., Manasse, S. M., Schumacher, L., Espel, H., & Forman, E. M. (2017). Developing an acceptance-based behavioral treatment for binge eating disorder: Rationale and challenges. *Cognitive and Behavioral Practice*, *24*(1), 1-13.

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*, 420–429.

Kass, A. E., Kolko, R. P., & Wilfley, D. E. (2013). Psychological treatments for eating disorders. *Current opinion in psychiatry*, *26*(6), 549.

Kelly, A. C., & Carter, J. C. (2015). Self-compassion training for binge eating disorder: A pilot randomized controlled trial. *Psychology and Psychotherapy: Theory, Research and Practice. doi*:10.1111/papt.12044

Kelly, A. C., Carter, J. C., Zuroff, D. C., & Borairi, S. (2013). Self-compassion and fear of self-compassion interact to predict response to eating disorders treatment: A preliminary investigation. *Psychotherapy Research, 23*(3), 252-264.

Kelly, A. C., Wisniewski, L., Martin-Wagar, C., & Hoffman, E. (2017). Group-Based Compassion-Focused Therapy as an Adjunct to Outpatient Treatment for Eating Disorders: A Pilot Randomized Controlled Trial. *Clinical psychology & psychotherapy*, *24*(2), 475-487.

Killen, J. D., Taylor, C. B., Hayward, C., Haydel, K. F., Wilson, D. M., Hammer, L., ... & Strachowski, D. (1996). Weight concerns influence the development of eating disorders: A 4-year prospective study. *Journal of consulting and clinical psychology*, *64*(5), 936.

Kirby, J. N. (2017). Compassion interventions: the programmes, the evidence, and implications for research and practice. *Psychology and Psychotherapy: Theory, Research and Practice*, *90*(3), 432-455.

Kirby, J. N., Tellegen, C. L., & Steindl, S. R. (2017). A meta-analysis of compassion-based interventions: Current state of knowledge and future directions. *Behavior therapy*.

Klausner, S. (2016). *Reconceptualizing eating disorder diagnosis: A hybrid categorical- dimensional model* (Doctoral dissertation, California State University, Northridge).

Kosinski, M., Matz, S. C., Gosling, S. D., Popov, V., & Stillwell, D. (2015). Facebook as a research tool for the social sciences: Opportunities, challenges, ethical considerations, and practical guidelines. *American Psychologist*, *70*(6), 543.

Lally, P., Van Jaarsveld, C. H., Potts, H. W., & Wardle, J. (2010). How are habits formed: Modelling habit formation in the real world. *European journal of social psychology*, *40*(6), 998-1009.

Lambert, M. J. & Ogles, B. M. (2004). The efficacy and effectiveness of psychotherapy. In M.J. Lambert's (Ed.), Bergin and Garfield's Handbook of Psychotherapy and Behavior Change (pp. 139-193). New Jersey: John Wiley and Sons, Inc.

Layard, R., Banerjee, S., Bell, S., Clark, D., Fielding, S., Knapp, M., ... & Strang, J. (2012). How mental illness loses out in the NHS.

Linardon, J., Fairburn, C. G., Fitzsimmons-Craft, E. E., Wilfley, D. E., & Brennan, L. (2017). The empirical status of the third-wave behaviour therapies for the treatment of eating disorders: A systematic review. *Clinical psychology review*.

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*(3), 335-343.

Luce, K. H., & Crowther, J. H. (1999). The reliability of the eating disorder examination—Self-report questionnaire version (EDE-Q). *International Journal of Eating Disorders, 25*(3), 349-351.

Luo, X., Donnellan, M. B., Burt, S. A., & Klump, K. L. (2016). The dimensional nature of eating pathology: Evidence from a direct comparison of categorical, dimensional, and hybrid models. *Journal of abnormal psychology*, *125*(5), 715.

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.

Maraldo, T. M., Zhou, W., Dowling, J., & Vander Wal, J. S. (2016). Replication and extension of the dual pathway model of disordered eating: The role of fear of negative evaluation, suggestibility, rumination, and self-compassion. *Eating behaviors*, *23*, 187-194.

Maxwell, J. A., & Mittapalli, K. (2010). Realism as a stance for mixed methods research. *Handbook of mixed methods in social & behavioral research*, 145-168.

McClay, C. A., Waters, L., Schmidt, U., & Williams, C. (2016). A survey of attitudes towards computerized self-help for eating disorders within a community-based sample. *Behavioural and cognitive psychotherapy, 44*(1), 65-78.

McEvoy, P. & Richards, D. (2006). A critical realist rationale for using a combination of quantitative and qualitative methods. *Journal of Research Nursing, 11*(1), 66-78.

McEwan, K., & Gilbert, P. (2015). A pilot feasibility study exploring the practising of compassionate imagery exercises in a nonclinical population. *Psychology and Psychotherapy: Theory, Research and Practice.*

Medical Research Council (2008). Developing and evaluating complex interventions. UK: MRC. Available from URL: www.mrc.ac.uk/complexinterventionsguidance [accessed 03/08/2017]

Meehl, P. E. (1995). Bootstraps taxometrics: Solving the classification problem in psychopathology. *American psychologist*, *50*(4), 266.

Melioli, T., Bauer, S., Franko, D. L., Moessner, M., Ozer, F., Chabrol, H., & Rodgers, R. F. (2016). Reducing eating disorder symptoms and risk factors using the internet: A meta-analytic review. *International Journal of Eating Disorders*, *49*(1), 19-31. doi: 10.1002/eat.22477

Micali, N., Martini, M. G., Thomas, J. J., Eddy, K. T., Kothari, R., Russell, E., ... & Treasure, J. (2017). Lifetime and 12-month prevalence of eating disorders amongst women in mid-life: a population-based study of diagnoses and risk factors. *BMC medicine*, *15*(1), 12.

Miles, J., & Gilbert, P. (2005). *A handbook of research methods for clinical and health psychology.* Oxford: Oxford University Press.

Miller, S., Duncan, B. & Hubble, M. (1997). *Escape from Babel: Towards a unifying language for psychotherapy practice.* New York: Norton.

Mond, J. M., Hay, P. J., Rodgers, B., Owen, C., & Beumont, P. J. (2004). Validity of the Eating Disorder Examination Questionnaire (EDE-Q) in screening for eating disorders in community samples. *Behaviour research and therapy*, *42*(5), 551-567.

Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C. (2006). Eating Disorder Examination Questionnaire (EDE-Q): norms for young adult women. *Behaviour research and therapy*, *44*(1), 53-62.

Moran, M. D. (2003). Arguments for rejecting the sequential Bonferroni in ecological studies. *Oikos*, *100*(2), 403-405.

Morgan, D. L. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research, 8*(3), 362-376.

National Collaborating Centre for Mental Health UK. (2004). *Eating disorders: Core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders*. British Psychological Society (UK). Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK49304/

Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and identity, 2*(2), 85-101.

Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of clinical psychology*,*69*(1), 28-44.

Neff, K. D., & Vonk, R. (2009). Self-compassion versus global self-esteem: Two different ways of relating to oneself. *Journal of Personality, 77*, 23–50.

Newbold, A., Hardy, G., & Byng, R. (2013). Staff and patient experience of improving access to psychological therapy group interventions for anxiety and depression. *Journal of Mental Health*, *22*(5), 456-464.

Nylander, I. (1971). The feeling of being fat and dieting in a school population. An epidemiologic interview investigation. *Acta socio-medica Scandinavica*, *3*(1), 17-26.

O'Connor, S. R., Tully, M. A., Ryan, B., Bradley, J. M., Baxter, G. D., & McDonough, S. M. (2015). Failure of a numerical quality assessment scale to identify potential risk of bias in a systematic review: a comparison study. *BMC research notes*, *8*(1), 224.

Olatunji, B. O., Broman-Fulks, J. J., Ciesielski, B. G., Zawilinski, L. L., Shewmaker, S., & Wall, D. (2012). A taxometric investigation of the latent structure of eating disorders. *Psychiatry research*, *197*(1), 97-102.

Orsmond, G. I., & Cohn, E. S. (2015). The Distinctive Features of a Feasibility Study Objectives and Guiding Questions. *OTJR: occupation, participation and health*, *35*(3), 169-177.

Ortigo, K. M., Bradley, B., & Westen, D. (2010). An empirically based prototype diagnostic system for DSM-V and ICD-11. In T. Millon, R. F. Krueger, E. Simonsen, T. Millon, R. F. Krueger, E. Simonsen

(Eds.), *Contemporary directions in psychopathology: Scientific foundations of the DSM-V and ICD-11* (pp. 374-390). New York, NY, US: Guilford Press.

Ouwens, M. A., Van Strien, T., Van Leeuwe, J. F. J., & Van der Staak, C. P. F. (2009). The dual pathway model of overeating. Replication and extension with actual food consumption. *Appetite*, *52*(1), 234-237.

Palmeira, L., Pinto-Gouveia, J., & Cunha, M. (2017). Exploring the efficacy of an acceptance, mindfulness & compassionate-based group intervention for women struggling with their weight (Kg-Free): A randomized controlled trial. *Appetite*, *112*, 107-116.

Parkinson, S., Eatough, V., Holmes, J., Stapley, E., & Midgley, N. (2016). Framework analysis: A worked example of a study exploring young people's experiences of depression. *Qualitative research in psychology*, *13*(2), 109-129.

Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research. 34*(5), 1189-1208.

Pawson, R., & Tilley, N. (1997). Realistic evaluation. London: Sage.

Peterson, C. B., Crosby, R. D., Wonderlich, S. A., Joiner, T., Crow, S. J., Mitchell, J. E., ... & Le Grange, D. (2007). Psychometric properties of the eating disorder examination-questionnaire: Factor structure and internal consistency. *International Journal of Eating Disorders*, *40*(4), 386-389.

Pinto-Gouveia, J., Carvalho, S. A., Palmeira, L., Castilho, P., Duarte, C., Ferreira, C., ... & Costa, J. (2017). BEfree: A new psychological program for binge eating that integrates psychoeducation, mindfulness, and compassion. *Clinical Psychology & Psychotherapy*.

Plano Clark, V. L. (2010). The adoption and practice of mixed methods: U.S. trends in federally funded health-related research. *Qualitative Inquiry*, *16*(6), 428-440.

Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., ... & Duffy, S. (2006). Guidance on the conduct of narrative synthesis in systematic reviews. *A product from the ESRC methods programme Version*, *1*, b92.

Popper, K. (1959). The propensity interpretation of probability. *The British Journal for the Philosophy of Science*, *10*(37), 25-42. Retrieved from http://www.jstor.org/stable/685773

Prochaska, J.O., & DiClemente, C.C. (1992). Stages of change in the modification of problem behaviors. *In Progress in Behavior Modification* (ed. M. Hersen, R. M. Eisler and P. M. Miller), pp. 184–214. Sycamore: Sycamore, IL.

Ritchie, J. & Spencer, L., 1994. Qualitative data analysis for applied policy research. In *B.*

Bryman & R. Burgess, Analyzing qualitative data. pp. 173–194.

Robson, C. (2002) *Real world research*. (2nd Ed.) Oxford: Blackwell Publishers Ltd.

Rohde, P., Stice, E., & Marti, C. N. (2015). Development and predictive effects of eating disorder risk factors during adolescence: Implications for prevention efforts. *International Journal of Eating Disorders*, *48*(2), 187-198.

Rosenthal, R. (1991). *Meta-analytic procedures for social research* (2nd ed.). Newbury Park: Sage.

Scarano, G. M., & Kalodner-Martin, C. R. (1994). A description of the continuum of eating disorders: Implications for intervention and research. *Journal of Counseling & Development*, *72*(4), 356-361.

Schmidt, V. H. (2001). Oversocialised epistemology: A critical appraisal of constructivism. *Sociology, 35*(1), 135-157. doi:10.1017/S0038038501000086

Shenton, A, K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information 22,* 63–75.

Smink, F. R., Van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: incidence, prevalence and mortality rates. *Current psychiatry reports*, *14*(4), 406-414.

Smink, F. R., van Hoeken, D., & Hoek, H. W. (2013). Epidemiology, course, and outcome of eating disorders. *Current opinion in psychiatry*, *26*(6), 543-548.

Solomon, P., Cavanaugh, M. M., & Draine, J. (2009). *Randomized Controlled Trials: Design and Implementation for Community-Based psychosocial interventions.* Oxford: Oxford University Press.

SPSS, I. (2012). Statistical package for the social sciences. *Data analysis software packages. Version*, *21*.

Stefini, A., Salzer, S., Reich, G., Horn, H., Winkelmann, K., Bents, H., ... & Specht, N. (2017). Cognitive-Behavioral and Psychodynamic Therapy in Female Adolescents With Bulimia Nervosa: A Randomized Controlled Trial. *Journal of the American Academy of Child & Adolescent Psychiatry*, *56*(4), 329-335.

Stice, E. (2001). A prospective test of the dual-pathway model of bulimic pathology: mediating effects of dieting and negative affect. *Journal of abnormal psychology*, *110*(1), 124.

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.

Sullivan, G.M., & Feinn, R. (2012). Using Effect Size—or Why the P Value Is Not Enough. *Journal of Graduate Medical Education, 4,* 279–282.

Swallow, V., Newton, J., & Van Lottum, C. (2003). How to manage and display qualitative data using 'Framework'and Microsoft® Excel. *Journal of Clinical Nursing*, *12*(4), 610-612.

Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., ... & Goldsmith, C. H. (2010). A tutorial on pilot studies: the what, why and how. *BMC medical research methodology*, *10*(1), 1.

Thornicroft, G., & Tansella, M. (2005). Growing recognition of the importance of service user involvement in mental health service planning and evaluation. *Epidemiology and Psychiatric Sciences*, *14*(1), 1-3.

Toole, A. M., & Craighead, L. W. (2016). Brief self-compassion meditation training for body image distress in young adult women. *Body image*, *19*, 104-112.

Troop, N. A., Allan, S.,Serpell, L., & Treasure, J. L. (2008). Shame in women with a history of eating disorders. *European Eating Disorders Review, 16*(6), 480-488.

Tylka, T. L., & Subich, L. M. (1999). Exploring the construct validity of the eating disorder continuum. *Journal of Counseling Psychology*, *46*(2), 268.

Tylka, T. L., & Subich, L. M. (2003). Revisiting the latent structure of eating disorders: Taxometric analyses with nonbehavioral indicators. *Journal of Counseling Psychology*, *50*(3), 276.

Uher, R., & Rutter, M. (2012). Basing psychiatric classification on scientific foundation: Problems and prospects. *International Review Of Psychiatry*, *24*(6), 591-605.doi:10.3109/09540261.2012.721346

Vollert, B., Beintner, I., Musiat, P., Gordon, G., Görlich, D., Nacke, B., ... & Schmidt, U. (2018). Using internet-based self-help to bridge waiting time for face-to-face outpatient treatment for Bulimia Nervosa, Binge Eating Disorder and related disorders: Study protocol of a randomized controlled trial. *Internet Interventions*.

Warriner, G. K. (1991). Accuracy of self-reports to the burdensome question: survey response and nonresponse error trade-offs. *Quality and Quantity*, *25*(3), 253-269.

Westen, D. (2012). Prototype diagnosis of psychiatric syndromes. *World Psychiatry,* 11(1), 16–21.

Wildes, J. E., & Marcus, M. D. (2013). Incorporating dimensions into the classification of eating disorders: three models and their implications for research and clinical practice. *International Journal of Eating Disorders*, *46*(5), 396-403.

Wilfley, D. E., Agras, W. S., & Taylor, C. B. (2013). Reducing the burden of eating disorders: A model for population-based prevention and treatment for university and college campuses. *International Journal of Eating Disorders*, *46*(5), 529-532.

Williams, M. O., Tsivos, Z., Brown, S., Whitelock, N. S., & Sampson, M. (2017). Compassion-Focused Therapy for Bulimia Nervosa and Bulimic Presentations: A Preliminary Case Series. *Behaviour Change*, *34*(3), 199-207.

Williamson, D. A., Gleaves, D. H., & Stewart, T. M. (2005). Categorical versus dimensional models of eating disorders: An examination of the evidence. *International Journal of Eating Disorders*, *37*(1), 1-10.

Wilson, G.T. (1996). Treatment of bulimia nervosa: When CBT fails. *Behaviour Research and Therapy, 34,* 197–212.

Wise, E. A. (2004). Methods for analyzing psychotherapy outcomes: A review of clinical significance, reliable change, and recommendations for future directions. *Journal of Personality Assessment, 82*(1), 50-59.

Wonderlich, S. A., Peterson, C. B., Crosby, R. D., Smith, T. L., Klein, M. H., Mitchell, J. E., & Crow, S. J. (2014). A randomized controlled comparison of integrative cognitive-affective therapy (ICAT) and enhanced cognitive-behavioral therapy (CBT-E) for bulimia nervosa. *Psychological Medicine*, *44*(3), 543-553.

Wood, L., Byrne, R., Varese, F., & Morrison, A. P. (2016). Psychosocial interventions for internalised stigma in people with a schizophrenia-spectrum diagnosis: A systematic narrative synthesis and meta-analysis. *Schizophrenia research*, *176*(2), 291-303.

Yalom, I., & Leszcz, M. (2005). *The theory and practice of group psychotherapy* (5th ed.). New York: IUP

Yardley, L. (2000). Dilemmas in qualitative health research. Psychology & Health, *15*(2), 215-228.

Yin, R. (2014). *Case Study Research: Design and Methods* (5th ed.). USA: Sage.

Zhang, X., Kuchinke, L., Woud, M. L., Velten, J., & Margraf, J. (2017). Survey method matters: Online/offline questionnaires and face-to-face or telephone interviews differ. *Computers in Human Behavior*, *71*, 172-180.

Appendices

Appendix A: Search Terms and Results of the Search Strategy

Search no.	Search term	Results
1	"compassion focused imagery" OR "compassion focused therapy" OR “self-compass*” OR “compass*” OR “CFT-based interventions” OR “compassion focused intervention*” OR “self-compassion training”, OR “compassionate mind” OR “loving kindness meditation”	29,080
2	“body image” OR “body image dis*” OR “body dissatisf*” OR “body-image dis*” OR “body image dys*” OR “body esteem” OR “body shame” OR “eating dis*” OR “eating pathology” OR “dis* eat*” OR “eat* problem*” OR “bing* eat*” OR “compul* eat*” OR “anore*” OR “bulim*” OR “EDNOS” OR overeat* OR undereat* OR “over-eat*” OR “under-eat*” OR “eat* difficult*” OR “eating disorders pathology” OR “eat* dis* sympt*” OR “food restriction” OR “rigid dietary restraint” OR “diet” OR “ drive for thinness” OR “shape concern*” OR “weight concern*” OR “eat concern*” body dissatisfaction, body image, body, body image dysphoria, body image disturbance, body esteem, body preoccupation, self-objectification, objectified body consciousness, body surveillance, body shame, appearance, social physique anxiety, body appreciation, bodyimage avoidance, body image flexibility, interoception, interoceptive awareness, body awareness, weight concerns, eating disorder, eating pathology, disordered eating, anorexia, bulimia, binge-eating disorder, bulimic, binge, binge-eating, food restriction, restrained eating, rigid restraint, rigid dietary restraint, restrict, diet, dieting, eating, thinness, drive for thinness, exercise, compulsive exercise.	700,194
3	Effect* OR efficacy OR help* OR use* OR evaluat* OR improve* OR impact	19,807,095

4	#1 AND #2 AND #3	396
5	#1 AND #2 AND #3 Limiters: peer reviewed	206
6	#1 AND #2 AND #3 Limiters: english language	205
7	#1 AND #2 AND #3 Limiters: empirical study	79

Appendix B: Data extraction form

General	***Reference:***		
	Year of Publication:		
	Journal Title:		
	Country:		
Design	***Study Design:***		
	Recruitment Strategy:		
Sample	***E.D. Sample Size:***	***Gender:***	***Ethnicity:***
	Mean age (range/ standard deviation):		
	Sampling method:		
	Inclusion criteria:		
	Exclusion criteria:		
Intervention	***Intervention:***		
	Duration and frequency:		
	Individual/ Group intervention:		
Eating Disorder Symptoms Outcomes			
Self-compassion measures			
Feasibility and acceptability			
Findings	***Significant findings:***		
	Non-significant findings:		
Results	***Statistical Analysis: Power analysis:***		
Other points of note			

Appendix C: Advertisement to Recruit Participants

Invitation to participate in a research study looking at the feasibility of an online compassion focused intervention

Do you often find yourself worrying about or struggling with your shape, your weight or your eating? Are you critical of your body-shape, or pre-occupied about how much you eat? This study aims to explore whether a guided self-compassion meditation exercise offered online is helpful at improving self-compassion. The study is also looking at whether these self-compassion meditation exercises can help reduce worries about body-shape weight and eating. Finally, it is also looking at whether people with body-shape, weight and eating concerns, are interested in trying out self-compassion exercises and what they think of them. If you would like to become more self-compassionate by trying out a free online therapy tool, participating in this study may be a good first step. The study will explore how practicing self-compassion imagery meditation affects self-compassion, eating behaviours and mood.

I am looking for male and female adults (aged over 18) who sometimes struggle with issues around their body-shape, weight or their eating habits and who would be happy to try out practicing online self-compassion exercises for two weeks. Your English would need to be fluent enough to complete some questionnaires in English and understand English audio instructions.

If you consent to participate in the study, you will be asked to complete questionnaires before you start practicing the exercises, then a week later, and once again when you finish. A month later you will be requested to complete the same questionnaires. If you also consent to to provide feedback about the study, you will be contacted via your preferred method (skype/phone/ email) for a brief interview about your thoughts about the study. In terms of the self-help tool, you would need to practice the exercises at least 5 minutes daily for two weeks but you are free to stop the exercises at any point without any consequences. An online link will be provided to you for the self-compassion exercises and these consist of an audio aimed at guiding you to practice self-

compassion, similar to practicing meditation. Completing the questionnaires will take approximately 30 minutes.

Participants will be entered into a prize draw to win a £50 Amazon.co.uk voucher!

If you are interested in participating in the study and would like some more information on it, then please contact me at cmarki@essex.ac.uk or simply click on the link to consent and complete the questionnaires.

I look forward to hearing from you soon,

Constantina Markides
Trainee Clinical Psychologist
University of Essex

Appendix D: Participant Information Sheet

A feasibility study exploring the impact of practising compassion-focused imagery exercises online on eating disorder symptomatology in a community sample

My name is Constantina Markides. I am a Trainee Clinical Psychologist at the University of Essex. I would like to invite you to take part in my study, which is part of my Doctorate in Clinical Psychology. Before you decide whether or not you would like to participate in my research, I would like to explain why it is being carried out and what participation in the study would involve for you. Please read the following information carefully and do not hesitate to ask any questions if you would like me to clarify anything.

1. What is the purpose of the study?

The purpose of the study is to look at how feasible and helpful an online meditation exercise is at improving self-compassion for people who may struggle with their eating, weight or body-shape.

2. Who is being invited to take part?

We are looking for male and female adults, aged 18 years and above, who have difficulties with their eating habits or concerns or dissatisfaction about their body-shape and/or weight. Participants must be able to understand spoken instructions and answer questions in English and they must live in the U.K.

3. Do I have to take part?

No, your participation is completely voluntary. After you have read this information sheet, you will be asked to complete a consent form to show whether you are happy to participate in the study. There is a second consent form in the case you were also happy to be contacted for a brief interview asking you feedback from your participation in the study and intervention, to help improve this in the future. You are by no means obliged to consent to this second part of the study, even if you have consented in the first part, and you can opt out from this too if you change your mind, even if you consent to participate.

4. What will happen if I take part?

If you agree to take part in the study, you will be given a link to a consent form to sign. If you are also happy to be contacted a month after your participation in the study to provide some feedback about the study and the self-help intervention, you will be asked to sign a second consent form and to provide your preferred contact details. You will then be given further links to complete questionnaires online, which should take up to 30 minutes to complete. Please note that some questions may be distressing to answer as they ask you about your mood and concerns about your body-shape, weight and eating.

5. Can I stop taking part if I change my mind?

Should you decide to take part in the study, you have the right to end your participation and to not complete your questionnaires or the self-help exercises at any point. If you choose to withdraw from the study, you do not have to provide a reason and there will be no consequence to you deciding to leave the study. If you choose to not continue practising the self-help exercises, you will be invited to provide some anonymous written feedback online as to why that is, but you are free to not provide an answer, with no consequences.

6. Will my taking part in this study be anonymous and kept confidential?

All of the collected data will be treated as anonymous and confidential. The researcher will request an email address or a contact number to which they can send reminders to you to complete the study, and links to complete questionnaires online. This information will be kept in a password protected encrypted device, and only the researcher and supervisors will have access to it. An anonymised number will be given to your questionnaires, by asking you to combine the first two consonants of your mothers' maiden name and the last two digits of your telephone number. This will create a unique anonymised ID for you, without compromising your identity. This unique ID will allow us to match the questionnaires you complete throughout the study whilst maintaining your anonymity. By looking at your answers across time, we will be able to see if there have been any changes in your scores throughout the study. If you complete paper copies of the questionnaire, booklets will be kept in a locked drawer and any information that we enter on a computer will be password protected. Once the study is completed, all of the

information will be stored in a locked drawer at the University of Essex for 10 years, after which it will be securely destroyed. As the consent forms will be stored separately from the questionnaires, they will not be able to be linked to your questionnaires in any way.

7. What will happen to the results?

The information collected will be reported in my doctoral thesis, which will possibly be edited for publication in an academic journal. You will not be identified in any of these writings as your information will be anonymous and confidential.

8. What are the possible disadvantages or risks of taking part?

The study does include some questions about your mood as well as your eating and concerns about your weight and how your body looks and other related topics. It also asks you to start practicing self-compassion exercises, which may initially feel uncomfortable. It is therefore possible that you may feel a bit uncomfortable during completion of the questionnaires or the exercises. If you do feel distressed at any point during the study, you can withdraw from it without having to give a reason. If you do feel concerned or distressed during or after the research, you can discuss this with me or my supervisor. If you feel distressed, or worried about your mood and weight/shape and/or eating concerns you are also encouraged to contact your local General Practitioner (GP), the Samaritans or the online support forum or community support you are participating in. Please also see the 'Important Information Sheet' about accessing help.

9. What are the possible benefits of taking part?

You may find that starting to practice the self-compassion exercises allows you to feel more self-compassion gradually, and less anxiety. You may experience improvement in your mood and eating as well as a decrease in your concern about how your body looks. Your feedback about the intervention and the study will also help improve it.

10. Complaints

If you have any complaints about the study, you can contact me or my supervisor, whose contact details are below.

11. Who has reviewed the study?

The University of Essex Research Ethics Committee have reviewed and approved the study.

12. Further information and contact details

If you have any other queries about the study or if you are interested in finding out about its results, then please contact me or my supervisor using the contact details below:

Constantina Markides (Trainee Clinical Psychologist)
University of Essex, E-mail: c.marki@essex.ac.uk

Dr. Leanne Andrews (Senior Lecturer in Research Methods)
University of Essex E-mail: landre@essex.ac.uk

Dr Syd Hiskey
NHS email: syd.hiskey@nhs.net

Appendix E: Consent Form A

Please tick the box below each statement presented if you agree with the following:

- I confirm that I have read and understood the information on the Participant Information Sheet. I have had the opportunity to consider the information, ask questions (e.g. via email) and have had these questions answered satisfactorily.

  ☐

  (Please tick the box, if you agree.)
- I understand that the identifiable data provided by me will be securely stored and accessible only to Constantina Markides and her supervisors, Dr Leanne Andrews and Dr Syd Hiskey, and that confidentiality will be maintained.

  ☐

  (Please tick the box, if you agree.)
- I understand that data collected in this study might be shared as appropriate and for publication of findings, in which case data will remain completely anonymous.

  ☐

  (Please tick the box, if you agree.)
- I understand that I do not have to take part in the study and that I can change my mind at any time. I understand that my participation is voluntary and that I am free to withdraw from the project or stop practicing the exercises at any time without giving any reason and without penalty.

  ☐

  (Please tick the box, if you agree.)

- I agree to receive reminders and questionnaires by blind email at my email address, and understand that my details will be saved in a password protected device that only the researcher and her supervisors can have access to.
  Email address: _____
  (Please tick the box, and provide your preferred email address if you agree.)

  ☐

- I understand that, due to the sensitive nature of the exercises and the questions in this study, this study is not suitable to individuals who suffer from a mental health problem and/or who have recently experienced a stressful event, as participating may bring some distress. I am aware of the potential risk associated with participating. I confirm that, to the best of my knowledge, I do not have a mental health problem, and I am currently not receiving treatment for a mental health problem. I also confirm that I have not experienced a distressing event recently.

  ☐

  (Please tick the box, if you agree.)
- I confirm I am over 18 years old and that I currently reside in the UK.

  ☐

  (Please tick the box, if you agree.)
- I agree to take part in the study.

  ☐

  (Please tick the box, if you agree.)

Name: _____

Signature (if not online): _____ **Date:** _____

Consent form B for qualitative feedback

In addition, in the second part of the study, a random selection of participants will be contacted to get their views about the study and the therapy tool, if they are happy to be contacted for this purpose.

- I agree to be contacted by the researcher, Constantina Markides, a month after I have practiced the exercises for two weeks, to provide some feedback about what I thought about the study and the online meditation tool. I understand that I can still participate in the study without consenting to be interviewed a month after I practice the exercises.

  ☐

  (Please tick the box, if you agree).

  I prefer to be contacted on:

  ……

  (Please provide a telephone number, or email address, or Skype name.)

- I agree to take part in the second part of the study.

  ☐

  (Please tick the box, if you agree.)

Printed Name: _____

Signature: _____ Date: _____

Appendix F: Debriefing Sheet

Thank you for participating.

The purpose of the study was to investigate the feasibility of a self- compassion imagery exercise in reducing eating disorder tendencies, increasing self-compassion and improving mood.

A common feature of eating disorders is that people with these experiences often tend to be self-critical. It is believed that, if individuals who have difficulties with their eating and how they look learn to become more self-compassionate, then their difficulties will lessen. If practicing the exercises in this study leads to such changes it may have clinical implications for the treatment of people who have such difficulties. In particular, it may suggest that helping these people develop self-compassion may make up an important part of their treatment as it could help them become kinder towards themselves and less self-critical.

If participating in the study has caused you any distress or you believe that you are suffering from an eating disorder, then please contact your local General Practitioner (GP) or the online support forum you participate in.

Should you have any questions or concerns about the study, or you are interested in finding out more about its results, then please contact me or my supervisor:

Constantina Markides (Trainee Clinical Psychologist)
University of Essex. E-mail: cmarki@essex.ac.uk

Dr. Leanne Andrews (Senior Lecturer in Research Methods)
Dr. Syd Hiskey (Consultant Clinical Psychologist, Lecturer in Clinical Psychology).

Appendix G: Important Information Sheet

For support and advice in the UK

British Association for Counselling and Psychotherapy (BACP): 0870 443 5252

To find your local Mind psychological support service go to:

https://www.mind.org.uk/information-support/local-minds/

The Samaritans 24hr free helpline: **116 123**

Saneline 0300 304 7000 (between 4:30pm and 10:30pm).

B-eat (Beat Eating Disorders) Helpline: 0808 801 0677 b-eat.co.uk

National Centre for Eating Disorders Helpline 0845 838 2040 eating-disorders.org.uk

SEED Helpline: 01482 718130 seedeatingdisorders.org.uk

MGEDT (Men Get Eating Disorders Too) mengetedstoo.co.uk

Overeaters Anonymous Helpline: 07000 784 985 oagb.org.uk

Weight Concern weightconcern.org.uk

Weight Wise bdaweightwise.com

British Nutrition Foundation nutrition.org.uk

Recover Your Life recoveryourlife.com

YoungMinds youngminds.org.uk

In the case that you need help urgently , call 111 or go to A&E. If you feel like harming or hurting yourself or other people, call 999 and ask for the police. If you need to talk to someone, you can ring The Samaritans on **116 123** (free phone number, 24 hours) or Saneline on **0300 304 7000** (between 4:30pm and 10:30pm).

Appendix H: Verbal or Written Consent for candidates who consented to participate in the qualitative interviews.

Audio or Verbal Consent form for audio data to be transcribed by a third party

Dear participant, thank you for consenting to participate in the second part of the study, and to provide feedback with regards to your participation in the study.

The audio recording will be transcribed for research purposes by a third party, a professional transcriber. This professional will sign a confidentiality agreement and will be bound by confidentiality rules. Thus, they will not be allowed to share the information from the recordings or the transcribed material with anyone other than the researcher, Constantina Markides. The recordings and transcribed material will be saved in an encrypted password protected device. Only the researcher Constantina Markides, her supervisors, and the professional transcriber will know the password, and thus only the transcriber and researcher will have access to this material.

Please check the boxes below or verbally indicate whether you understand and agree with the below. If you are providing a verbal consent (e.g. on the phone) this will be recorded on a password protected recorder.

- I agree that my verbal audio responses in the interview are transcribed by a third party, a professional transcriber.

☐

(Please tick the box or say yes, if you agree.)

- I understand that my interview responses and the transcribed data from it will be securely stored and accessible only to Constantina Markides, her supervisors, Dr Leanne Andrews and Dr Syd Hiskey, and a professional transcribe. I understand that confidentiality will be maintained by storing the data in a password protected electronic device only known and accessible by the transcriber, the researcher and her supervisors.

☐

(Please tick the box or say 'yes', if you agree.)

- I understand that, until any point up to February 2018, I can request that my audio and/or transcribed data is deleted and not used in the research.

☐

(Please tick the box or say yes, if you agree.)

- I agree to take part in the second part of the study.

☐

(Please tick the box or say yes, if you agree.)

If you have consented to participate in the second part of the study and have provided feedback already, please indicate whether you are happy for a third party, who will be bound by confidentiality rules as above, to transcribe your interview:

- *I am happy for my interview to be transcribed by a professional transcriber. I understand that they will sign a confidentiality agreement and will not be allowed to share my information with anyone other than the researcher, Constantina Markides and her supervisors, Dr Syd Hiskey and Dr Leanne Andrews*

☐

(Please tick the box or say yes, if you agree.)

- *I am not happy for my interview to be transcribed by a professional transcriber. I*

only accept that my interview is transcribed by the lead researcher, Constantina Markides.

☐

(Please tick the box or say yes, if you agree.)

As previously, in order to anonymously link your consent with your data using your anonymous ID you previously created, and in order to ensure your information is anonymous, please indicate the last two digits of your phone number, and the first two consonants of your mother's maiden name.

The last two digits of my phone number are:

_____

The first two consonants of my mother's name are:

_____

- *I understand that these consonants and digits, as previously, will be combined to create my unique anonymised I.D. This is to ensure my anonymity and so that my responses can be matched anonymously, without using my name.*

☐

(Please tick the box or say yes if you agree).

Date: _____

Appendix I: Confidentiality Agreement for transcriber

I agree not to share information from the audio interviews or the transcribed interviews with anyone other than the researcher, Constantina Markides.

☐

(Please tick the box, if you agree.)

I agree to ensure that the information transcribed will only be saved in a password protected electronic folder, only known and accessed by myself and the researcher, Constantina Markides.

☐

(Please tick the box , if you agree.)

Name:

Signed:

Dated:

Appendix J: Email to participants with recommended timetable of practice and links

Thank you for agreeing to participate in the study titled:

'A feasibility study exploring the impact of practising compassion-focused imagery exercises online on eating disorder symptomatology in a community sample '

Below is a suggested timetable for you to try during the 14 days of this study. As you can see, you are encouraged to try out the meditations for a minimum of 5 minutes a day as research has shown that as little as 5 minutes a day can be beneficial.

However, you will see that the recordings all vary in length with some as short as 10 minutes and others up to 23 minutes. Therefore, you can start a recording on one day, pause and continue where you left off the next day.

If you are using a smart phone to hear the audio, you can navigate to different parts of the audio by tapping on the wavelengths and moving your thumb right or left to go forward or backward on the track. On your computer, in the bottom of your screen you can see the audio controls (e.g. the 'play' and 'pause' functions). If you hover your mouse on the timeline of the track you can navigate to different parts of the recording.

Please feel free to try a meditation you preferred more than others.

Recording title	**Recommended days to practice**
1. Soothing rhythm This exercise will introduce a simple breathing relaxation, and start to explain self-compassion. The online link for this is: https://soundcloud.com/compassionatemind/soothing-rhythm-breathing-1	Day 1 and 2
2. Ideal compassionate other This recording will start to guide you through starting to imagine an image that directs compassion to you. The online link for this is: https://soundcloud.com/compassionatemind/our-ideal-compassionate-other	Day 3,4,5 (Please feel free to pause and return where you left off the next day).

3. Compassionate image and community

Day 6,7,8

This audio further builds on the idea of building a compassionate image, and receiving compassion from it.

The online link for this is:

https://soundcloud.com/compassionatemind/compassionate-image-and-compassionate-community

4. Compassionate self-imagery

Day 9,10 and 11

This audio guides you through imagining the qualities of a compassionate person. From 10 minutes onwards, it directs you through 'Loving Kindness Meditation' where you imagine first giving compassion to someone, then to yourself.

The link for this is:

https://soundcloud.com/compassionatemind/compassionate-self-imagery-one

5. Addressing self-criticism

Day 12,13,14

This meditation guides you to reflect on self-criticism in a different way. It guides you to construct an image of what your self-criticism might look like, and then guides you to further imagine your compassionate image.

The audio for this is:

https://soundcloud.com/compassionatemind/addressing-self-crticism

I will be emailing you reminders with the links above every few days.

In the end of each week, I will also email you with a very short questionnaire, asking you to indicate how long you practiced each week.

Please do not hesitated to contact me, should you have any questions,

Constantina Markides

Trainee Clinical Psychologist

University of Essex

cmarki@essex.ac.uk

Appendix K: The Eating Disorder Examination Questionnaire (EDE-Q)

ID: **Date:**

EATING QUESTIONNAIRE

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all of the questions. Please only choose one answer for each question. Thank you.

Questions 1 to 12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

	On how many of the past 28 days	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1	Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2	Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3	Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4	Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5	Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6
6	Have you had a definite desire to have a totally flat stomach?	0	1	2	3	4	5	6
7	Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
8	Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
9	Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11	Have you felt fat?	0	1	2	3	4	5	6
12	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Questions 13-18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days).....

13	Over the past 28 days, how many <u>times</u> have you eaten what other people would regard as an <u>unusually large amount of food</u> (given the circumstances)?	.....
14	....On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?	.....
15	Over the past 28 days, on how many **<u>DAYS</u>** have such episodes of overeating occurred (i.e. you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?	.....
16	Over the past 28 days, how many <u>times</u> have you made yourself sick (vomit) as a means of controlling your shape or weight?	.....
17	Over the past 28 days, how many <u>times</u> have you taken laxatives as a means of controlling your shape or weight?	.....
18	Over the past 28 days, how many <u>times</u> have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat or to burn off calories?	.....

Questions 19-21: Please circle the appropriate number. <u>Please note that for these questions the term "binge eating" means</u> eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

19	Over the past 28 days, on how many days have you eaten in secret (ie, furtively)?.....Do not count episodes of binge eating	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
		0	1	2	3	4	5	6
20	On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? .....Do not count episodes of binge eating	None of the times	A few of the times	Less than half	Half of the times	More than half	Most of the time	Every time
		0	1	2	3	4	5	6
21	Over the past 28 days, how concerned have you been about other people seeing you eat? .....Do not count episodes of binge eating	Not at all		Slightly	Moderately			Markedly
		0	1	2	3	4	5	6

Questions 22-28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days)

	On how many of the past 28 days	Not at all		Slightly		Moderately		Markedly
22	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24	How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?	0	1	2	3	4	5	6
25	How dissatisfied have you been with your weight?	0	1	2	3	4	5	6
26	How dissatisfied have you been with your shape?	0	1	2	3	4	5	6
27	How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28	How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

What is your weight at present? (Please give your best estimate). .....

What is your height? (Please give your best estimate). .....

If female: Over the past three-to-four months have you missed any menstrual periods? .....

If so, how many? .....

Have you been taking the "pill"? .....

THANK YOU

Appendix L: Self-Compassion Scale (SCS)

Item
Self-Kindness Subscale
I try to be understanding and patient towards those aspects of my personality I don't like.
I'm kind to myself when I'm experiencing suffering.
When I'm going through a very hard time, I give myself the caring and tenderness I need.
I'm tolerant of my own flaws and inadequacies.
I try to be loving towards myself when I'm feeling emotional pain.
Self-Judgment Subscale
When I see aspects of myself that I don't like, I get down on myself.
When times are really difficult, I tend to be tough on myself.
I can be a bit cold-hearted towards myself when I'm experiencing suffering.
I'm disapproving and judgmental about my own flaws and inadequacies.
I'm intolerant and impatient towards those aspects of my personality I don't like.
Common Humanity Subscale
When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
I try to see my failings as part of the human condition
When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.
When things are going badly for me, I see the difficulties as part of life that everyone goes through.
Isolation Subscale
When I fail at something that's important to me I tend to feel alone in my failure.
When I think about my inadequacies it tends to make me feel more separate and cut off from the rest of the world.
When I'm feeling down I tend to feel like most other people are probably happier than I am.
When I'm really struggling I tend to feel like other people must be having an easier time of it.

Item
Mindfulness Subscale
When something upsets me I try to keep my emotions in balance.
When I'm feeling down I try to approach my feelings with curiosity and openness.
When something painful happens I try to take a balanced view of the situation.
When I fail at something important to me I try to keep things in perspective.
Over-Identification Subscale
When something upsets me I get carried away with my feelings.
When I'm feeling down I tend to obsess and fixate on everything that's wrong.
When something painful happens I tend to blow the incident out of proportion.
When I fail at something important to me I become consumed by feelings of inadequacy.

Appendix M: Fear of self-compassion (FSC)

Scale 3: Expressing kindness and compassion towards yourself

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

Appendix N: Depression, Anxiety and Stress Scale (DASS-21)

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 - NEVER

1 Applied to me to some degree, or some of the time - SOMETIMES

2 Applied to me to a considerable degree, or a good part of time - OFTEN

3 Applied to me very much, or most of the time - ALMOST ALWAYS

		N	S	O	AA	FOR OFFICE USE D	A	S
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 (eg, 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 (eg, 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 physicalexertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3			
20	I felt scared without any good reason	0	1	2	3			
21	I felt that life was meaningless	0	1	2	3			
					TOTALS			

Appendix O: Adherence

1) How frequently did you practice the imagery meditation exercises?

*More than once daily * Daily * Three times a week * Twice a week *Once a Week *Not at all

2) How long did you practice each time on average:

*Under five minutes *5-10 minutes *10-15 minutes *More than 15 minutes

3) How long did you practice each week on average (please type in average number of minutes practiced):

- Please rate from 0-10 (0 being 'not at all', and 10 being, 'very much so'):

4) How intensely did you experience the imagery meditation exercises?

1 2 3 4 5 6 7 8 9 10

5) How easy practicing the imagery exercise was for you

1 2 3 4 5 6 7 8 9 10

6) How hard practicing the imagery exercise was for you

1 2 3 4 5 6 7 8 9 10

7) How clear the imagery exercise was for you

1 2 3 4 5 6 7 8 9 10

8) How tense you felt whilst practicing the imagery

1 2 3 4 5 6 7 8 9 10

9) How moved you felt whilst practicing the imagery exercise

1 2 3 4 5 6 7 8 9 10

10) How much you resisted the imagery

1 2 3 4 5 6 7 8 9 10

11) How long did it take you to complete the measures? Did you feel this was too demanding of your time or about right?

Free text response/Any other comments

Appendix P: Eating Disorder Examination Questionnaire -Short (EDE -QS).

EATING DISORDER EXAMINATION QUESTIONNAIRE - SHORT (EDE-QS)

Name: _____ Date: _____ Weight: _____ Height: _____

ON HOW MANY OF THE PAST 7 DAYS….	**0 days**	**1-2 days**	**3-5 days**	**6-7 days**
1. Have you been deliberately trying to limit the amount of food you eat to influence your weight or shape (whether or not you have succeeded)?	0	1	2	3
2. Have you gone for long periods of time (e.g., 8 or more waking hours) without eating anything at all in order to influence your weight or shape?	0	1	2	3
3. Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?	0	1	2	3
4. Has thinking about your weight or shape made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?	0	1	2	3
5. Have you had a definite fear that you might gain weight?	0	1	2	3
6. Have you had a strong desire to lose weight?	0	1	2	3
7. Have you tried to control your weight or shape by making yourself sick (vomit) or taking laxatives?	0	1	2	3
8. Have you exercised in a driven or compulsive way as a means of controlling your weight, shape or body fat, or to burn off calories?	0	1	2	3
9. Have you had a sense of having lost control over your eating (at the time that you were eating)?	0	1	2	3
10. On how many of these days *(i.e. days on which you had a sense of having lost control over your eating*) did you eat what other people would regard as an unusually large amount of food in one go?	0	1	2	3

OVER THE PAST 7 DAYS …	**Not at all**	**Slightly**	**Moderately**	**Markedly**
11. Has your weight or shape influenced how you think about (judge) yourself as a person?	0	1	2	3
12. How dissatisfied have you been with your weight or shape?	0	1	2	3

Appendix Q: Interview Schedule

Topic guide/ Questions for participants

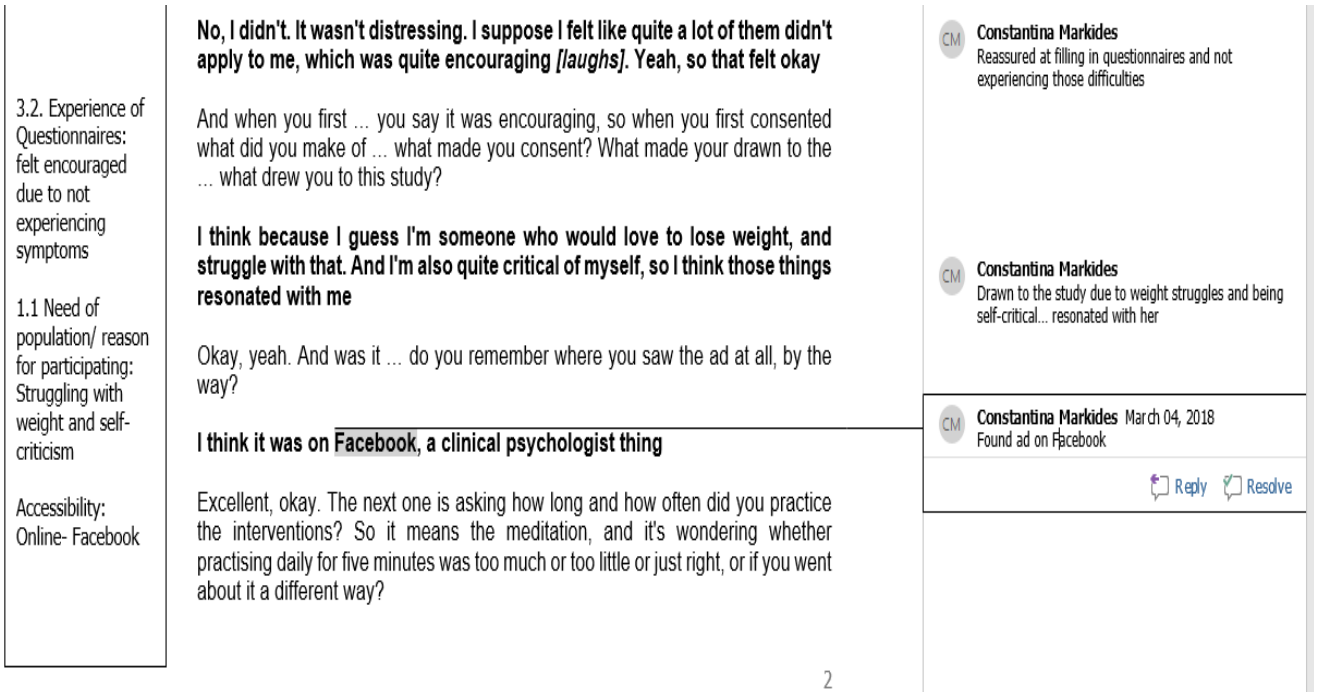
- What did you make of the questions? Were these easy to understand? If not, what was difficult to understand?
- How did you feel filling in the questionnaires? Was completing any of them distressing? Was there any benefits or negative effects to doing it, if so what?
- How long and how often did you practice the intervention? Was practicing daily for 5 minutes too much or too little or just about right for you?
- What did you make of the instructions of the intervention? Were these easy to understand, if not, what was difficult?
- Did you experience any benefits from using the intervention? If so, what were they?
- Did you experience any negative effects of the intervention? If so, what were they?
- Would you recommend this intervention to individuals with difficulties with their eating and their shape? Could you give some reasons for your answer?
- Would you recommend participation in this study in the future? Could you give some reasons for your answer?
- In what ways did you find this intervention relevant or not relevant for your concerns around your eating or shape?
- How did you feel doing the intervention? Was there any benefits or negative effects to doing it, if so what?
- Is there anything you would have liked to be improved or to be different in the intervention or the way the study was done? If so, what?
- What if any challenges did you face in participating in the study or in trying the intervention?

Appendix R (i): Example of familiarisation steps, and initial themes.

Stage 1: Familiarisation/ Listing key ideas and re-occuring themes

1. Impact of study participation: Guilt for not doing it/ encouraged due to not experiencing symptoms
2. Experience of measures: easy to understand/ straightforward/ no problems
3. Data completion/ attrition reasons: Low due to not having practiced meditations and assuming it would not be helpful
4. Impact of completion of measures: felt encouraged due to not experiencing symptoms
5. Feasibility: Unable to remember/ reflect on study participation experience
6. Need of population/ reason for participating: Struggling with weight and self-criticism
7. Accessibility: Online- Facebook
8. Adherence quantity: only first few days (four)
9. Adherence barriers: Disliked quality of recording/ stopping midway (5 minutes)/Longer that expected/ lack of time, motivation/ Preference for other meditations
10. Suggestions for improvement: Ten minutes
11. Intervention ease: Easy to understand
12. Impact of intervention: None due to non-adherence/
13. Negative impact of meditation: None
14. Appreciation of intervention: none, due to non-adherence
15. Experience of study participation: undecided about recommending study participation
16. Relevance of intervention: Not specific enough to eating
17. Experience of intervention: Irritating- bad recording
18. Recommendations for improvement: Setting expectations for time commitment, improving quality of recording

Appendix R(ii): Example of identifying themes and coding



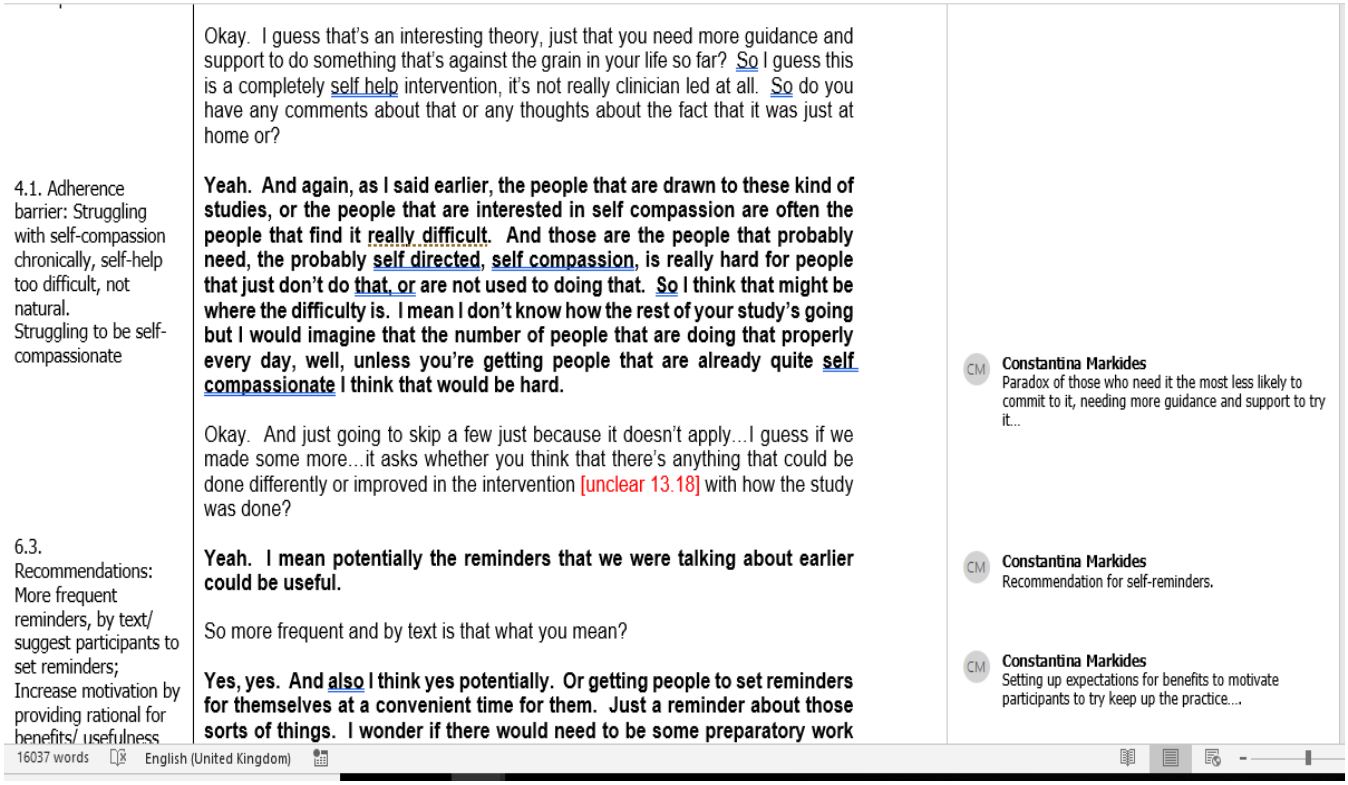
3.2. Experience of Questionnaires: felt encouraged due to not experiencing symptoms 1.1 Need of population/ reason for participating: Struggling with weight and self-criticism Accessibility: Online- Facebook	**No, I didn't. It wasn't distressing. I suppose I felt like quite a lot of them didn't apply to me, which was quite encouraging *[laughs]*. Yeah, so that felt okay** And when you first ... you say it was encouraging, so when you first consented what did you make of ... what made you consent? What made your drawn to the ... what drew you to this study? **I think because I guess I'm someone who would love to lose weight, and struggle with that. And I'm also quite critical of myself, so I think those things resonated with me** Okay, yeah. And was it ... do you remember where you saw the ad at all, by the way? **I think it was on Facebook, a clinical psychologist thing** Excellent, okay. The next one is asking how long and how often did you practice the interventions? So it means the meditation, and it's wondering whether practising daily for five minutes was too much or too little or just right, or if you went about it a different way? 2

CM **Constantina Markides**
Reassured at filling in questionnaires and not experiencing those difficulties

CM **Constantina Markides**
Drawn to the study due to weight struggles and being self-critical... resonated with her

CM **Constantina Markides** March 04, 2018
Found ad on Facebook

Reply Resolve



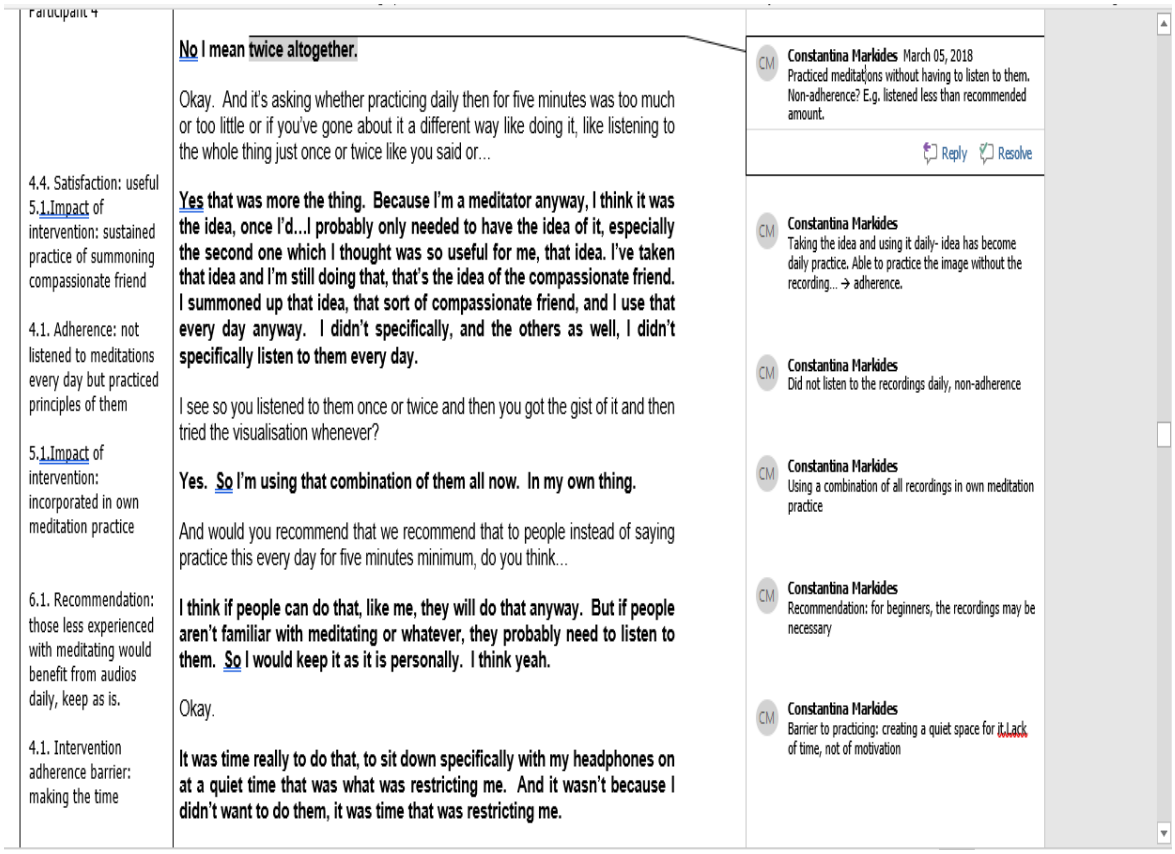
4.1. Adherence barrier: Struggling with self-compassion chronically, self-help too difficult, not natural. Struggling to be self-compassionate 6.3. Recommendations: More frequent reminders, by text/ suggest participants to set reminders; Increase motivation by providing rational for benefits/ usefulness	Okay. I guess that's an interesting theory, just that you need more guidance and support to do something that's against the grain in your life so far? So I guess this is a completely self help intervention, it's not really clinician led at all. So do you have any comments about that or any thoughts about the fact that it was just at home or? **Yeah. And again, as I said earlier, the people that are drawn to these kind of studies, or the people that are interested in self compassion are often the people that find it really difficult. And those are the people that probably need, the probably self directed, self compassion, is really hard for people that just don't do that, or are not used to doing that. So I think that might be where the difficulty is. I mean I don't know how the rest of your study's going but I would imagine that the number of people that are doing that properly every day, well, unless you're getting people that are already quite self compassionate I think that would be hard.** Okay. And just going to skip a few just because it doesn't apply...I guess if we made some more...it asks whether you think that there's anything that could be done differently or improved in the intervention [unclear 13.18] with how the study was done? **Yeah. I mean potentially the reminders that we were talking about earlier could be useful.** So more frequent and by text is that what you mean? **Yes, yes. And also I think yes potentially. Or getting people to set reminders for themselves at a convenient time for them. Just a reminder about those sorts of things. I wonder if there would need to be some preparatory work**

CM **Constantina Markides**
Paradox of those who need it the most less likely to commit to it, needing more guidance and support to try it...

CM **Constantina Markides**
Recommendation for self-reminders.

CM **Constantina Markides**
Setting up expectations for benefits to motivate participants to try keep up the practice....

16037 words English (United Kingdom)



Participant 4	
	No I mean twice altogether.
	Okay. And it's asking whether practicing daily then for five minutes was too much or too little or if you've gone about it a different way like doing it, like listening to the whole thing just once or twice like you said or...
4.4. Satisfaction: useful 5.1.Impact of intervention: sustained practice of summoning compassionate friend	**Yes that was more the thing. Because I'm a meditator anyway, I think it was the idea, once I'd...I probably only needed to have the idea of it, especially the second one which I thought was so useful for me, that idea. I've taken that idea and I'm still doing that, that's the idea of the compassionate friend. I summoned up that idea, that sort of compassionate friend, and I use that every day anyway. I didn't specifically, and the others as well, I didn't specifically listen to them every day.**
4.1. Adherence: not listened to meditations every day but practiced principles of them	I see so you listened to them once or twice and then you got the gist of it and then tried the visualisation whenever?
5.1.Impact of intervention: incorporated in own meditation practice	**Yes. So I'm using that combination of them all now. In my own thing.**
	And would you recommend that we recommend that to people instead of saying practice this every day for five minutes minimum, do you think...
6.1. Recommendation: those less experienced with meditating would benefit from audios daily, keep as is.	**I think if people can do that, like me, they will do that anyway. But if people aren't familiar with meditating or whatever, they probably need to listen to them. So I would keep it as it is personally. I think yeah.**
	Okay.
4.1. Intervention adherence barrier: making the time	**It was time really to do that, to sit down specifically with my headphones on at a quiet time that was what was restricting me. And it wasn't because I didn't want to do them, it was time that was restricting me.**

CM **Constantina Markides** March 05, 2018
Practiced meditations without having to listen to them. Non-adherence? E.g. listened less than recommended amount.
Reply Resolve

CM **Constantina Markides**
Taking the idea and using it daily- idea has become daily practice. Able to practice the image without the recording... → adherence.

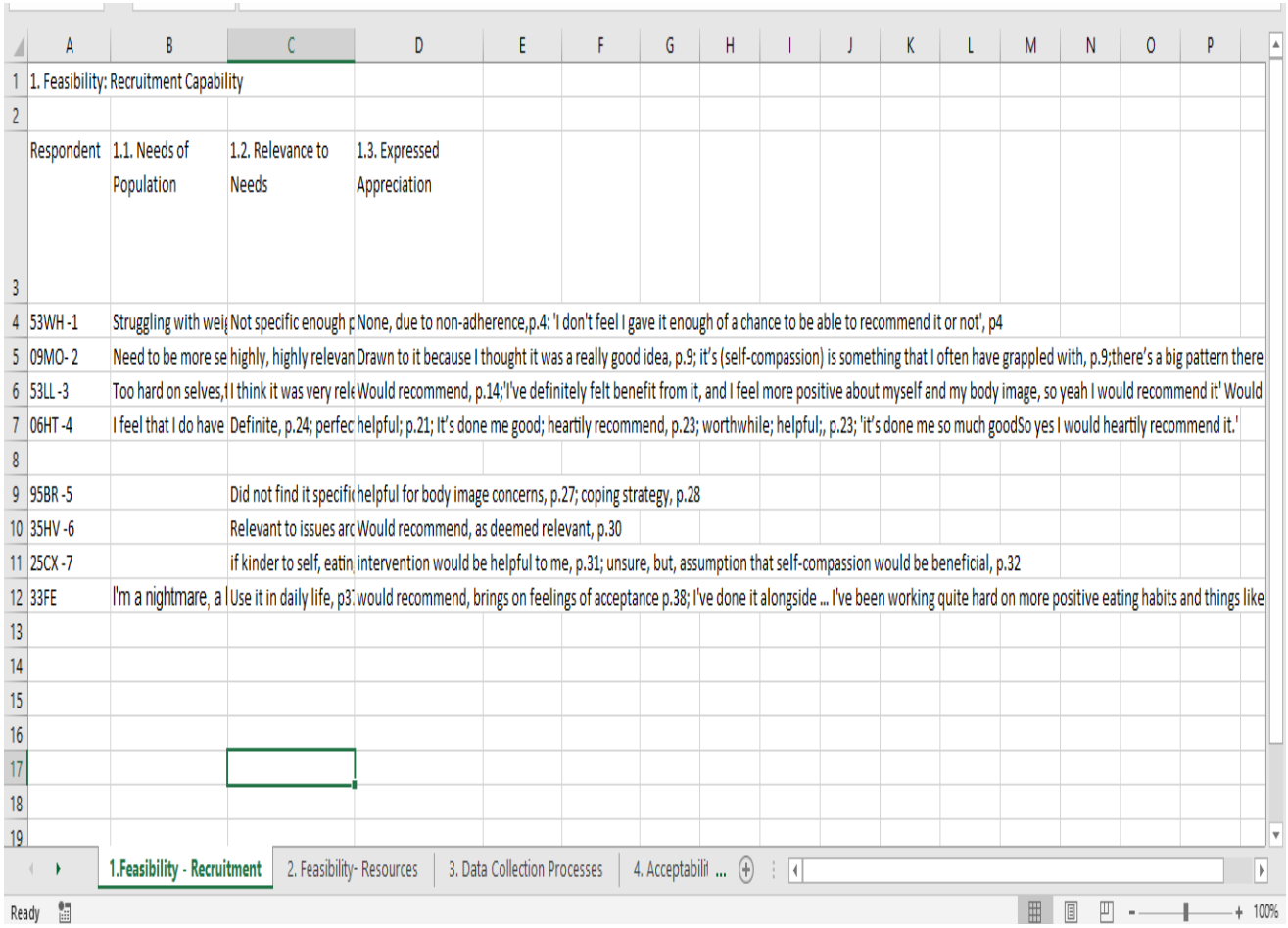
CM **Constantina Markides**
Did not listen to the recordings daily, non-adherence

CM **Constantina Markides**
Using a combination of all recordings in own meditation practice

CM **Constantina Markides**
Recommendation: for beginners, the recordings may be necessary

CM **Constantina Markides**
Barrier to practicing: creating a quiet space for it.Lack of time, not of motivation

Appendix R (iii): Example of applying frame, charting and mapping data.



	A	B	C	D
1	1. Feasibility: Recruitment Capability			
2				
3	Respondent	1.1. Needs of Population	1.2. Relevance to Needs	1.3. Expressed Appreciation
4	53WH -1	Struggling with wei	Not specific enough p	None, due to non-adherence,p.4: 'I don't feel I gave it enough of a chance to be able to recommend it or not', p4
5	09MO- 2	Need to be more se	highly, highly relevan	Drawn to it because I thought it was a really good idea, p.9; it's (self-compassion) is something that I often have grappled with, p.9;there's a big pattern there
6	53LL -3	Too hard on selves,I	I think it was very rel	Would recommend, p.14;'I've definitely felt benefit from it, and I feel more positive about myself and my body image, so yeah I would recommend it' Would
7	06HT -4	I feel that I do have	Definite, p.24; perfec	helpful; p.21; It's done me good; heartily recommend, p.23; worthwhile; helpful;, p.23; 'it's done me so much goodSo yes I would heartily recommend it.'
8				
9	95BR -5		Did not find it specifi	helpful for body image concerns, p.27; coping strategy, p.28
10	35HV -6		Relevant to issues arc	Would recommend, as deemed relevant, p.30
11	25CX -7		if kinder to self, eatin	intervention would be helpful to me, p.31; unsure, but, assumption that self-compassion would be beneficial, p.32
12	33FE	I'm a nightmare, a l	Use it in daily life, p3	would recommend, brings on feelings of acceptance p.38; I've done it alongside ... I've been working quite hard on more positive eating habits and things like
13				
14				
15				
16				
17				
18				
19				

1.Feasibility - Recruitment | 2. Feasibility- Resources | 3. Data Collection Processes | 4. Acceptabili ...

Ready 100%

Appendix S: Evidence of receipt of university ethics approval

University of Essex

6 July 2017

MISS C. MARKIDES
2 BARDSLEY CLOSE
COLCHESTER
ESSEX
CO4 5GS

Dear Constantina,

Re: Ethical Approval Application (Ref 16077)

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

Colchester Campus
Wivenhoe Park
Colchester CO4 3SQ
United Kingdom

School of Health and Social Care
T 01206 872854
E hsc@essex.ac.uk

www.essex.ac.uk
@Uni_of_Essex /uniofessex /uniofessex

From: McKee, Lisa C
Sent: 06 July 2017 14:26:27
To: Markides, Constantina
Cc: Andrews, Leanne
Subject: RE: Ethics application for clinical psychology doctoral thesis

Dear Constantina,

I'm pleased to tell you that Wayne has now approved your ethics approval application. Please find a copy of the approval letter attached. I have also put a copy of the signed form and approval letter in the post to you.

Kind regards,
Lisa

From: Markides, Constantina
Sent: 28 June 2017 11:07
To: McKee, Lisa C
Cc: Andrews, Leanne
Subject: Ethics application for clinical psychology doctoral thesis

Dear Lisa,

Please find attached my university ethics application for my Clinical Psychology Doctorate Thesis,

Thank you,

Constantina Markides
Trainee Clinical Psychologist (Year 2)
University of Essex

University of Essex

Application for Ethical Approval of Research Involving Human Participants

This application form must be completed for any research involving human participants conducted in or by the University. 'Human participants' are defined as including living human beings, human beings who have recently died (cadavers, human remains and body parts), embryos and foetuses, human tissue and bodily fluids, and human data and records (such as, but not restricted to medical, genetic, financial, personnel, criminal or administrative records and test results including scholastic achievements). Research must not commence until written approval has been received (from departmental Director of Research/Ethics Officer, Faculty Ethics Sub-Committee (ESC) or the University's Ethics Committee). This should be borne in mind when setting a start date for the project. Ethical approval cannot be granted retrospectively and failure to obtain ethical approval prior to data collection will mean that these data cannot be used.

Applications must be made on this form, and submitted electronically, to your departmental Director of Research/Ethics Officer. A signed copy of the form should also be submitted. Applications will be assessed by the Director of Research/Ethics Officer in the first instance, and may then passed to the ESC, and then to the University's Ethics Committee. A copy of your research proposal and any necessary supporting documentation (e.g. consent form, recruiting materials, etc) should also be attached to this form.

A full copy of the signed application will be retained by the department/school for 6 years following completion of the project. The signed application form cover sheet (two pages) will be sent to the Research Governance and Planning Manager in the REO as Secretary of the University's Ethics Committee.

1. Title of project:
   A feasibility study exploring the impact of practising compassion-focused imagery exercises online on eating disorder symptomatology in a community sample

2. The title of your project will be published in the minutes of the University Ethics Committee. If you object, then a reference number will be used in place of the title.
   Do you object to the title of your project being published? Yes ☐ / No x

3. This Project is: ☐ Staff Research Project ☒ Student Project

4. Principal Investigator(s) (students should also include the name of their supervisor):

Name:	Department:
Constantina Markides	Health and Human Sciences
Dr Leanne Andrews	Health and Human Sciences
Dr Syd Hiskey	Essex Partnership University Trust, NHS

5. **Proposed start date**: ~~Beginning of~~ July 2017

6. **Probable duration**: 18 months approximately

7. Will this project be externally funded? Yes ☐ / No ☒

   If Yes,

8. What is the source of the funding?

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): Markides

Name(s) in block capitals: CONSTANTINA MARKIDES

Date: 20/06/2017

Supervisor's recommendation (Student Projects only):

I have read and approved the quality of both the research proposal and this application.

Supervisor's signature: C. Markides

Outcome:

The departmental Director of Research (DoR) / Ethics Officer (EO) has reviewed this project and considers the methodological/technical aspects of the proposal to be appropriate to the tasks proposed. The DoR / EO 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 ESC ☐

This application is referred to the ESC because it does not fall under Annex B ☐

This application is referred to the ESC because it requires independent scrutiny ☐

Signature(s): W. Wilson

Name(s) in block capitals: W. WILSON

Department: S.H.S

Date: 6/07/2017

The application has been approved by the ESC ☐

The application has not been approved by the ESC ☐

The application is referred to the University Ethics Committee ☐

Signature(s):

Name(s) in block capitals:

Faculty:

Ethics Approval: Amendment Request

Name: Constantina Markides

Date: 5th of January, 2018

Signature: CMarkides

Title of project:

A feasibility study exploring the impact of practising compassion-focused imagery exercises online on eating disorder symptomatology in a community sample

Description of Amendment:

My study which has already received ethics approval by you, employs a mixed methods design, and so this involves qualitative interviews on the phone/ skype.

Due to time constrains, I would like to request that a third party transcribes the qualitative phone interviews. The third party would be requested to sign a confidentiality agreement with regards to not sharing the information. They will receive the data in a password protected encrypted electronic folder.

Verbal or written consent will be sought by participants prospectively (or retrospectively for those who have already given consent and have been interviewed), either by phone/ email/ skype (depending on their indicated preferred contact method) for their information to be transcribed by a third party bound by confidentiality rules.

Each interview lasts approximately 20 minutes, and none contain confidential identifiable data.

Reason for Amendment:

Need for external transcriber due to time constrains.

(For office use only)

The amendment has been approved ☑

The amendment has not been approved ☐

Resubmission required ☐

Signature:

Name (in block capitals): WAYNE WILSON

Department: S.H.S.C.

Date: 29/01/2018

Appendix A: Confidentiality Agreement for transcriber

I agree not to share information from the audio interviews or the transcribed interviews with anyone other than the researcher, Constantina Markides.

☐

(Please tick the box, if you agree.)

I agree to ensure that the information transcribed will only be saved in a password protected electronic folder, only known and accessed by myself and the researcher, Constantina Markides.

☐

(Please tick the box, if you agree.)

Name:

Signed:

Dated:

Ethics Approval: Amendment Request

Name: Constantina Markides

Date: 08/08/17

Signature: CMarkides

Description of Amendment:

My thesis title is: 'A feasibility study exploring the impact of practising compassion-focused imagery exercises online on eating disorder symptomatology in a community sample'

Having completed a literature review I found a shorter version of the measure I had proposed to amend to make shorter (EDE-Q) which is used over 7 day period. I would like to include this measure which has already been published instead of use one that I amend myself as this measure has already been validated. However, in order to be overly cautious and assess it further for psychometric properties I would also like to use the original measure (EDE-Q) too, in order to compare the shorter EDE-QS against this (Please see the two measures copied below). Checking psychometric measures of measures is also in line with feasibility study aims.

Finally, alongside the links with the audios to meditations, I would like to add brief summaries of each recording, and suggested time and sequence to trial these (to provide clearer instructions and information to participants). Then, in the 'adherence questions' and qualitative interviews, I would also ask participants about which recording they listened to the most/ preferred.

Additional adherence question:

Which recording did you prefer and/or practice the most?

a- Compassionate self-imagery
b- Ideal compassionate other
c- Compassionate image and community
d- Deepening the compassionate self
e- Building the compassionate self
f- Addressing self-criticism

Additional Qualitative question:

Which recording out of

a- Compassionate self-imagery
b- Ideal compassionate other
c- Compassionate image and community
d- Deepening the compassionate self
e- Building the compassionate self
f- Addressing self-criticism

did you prefer and/or practice the most? Why/ what do you think are your reasons behind this?

EATING DISORDER EXAMINATION QUESTIONNAIRE - SHORT (EDE-QS)

Name: _____ Date: _____ Weight: _____ Height: _____

ON HOW MANY OF THE PAST 7 DAYS....	**0 days**	**1-2 days**	**3-5 days**	**6-7 days**
1. Have you been deliberately trying to limit the amount of food you eat to influence your weight or shape (whether or not you have succeeded)?	0	1	2	3
2. Have you gone for long periods of time (e.g., 8 or more waking hours) without eating anything at all in order to influence your weight or shape?	0	1	2	3
3. Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?	0	1	2	3
4. Has thinking about your weight or shape made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?	0	1	2	3
5. Have you had a definite fear that you might gain weight?	0	1	2	3
6. Have you had a strong desire to lose weight?	0	1	2	3
7. Have you tried to control your weight or shape by making yourself sick (vomit) or taking laxatives?	0	1	2	3
8. Have you exercised in a driven or compulsive way as a means of controlling your weight, shape or body fat, or to burn off calories?	0	1	2	3
9. Have you had a sense of having lost control over your eating (at the time that you were eating)?	0	1	2	3
10. On how many of these days *(i.e. days on which you had a sense of having lost control over your*	0	1	2	3

eating) did you eat what other people would regard as an unusually large amount of food in one go?

OVER THE PAST 7 DAYS ...	**Not at all**	**Slightly**	**Moderately**	**Markedly**
11. Has your weight or shape influenced how you think about (judge) yourself as a person?	0	1	2	3
12. How dissatisfied have you been with your weight or shape?	0	1	2	3

Derived from the EDE-Q, © Fairburn and Beglin, 2008

Reference: Gideon, N., Hawkes, N., Mond, J., Saunders, R., Tchanturia, K., & Serpell, L. (2016). Development and psychometric validation of the EDE-QS, a 12 item short form of the eating disorder examination questionnaire (EDE-Q). PloS one, 11(5), e0152744.

EDE-Q (Original version): **The Eating Disorder Examination Questionnaire (EDE-Q)**

ID: **Date:**

EATING QUESTIONNAIRE

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all of the questions. Please only choose one answer for each question. Thank you.

Questions 1 to 12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

	On how many of the past 28 days	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1	Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2	Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3	Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4	Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5	Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6
6	Have you had a definite desire to have a totally flat stomach?	0	1	2	3	4	5	6
7	Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
8	Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
9	Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11	Have you felt fat?	0	1	2	3	4	5	6
12	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Questions 13-18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days).....

13	Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?	.....
14	....On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?	.....
15	Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e. you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?	.....
16	Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?	.....
17	Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?	.....
18	Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat or to burn off calories?	.....

Questions 19-21: Please circle the appropriate number. Please note that for these questions the term "binge eating" means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

19	Over the past 28 days, on how many days have you eaten in secret (ie, furtively)?.....Do not count episodes of binge eating	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
		0	1	2	3	4	5	6
20	On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? .....Do not count episodes of binge eating	None of the times	A few of the times	Less than half	Half of the times	More than half	Most of the time	Every time
		0	1	2	3	4	5	6
21	Over the past 28 days, how concerned have you been about other people seeing you eat? .....Do not count episodes of binge eating	Not at all		Slightly		Moderately		Markedly
		0	1	2	3	4	5	6

Questions 22-28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days)

	On how many of the past 28 days	Not at all		Slightly		Moderately		Markedly
22	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24	How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?	0	1	2	3	4	5	6
25	How dissatisfied have you been with your weight?	0	1	2	3	4	5	6
26	How dissatisfied have you been with your shape?	0	1	2	3	4	5	6
27	How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28	How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

What is your weight at present? (Please give your best estimate). .....

What is your height? (Please give your best estimate). .....

If female: Over the past three-to-four months have you missed any menstrual periods? .....

If so, how many? .....

Have you been taking the "pill"? .....

THANK YOU

EDE-Q reproduced with permission. Fairburn and Beglin (2008). In Fairburn, C. G. (2008). *Cognitive Behavior Therapy and Eating Disorders*. Guilford Press, New York.

As above, in my more recent literature review I found an already amended measure of EDE-Q (EDE-QS) which has received some psychometric evaluations and thus would be preferable to my nonvalidated shortened version as initially proposed. However, as it is still a new version, I would also like to include the longer version to further investigate this shorter EDE-Q psychometric properties. Psychometric evaluations for measures are specifically recommended for feasibility studies such as mine, as a way of ensuring measures are relevant and appropriate.

The reason for amendment for adding the question to the adherence measure and the qualitative interview about which recording participants preferred the most is to gain feedback on which audio recordings were found most useful/helpful/easy to follow/transformative etc as per feasibility study aims, aiming to explore acceptability of the intervention.

(For office use only)

The amendment has been approved ☑

The amendment has not been approved ☐

Resubmission required ☐

Signature:

Name (in block capitals): W. Wilson

Department: S.H.S.C

Date: 11/8/2017

Appendix T: Anonymous ID generation questions.

- My mothers' first two consonants of her maiden name are:

(Please input the first two consonants of your mothers' maiden name in the box. For example, for the name 'Markides' these would be 'MR').

The last two numbers of my phone number are:

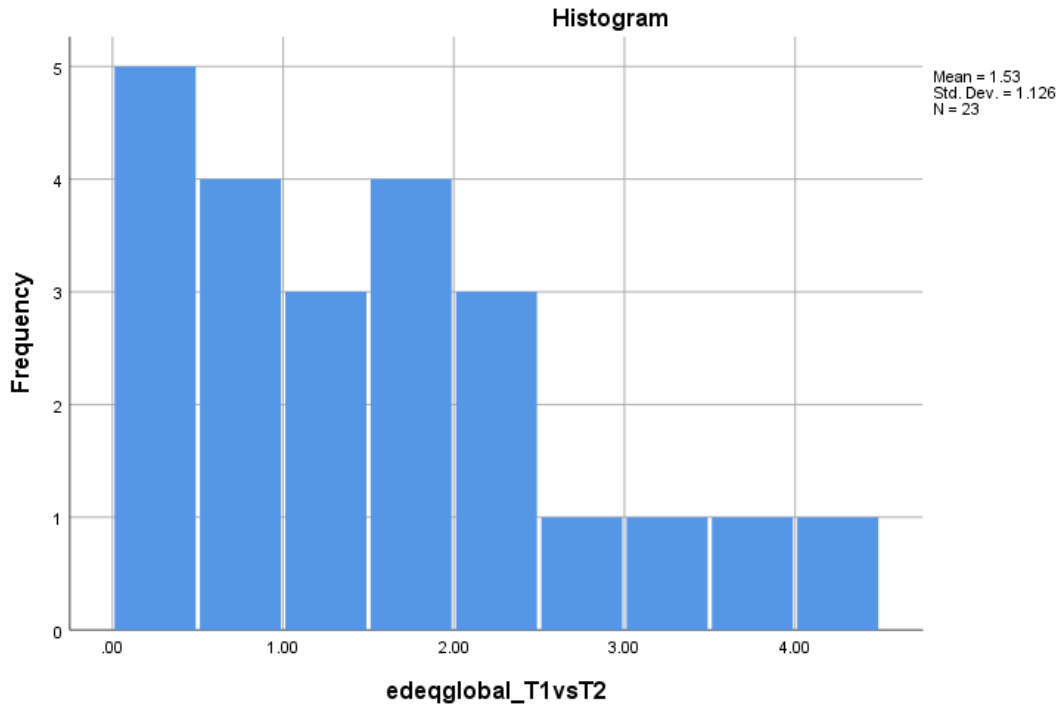
(Please put the last two numbers of your phone number in the box).

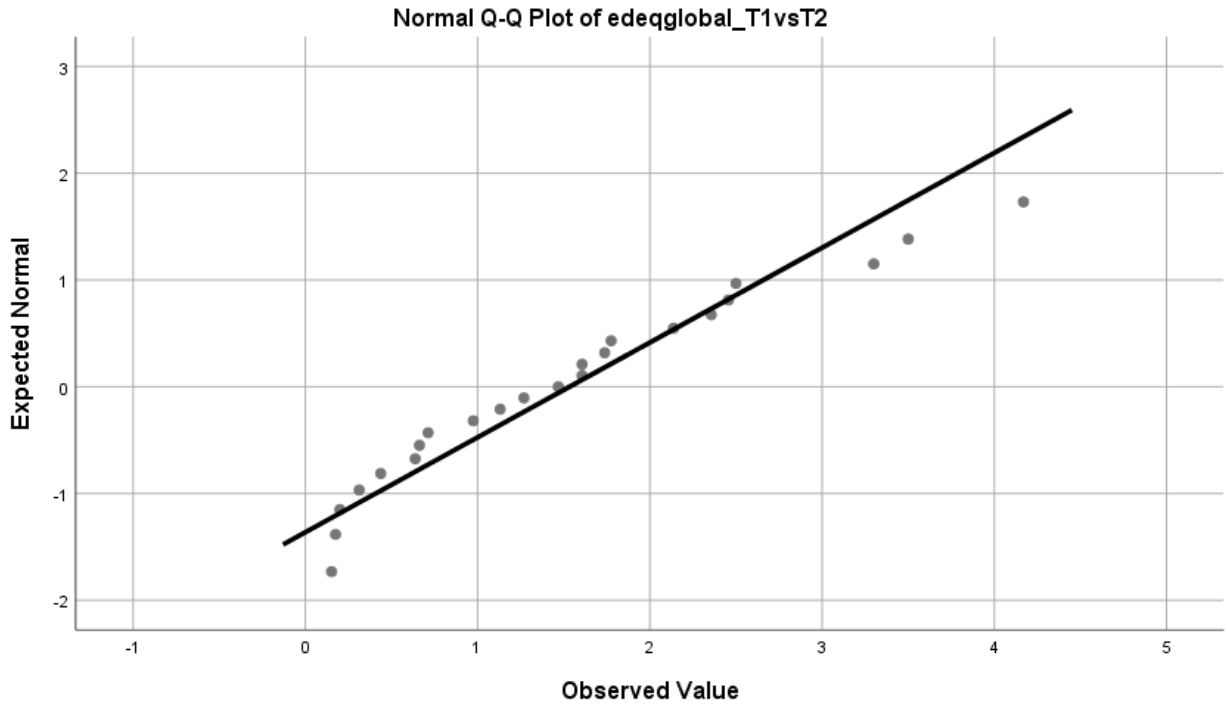
- *I understand that these consonants and digits will be combined to create a unique anonymised I.D. This is so that my responses to the questionnaires can be matched anonymously, without using my name, across the two times I complete them).*

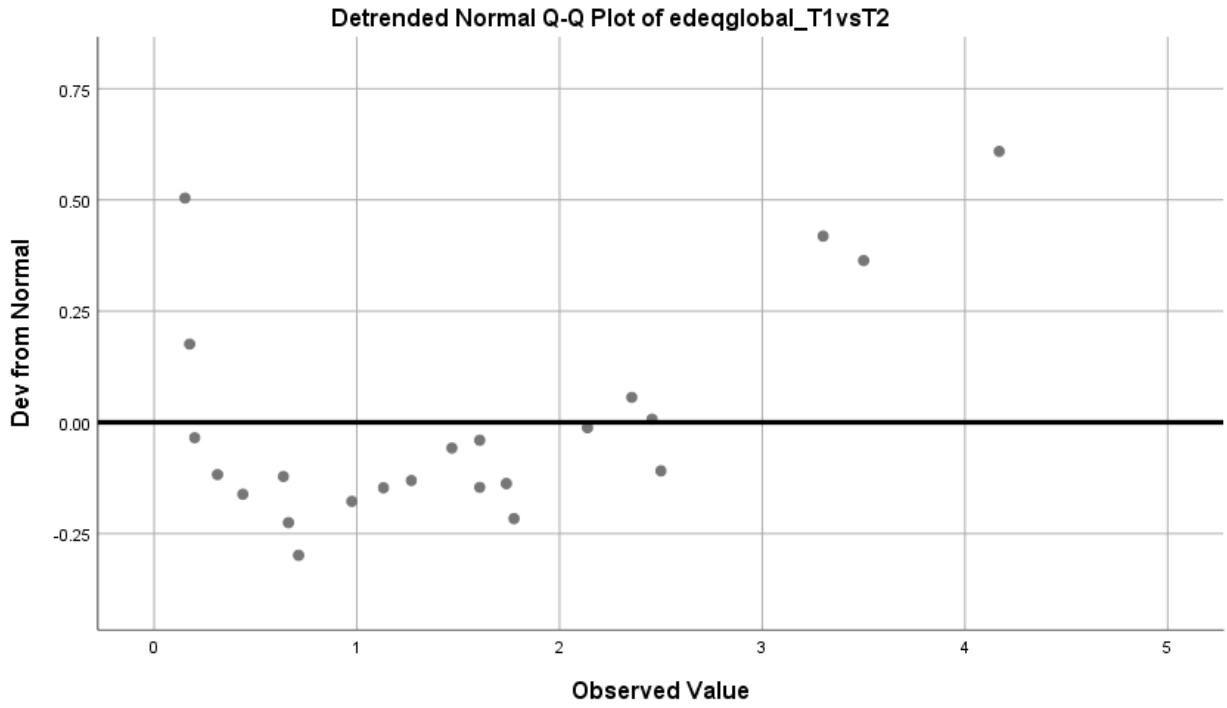
(Please tick the box if you agree).

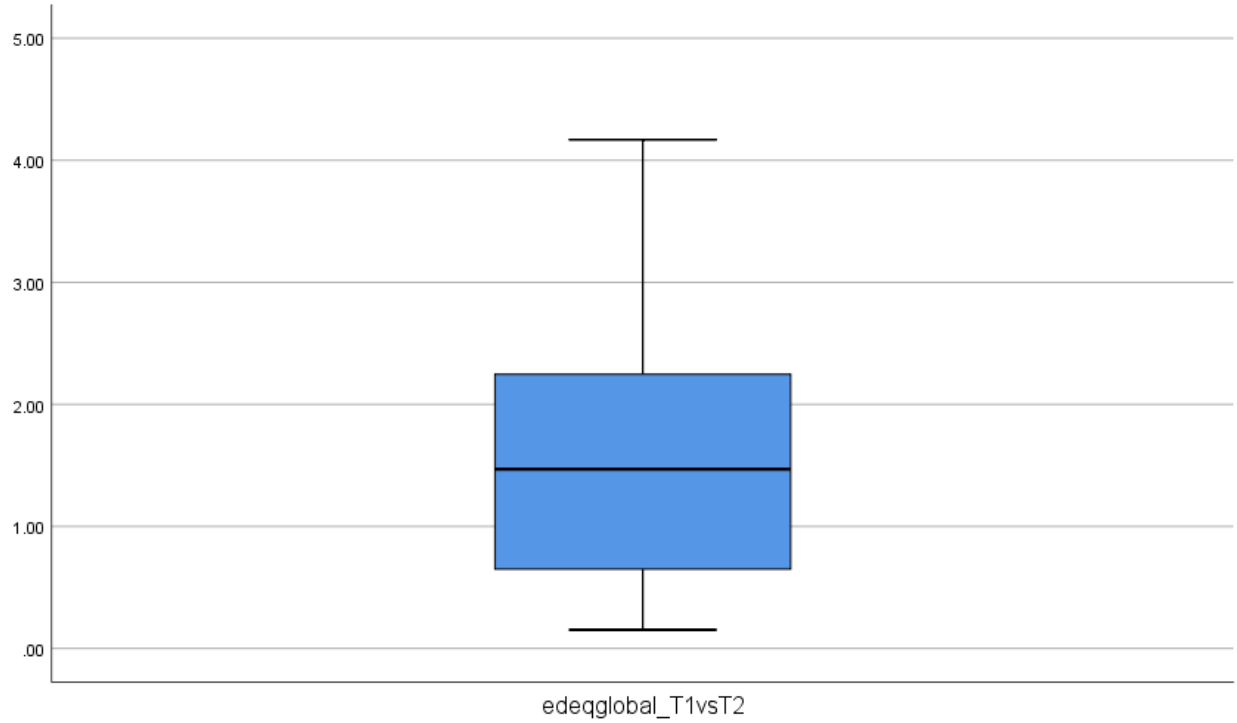
Appendix U

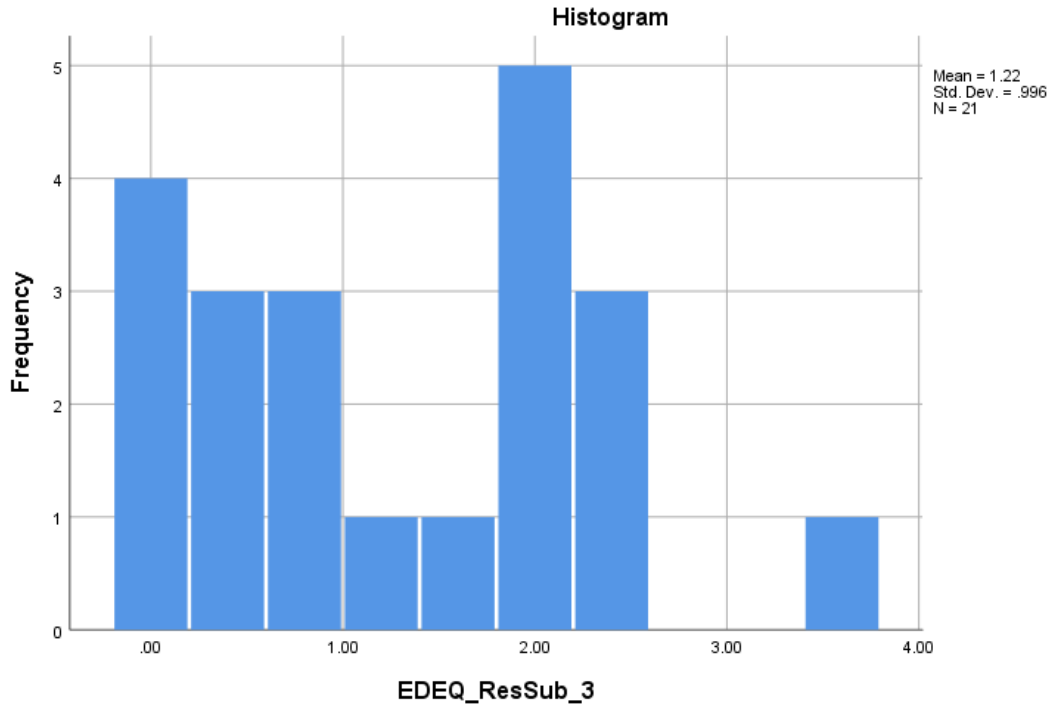
Inspection of violations of normality






Detrended Normal Q-Q Plot of edeqglobal_T1vsT2
Dev from Normal
0.75
0.50
0.25
0.00
-0.25
0
1
2
3
4
5
Observed Value


5.00
4.00
3.00
2.00
1.00
.00
edeqglobal_T1vsT2



Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
EDEQ_ResSub_3	.161	21	.159	.906	21	.045
EDEQ_ShpCnSub_3	.089	21	.200*	.958	21	.476
EDEQ_EatCnSub_3	.201	21	.026	.847	21	.004
EDEQ1_WECONSUB_3	.138	21	.200*	.958	21	.471
EDEQ_globalL_3	.117	21	.200*	.954	21	.401
SJ_SUBSCALE_3	.194	21	.037	.943	21	.245
ISO_SUBSCALE_3	.121	21	.200*	.969	21	.707
OI_SUBSCALE_3	.083	21	.200*	.975	21	.833
SK_SUBSCALE_3	.176	21	.087	.928	21	.128
CH_SUBSCALE_3	.139	21	.200*	.944	21	.262
MIND_SUBSCALE_3	.121	21	.200*	.964	21	.604
SCS_TOTAL_3	.104	21	.200*	.984	21	.967
FSC_TOTAL_3	.193	21	.040	.913	21	.064
DEPRESSION_SUB_3	.177	21	.085	.868	21	.009
STRESS_SUB_3	.211	21	.016	.872	21	.011
ANXIETY_SUB_3	.271	21	.000	.750	21	.000

STRESS_SUBNOTMULTIPLIED_3	.211	21	.016	.872	21	.011
DEPRESSION_SUBNOTMULTIPLIED_3	.177	21	.085	.868	21	.009
ANXIETY_SUBNOTMULTIPLIED_3	.271	21	.000	.750	21	.000
EDEQS_TOTAL_3	.134	21	.200*	.966	21	.642
EDEQS_MEANTOTAL_3	.134	21	.200*	.966	21	.642

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

			Statistic	Std. Error
EDEQ_ResSub_3	Mean		1.2190	.21730
	95% Confidence Interval for Mean	Lower Bound	.7658	
		Upper Bound	1.6723	
	5% Trimmed Mean		1.1582	
	Median		1.2000	
	Variance		.992	
	Std. Deviation		.99580	
	Minimum		.00	
	Maximum		3.60	
	Range		3.60	
	Interquartile Range		1.60	
	Skewness		.475	.501
	Kurtosis		-.313	.972
EDEQ_ShpCnSub_3	Mean		3.0247	.34596
	95% Confidence Interval for Mean	Lower Bound	2.3030	
		Upper Bound	3.7463	
	5% Trimmed Mean		3.0674	
	Median		3.2500	
	Variance		2.513	
	Std. Deviation		1.58538	
	Minimum		.00	
	Maximum		5.25	
	Range		5.25	
	Interquartile Range		2.75	
	Skewness		-.202	.501
	Kurtosis		-.960	.972

EDEQ_EatCnSub_3	Mean		1.7024	.33260
	95% Confidence Interval for Mean	Lower Bound	1.0086	
		Upper Bound	2.3962	
	5% Trimmed Mean		1.6048	
	Median		1.0000	
	Variance		2.323	
	Std. Deviation		1.52418	
	Minimum		.20	
	Maximum		5.00	
	Range		4.80	
	Interquartile Range		2.60	
	Skewness		.930	.501
	Kurtosis		-.493	.972
EDEQ1_WECONSUB_3	Mean		2.5929	.37376
	95% Confidence Interval for Mean	Lower Bound	1.8132	
		Upper Bound	3.3725	
	5% Trimmed Mean		2.5497	
	Median		2.6000	
	Variance		2.934	
	Std. Deviation		1.71277	
	Minimum		.00	
	Maximum		6.00	
	Range		6.00	
	Interquartile Range		2.80	
	Skewness		.275	.501
	Kurtosis		-.844	.972
EDEQ_globalL_3	Mean		2.1347	.27680
	95% Confidence Interval for Mean	Lower Bound	1.5574	
		Upper Bound	2.7121	
	5% Trimmed Mean		2.1320	
	Median		2.0375	
	Variance		1.609	
	Std. Deviation		1.26844	
	Minimum		.05	
	Maximum		4.26	
	Range		4.21	
	Interquartile Range		2.29	
	Skewness		.162	.501
	Kurtosis		-1.182	.972
SJ_SUBSCALE_3	Mean		2.6667	.20900

	95% Confidence Interval for Mean	Lower Bound	2.2307	
		Upper Bound	3.1026	
	5% Trimmed Mean		2.6630	
	Median		2.4000	
	Variance		.917	
	Std. Deviation		.95778	
	Minimum		1.00	
	Maximum		4.40	
	Range		3.40	
	Interquartile Range		1.30	
	Skewness		.195	.501
	Kurtosis		-.602	.972
ISO_SUBSCALE_3	Mean		2.6667	.19771
	95% Confidence Interval for Mean	Lower Bound	2.2543	
		Upper Bound	3.0791	
	5% Trimmed Mean		2.6713	
	Median		2.5000	
	Variance		.821	
	Std. Deviation		.90600	
	Minimum		1.00	
	Maximum		4.25	
	Range		3.25	
	Interquartile Range		1.50	
	Skewness		-.044	.501
	Kurtosis		-.810	.972
OI_SUBSCALE_3	Mean		2.6310	.20457
	95% Confidence Interval for Mean	Lower Bound	2.2042	
		Upper Bound	3.0577	
	5% Trimmed Mean		2.6190	
	Median		2.5000	
	Variance		.879	
	Std. Deviation		.93748	
	Minimum		1.00	
	Maximum		4.50	
	Range		3.50	
	Interquartile Range		1.38	
	Skewness		.055	.501
	Kurtosis		-.602	.972
SK_SUBSCALE_3	Mean		2.8667	.19140
		Lower Bound	2.4674	

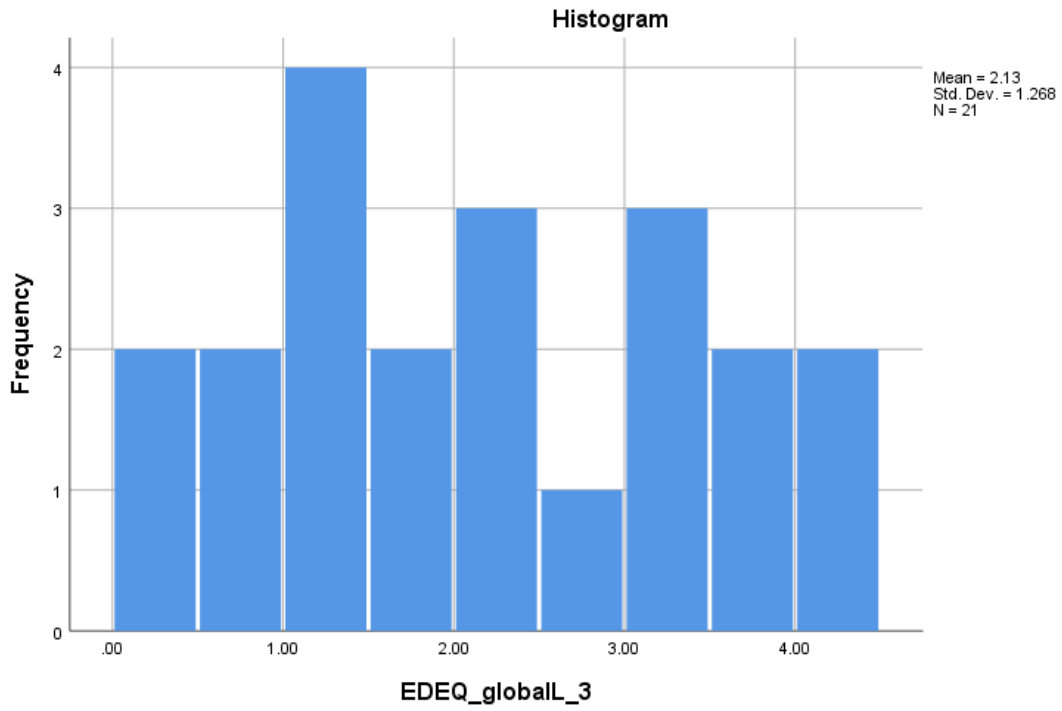
	95% Confidence Interval for Mean	Upper Bound	3.2659	
	5% Trimmed Mean		2.8545	
	Median		3.0000	
	Variance		.769	
	Std. Deviation		.87712	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		.80	
	Skewness		-.161	.501
	Kurtosis		1.461	.972
CH_SUBSCALE_3	Mean		2.9643	.21498
	95% Confidence Interval for Mean	Lower Bound	2.5158	
		Upper Bound	3.4127	
	5% Trimmed Mean		2.9729	
	Median		2.7500	
	Variance		.971	
	Std. Deviation		.98516	
	Minimum		1.25	
	Maximum		4.50	
	Range		3.25	
	Interquartile Range		1.75	
	Skewness		.177	.501
	Kurtosis		-1.092	.972
MIND_SUBSCALE_3	Mean		3.1310	.19792
	95% Confidence Interval for Mean	Lower Bound	2.7181	
		Upper Bound	3.5438	
	5% Trimmed Mean		3.1323	
	Median		3.2500	
	Variance		.823	
	Std. Deviation		.90698	
	Minimum		1.25	
	Maximum		5.00	
	Range		3.75	
	Interquartile Range		1.50	
	Skewness		-.122	.501
	Kurtosis		-.203	.972
SCS_TOTAL_3	Mean		2.8210	.16594
		Lower Bound	2.4749	

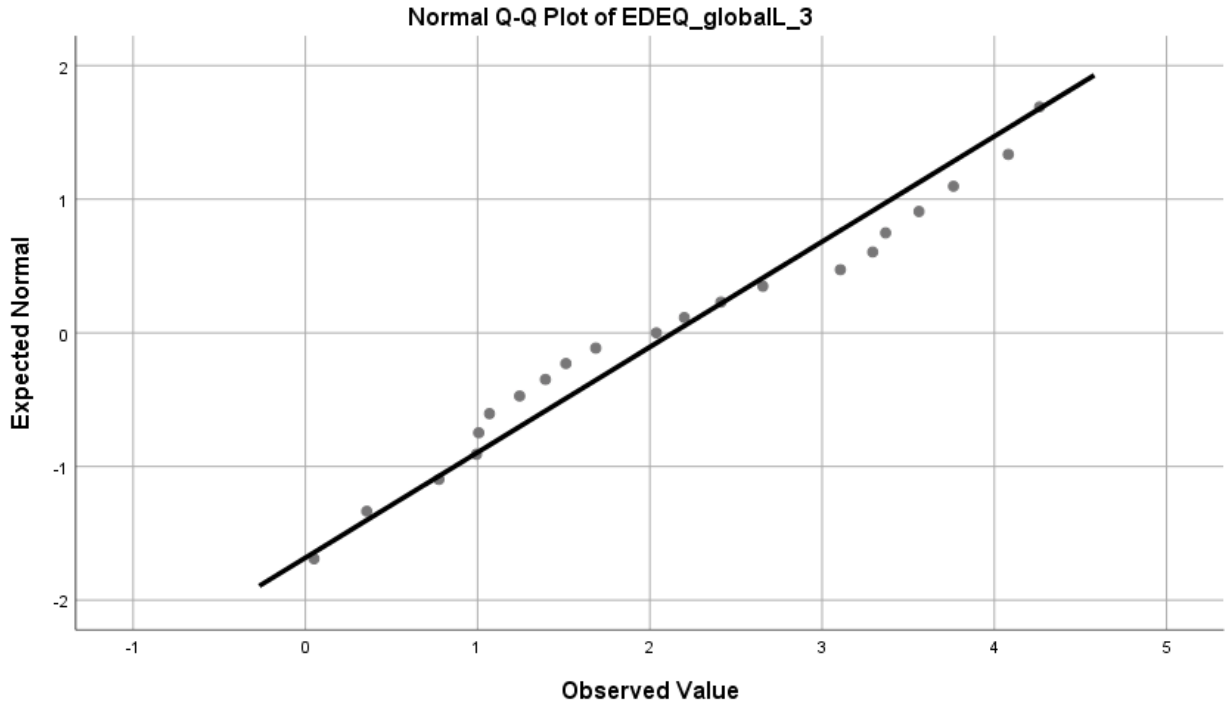
	95% Confidence Interval for Mean	Upper Bound	3.1672	
	5% Trimmed Mean		2.8341	
	Median		2.8500	
	Variance		.578	
	Std. Deviation		.76042	
	Minimum		1.08	
	Maximum		4.33	
	Range		3.24	
	Interquartile Range		.98	
	Skewness		-.356	.501
	Kurtosis		.492	.972
FSC_TOTAL_3	Mean		13.0476	2.14972
	95% Confidence Interval for Mean	Lower Bound	8.5634	
		Upper Bound	17.5319	
	5% Trimmed Mean		12.7222	
	Median		10.0000	
	Variance		97.048	
	Std. Deviation		9.85127	
	Minimum		1.00	
	Maximum		31.00	
	Range		30.00	
	Interquartile Range		16.50	
	Skewness		.435	.501
	Kurtosis		-1.117	.972
DEPRESSION_SUB_3	Mean		11.3333	2.46242
	95% Confidence Interval for Mean	Lower Bound	6.1968	
		Upper Bound	16.4698	
	5% Trimmed Mean		10.3069	
	Median		10.0000	
	Variance		127.333	
	Std. Deviation		11.28421	
	Minimum		.00	
	Maximum		42.00	
	Range		42.00	
	Interquartile Range		19.00	
	Skewness		.956	.501
	Kurtosis		.913	.972
STRESS_SUB_3	Mean		15.0476	2.57319
		Lower Bound	9.6800	

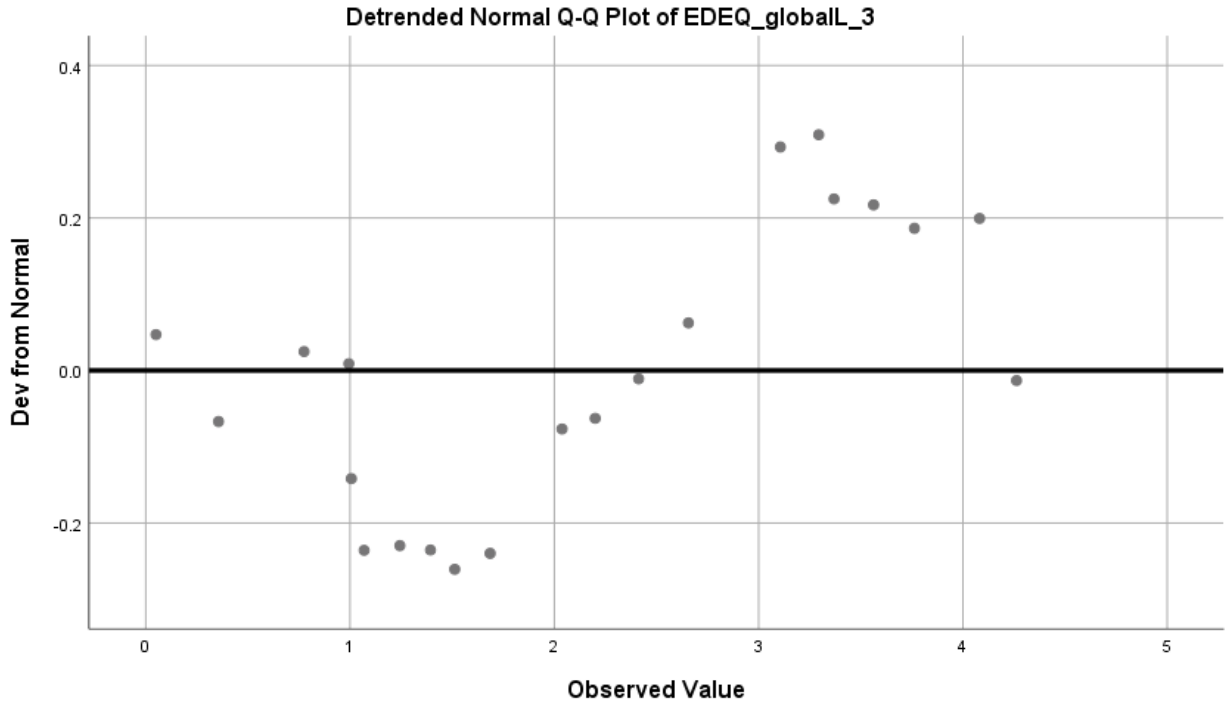
	95% Confidence Interval for Mean	Upper Bound	20.4152	
	5% Trimmed Mean		14.3862	
	Median		14.0000	
	Variance		139.048	
	Std. Deviation		11.79185	
	Minimum		.00	
	Maximum		42.00	
	Range		42.00	
	Interquartile Range		12.00	
	Skewness		1.143	.501
	Kurtosis		.840	.972
ANXIETY_SUB_3	Mean		6.1905	1.80425
	95% Confidence Interval for Mean	Lower Bound	2.4269	
		Upper Bound	9.9541	
	5% Trimmed Mean		5.3386	
	Median		2.0000	
	Variance		68.362	
	Std. Deviation		8.26813	
	Minimum		.00	
	Maximum		28.00	
	Range		28.00	
	Interquartile Range		9.00	
	Skewness		1.544	.501
	Kurtosis		1.384	.972
STRESS_SUBNOTMULTIPLIED_3	Mean		7.5238	1.28660
	95% Confidence Interval for Mean	Lower Bound	4.8400	
		Upper Bound	10.2076	
	5% Trimmed Mean		7.1931	
	Median		7.0000	
	Variance		34.762	
	Std. Deviation		5.89592	
	Minimum		.00	
	Maximum		21.00	
	Range		21.00	
	Interquartile Range		6.00	
	Skewness		1.143	.501
	Kurtosis		.840	.972
DEPRESSION_SUBNOTMULTIPLIED_3	Mean		5.6667	1.23121
		Lower Bound	3.0984	

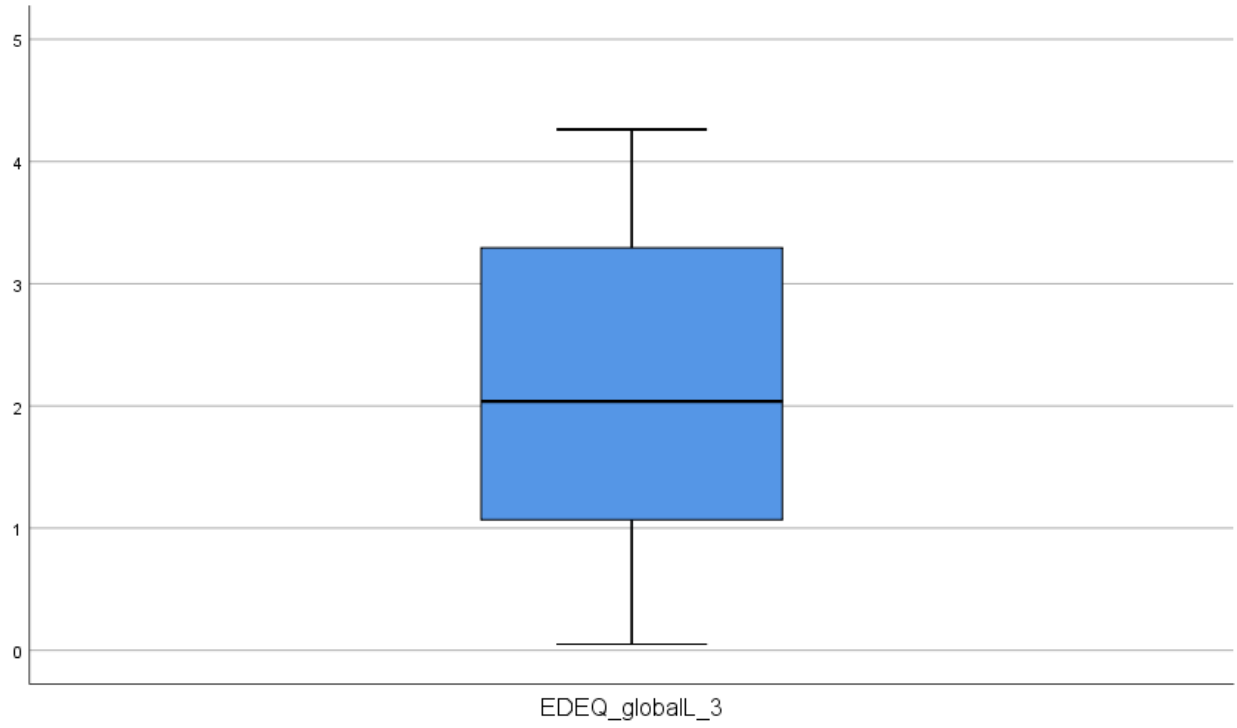
	95% Confidence Interval for Mean	Upper Bound	8.2349	
	5% Trimmed Mean		5.1534	
	Median		5.0000	
	Variance		31.833	
	Std. Deviation		5.64210	
	Minimum		.00	
	Maximum		21.00	
	Range		21.00	
	Interquartile Range		9.50	
	Skewness		.956	.501
	Kurtosis		.913	.972
ANXIETY_SUBNOTMULTIPLIED_3	Mean		3.0952	.90213
	95% Confidence Interval for Mean	Lower Bound	1.2134	
		Upper Bound	4.9770	
	5% Trimmed Mean		2.6693	
	Median		1.0000	
	Variance		17.090	
	Std. Deviation		4.13406	
	Minimum		.00	
	Maximum		14.00	
	Range		14.00	
	Interquartile Range		4.50	
	Skewness		1.544	.501
	Kurtosis		1.384	.972
EDEQS_TOTAL_3	Mean		11.0000	1.39215
	95% Confidence Interval for Mean	Lower Bound	8.0960	
		Upper Bound	13.9040	
	5% Trimmed Mean		10.9418	
	Median		10.0000	
	Variance		40.700	
	Std. Deviation		6.37966	
	Minimum		.00	
	Maximum		23.00	
	Range		23.00	
	Interquartile Range		11.50	
	Skewness		.267	.501
	Kurtosis		-.805	.972
EDEQS_MEANTOTAL_3	Mean		.9167	.11601
		Lower Bound	.6747	

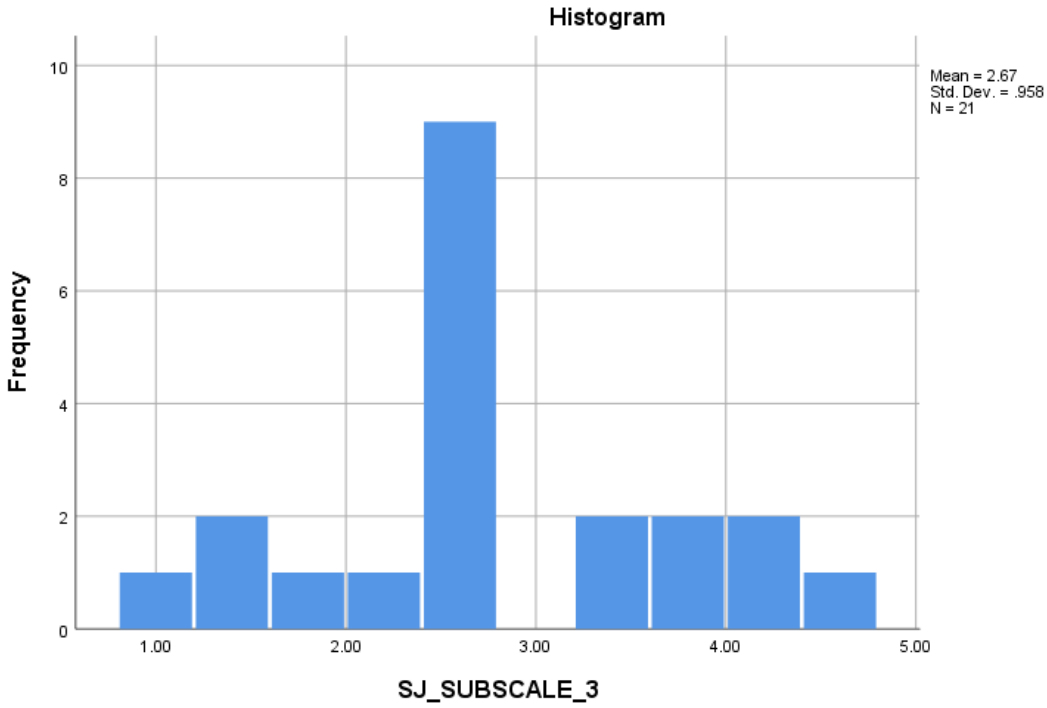
	95% Confidence Interval for Mean	Upper Bound	1.1587	
	5% Trimmed Mean		.9118	
	Median		.8333	
	Variance		.283	
	Std. Deviation		.53164	
	Minimum		.00	
	Maximum		1.92	
	Range		1.92	
	Interquartile Range		.96	
	Skewness		.267	.501
	Kurtosis		-.805	.972

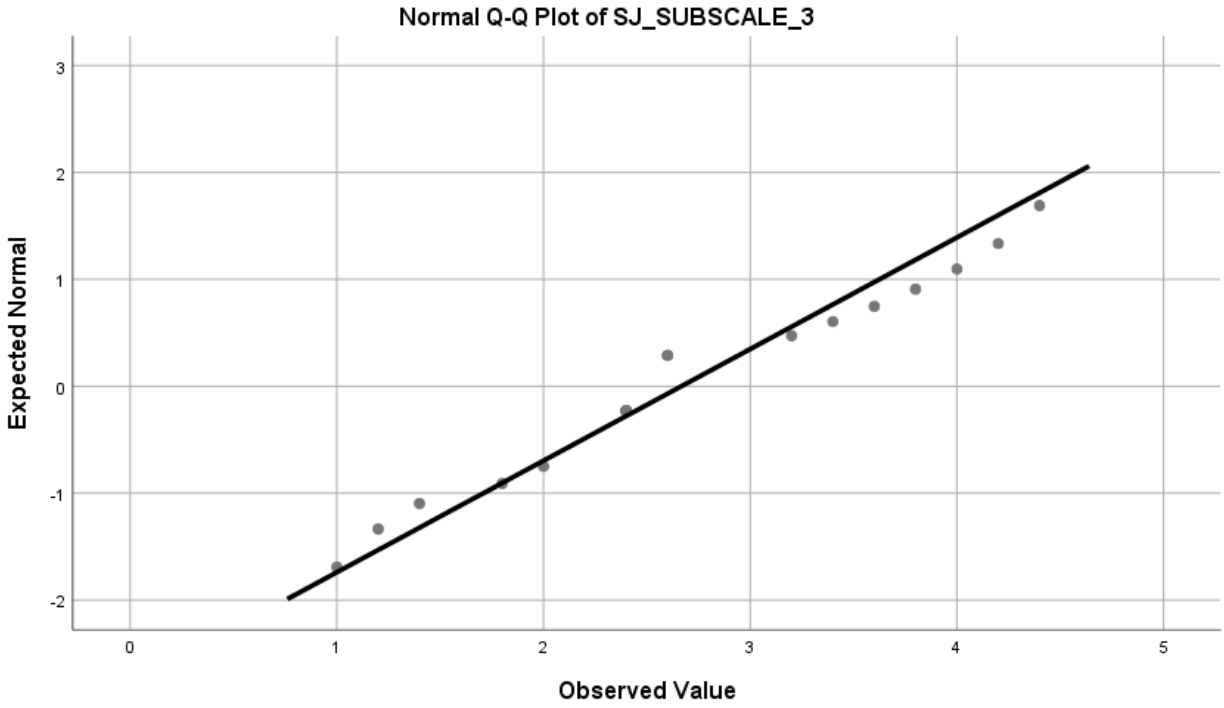


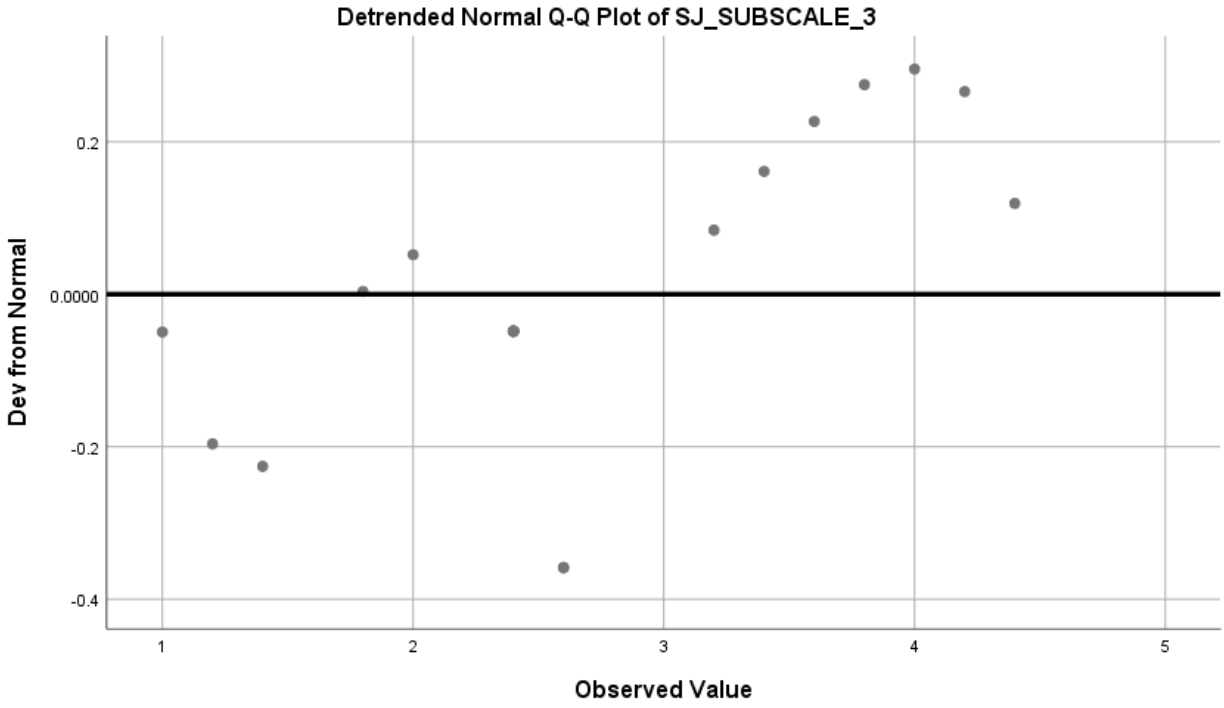

Normal Q-Q Plot of EDEQ_globalL_3
Expected Normal
Observed Value
2
1
0
-1
-2
-1
0
1
2
3
4
5

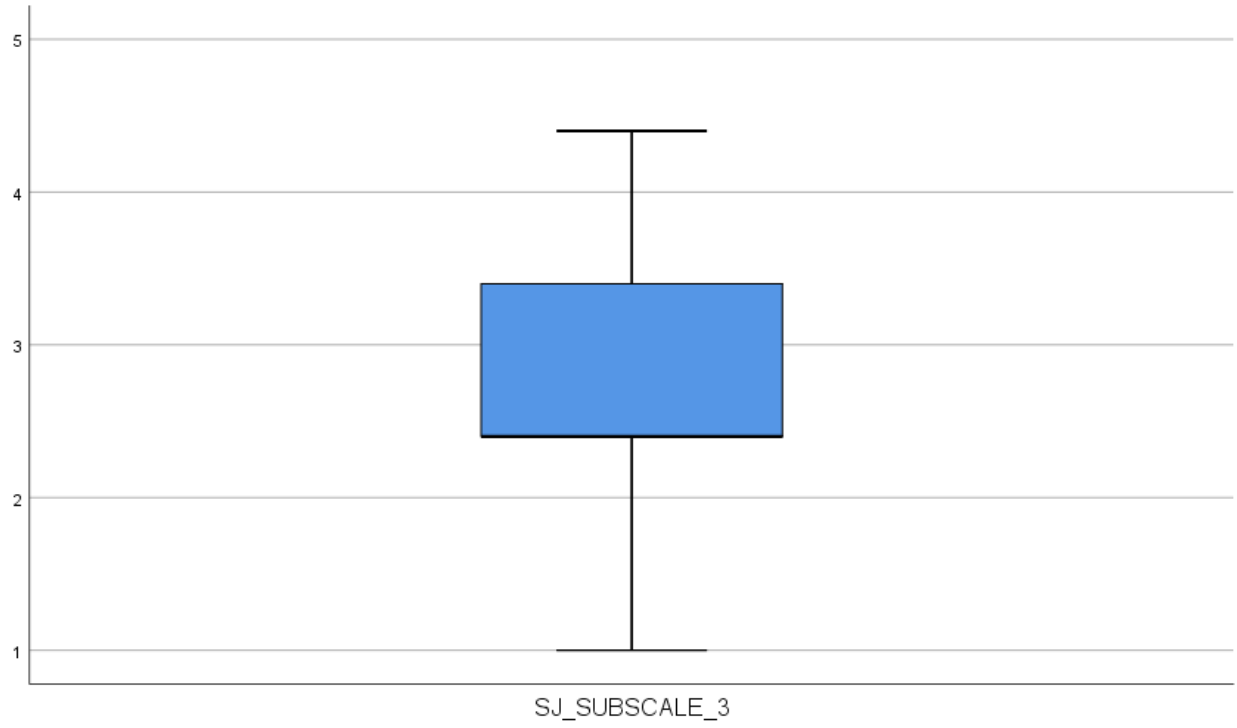

Detrended Normal Q-Q Plot of EDEQ_globalL_3
Dev from Normal
Observed Value
0.4
0.2
0.0
-0.2
0
1
2
3
4
5

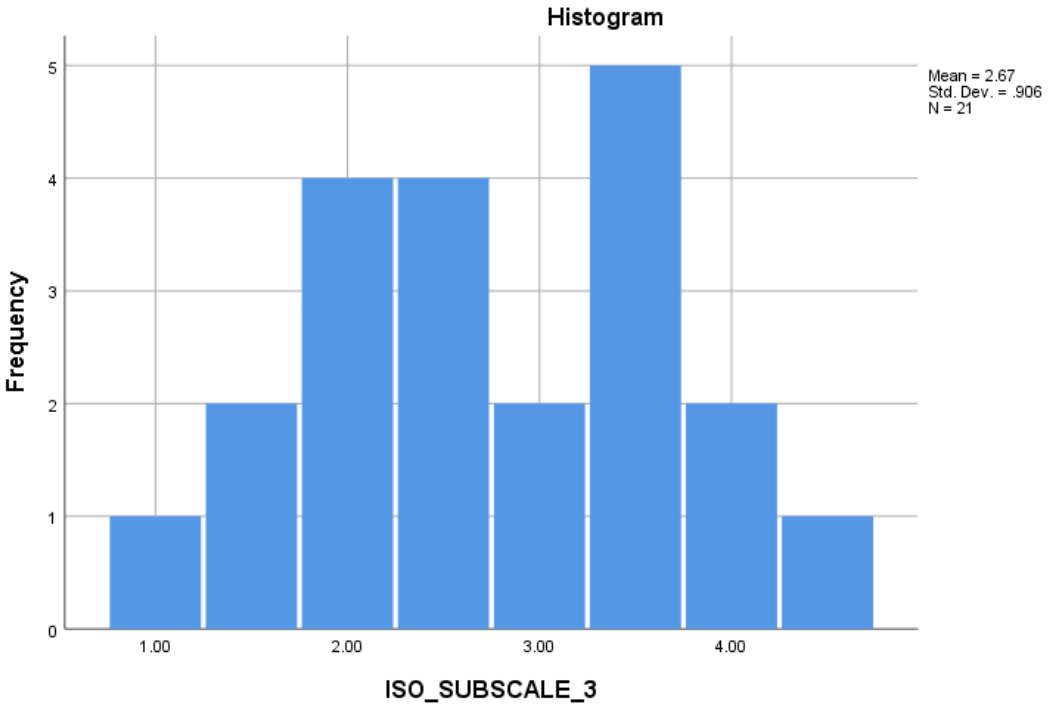

5
4
3
2
1
0
EDEQ_globalL_3

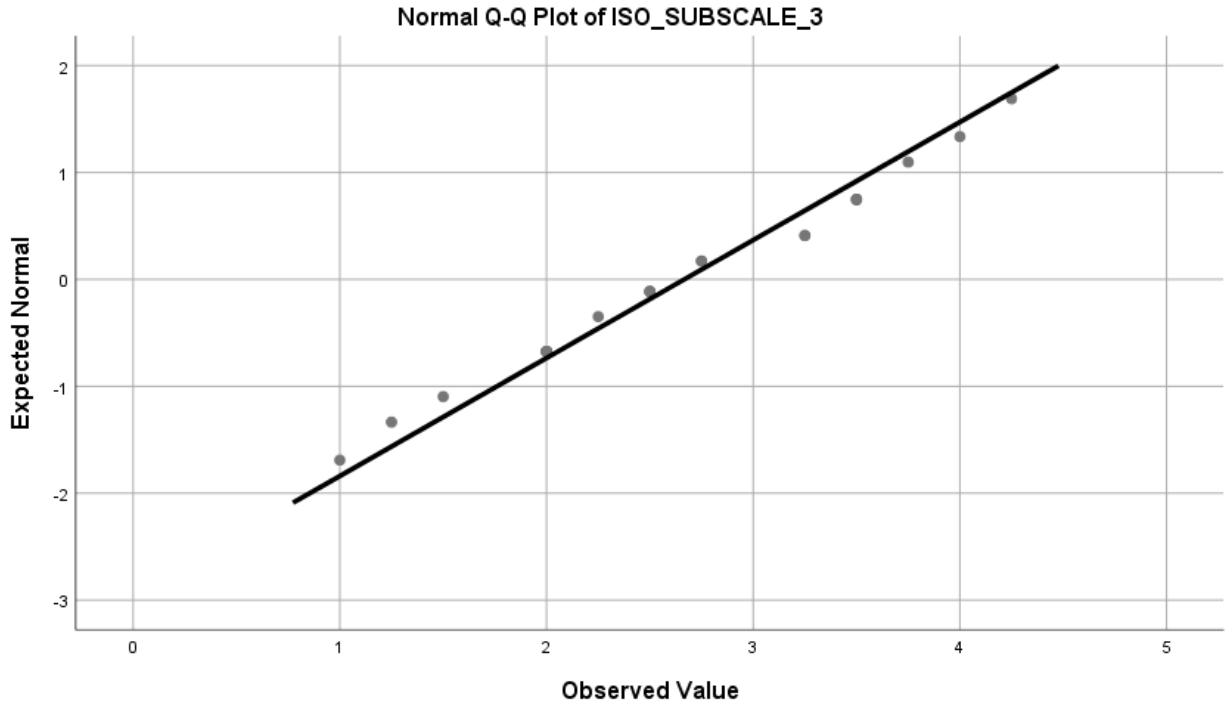

Histogram
Mean = 2.67
Std. Dev. = .958
N = 21
Frequency
10
8
6
4
2
0
1.00
2.00
3.00
4.00
5.00
SJ_SUBSCALE_3

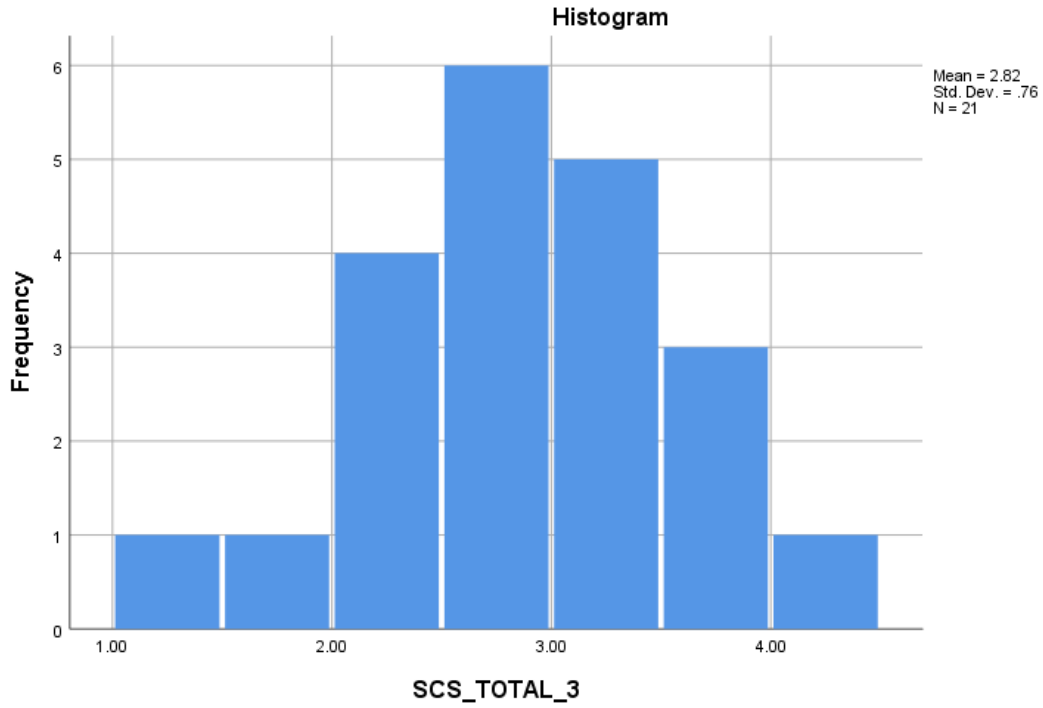

Normal Q-Q Plot of SJ_SUBSCALE_3
Expected Normal
Observed Value
3
2
1
0
-1
-2
0
1
2
3
4
5

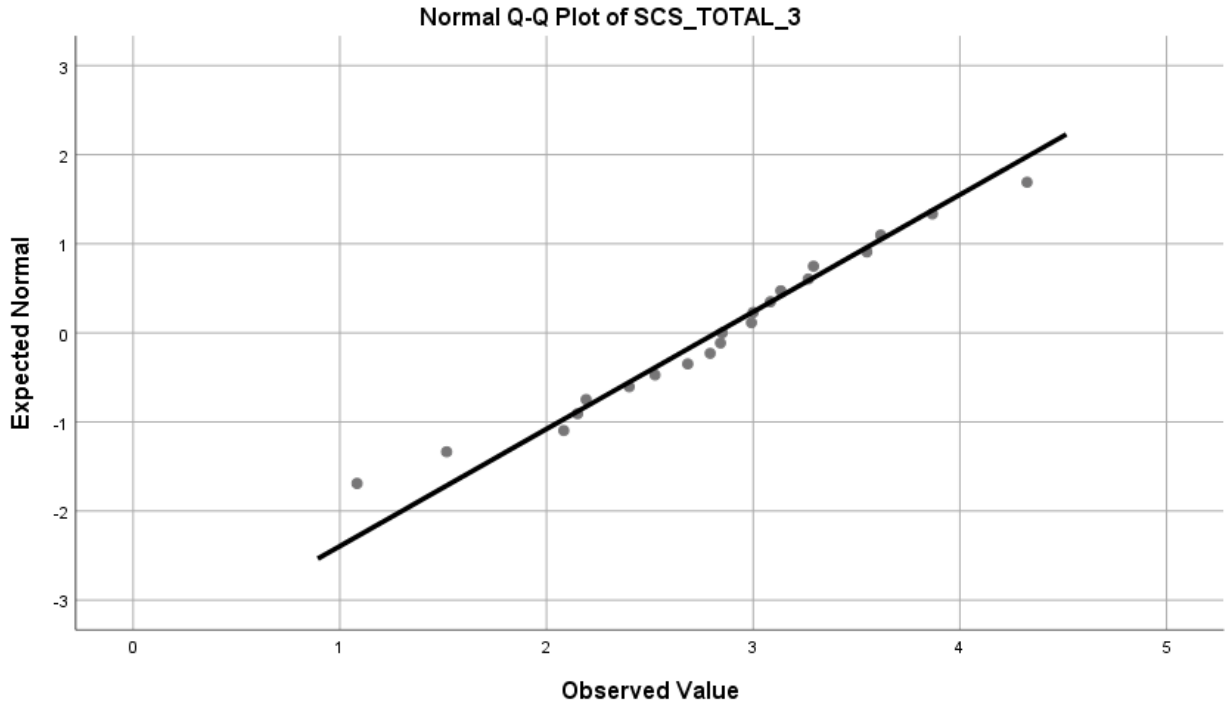

Detrended Normal Q-Q Plot of SJ_SUBSCALE_3
Dev from Normal
Observed Value
0.2
0.0000
-0.2
-0.4
1
2
3
4
5

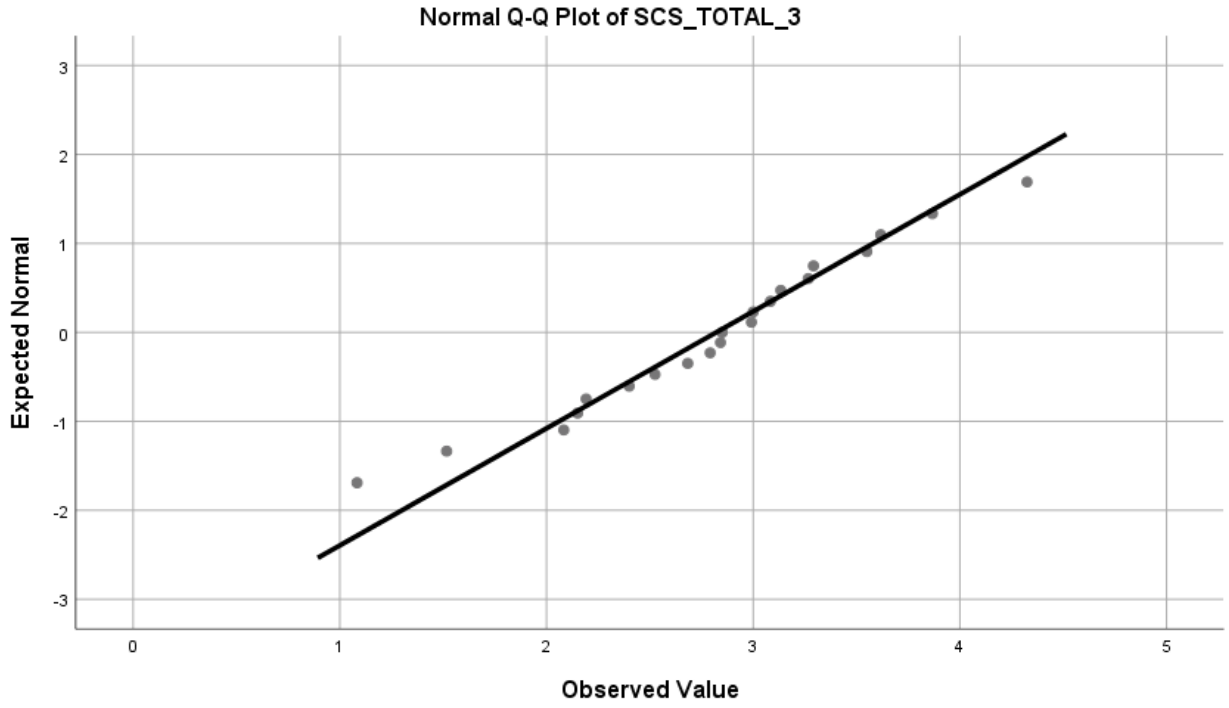

5
4
3
2
1
SJ_SUBSCALE_3

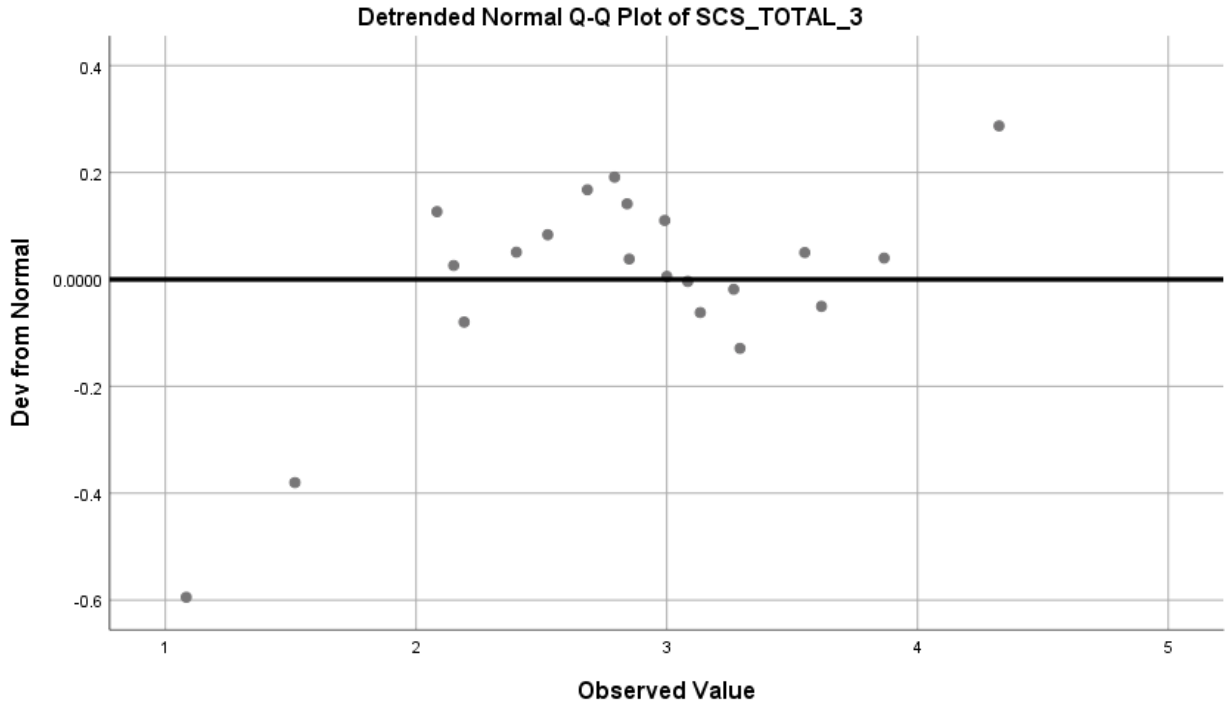

Histogram
Mean = 2.67
Std. Dev. = .906
N = 21
Frequency
5
4
3
2
1
0
1.00
2.00
3.00
4.00
ISO_SUBSCALE_3

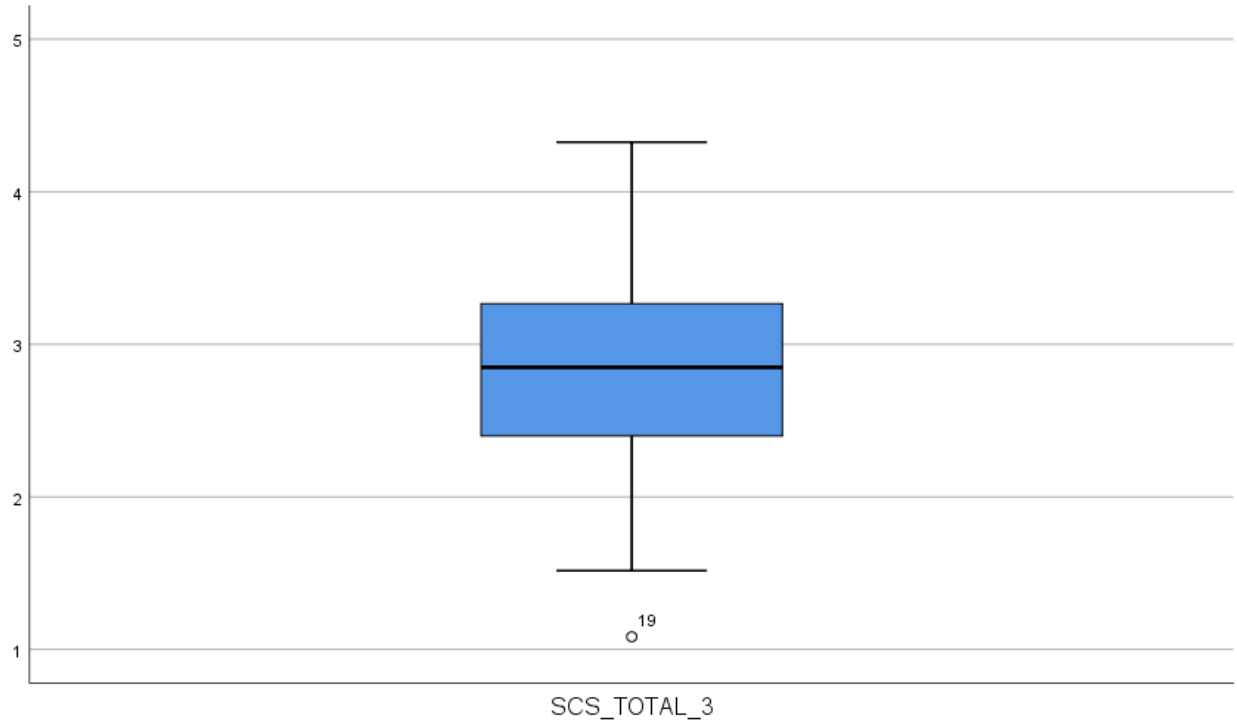

Normal Q-Q Plot of ISO_SUBSCALE_3
Expected Normal
Observed Value
2
1
0
-1
-2
-3
0
1
2
3
4
5

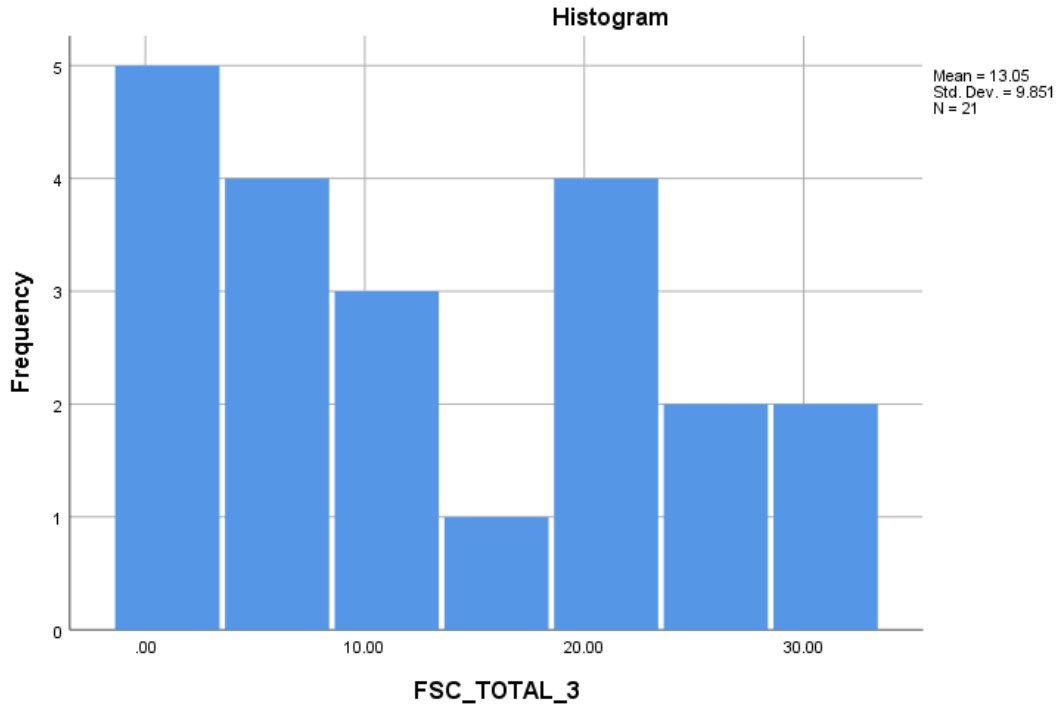

Histogram
Mean = 2.82
Std. Dev. = .76
N = 21
Frequency
SCS_TOTAL_3
6
5
4
3
2
1
0
1.00
2.00
3.00
4.00

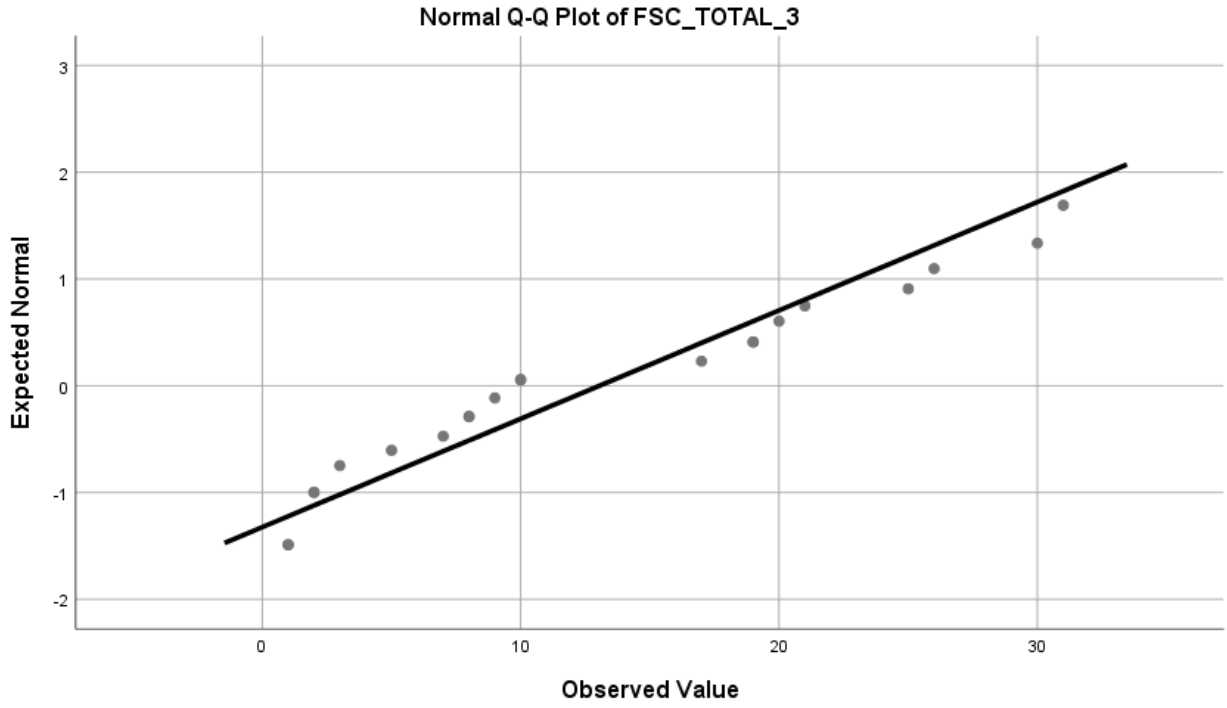

Normal Q-Q Plot of SCS_TOTAL_3
Expected Normal
Observed Value
3
2
1
0
-1
-2
-3
0
1
2
3
4
5

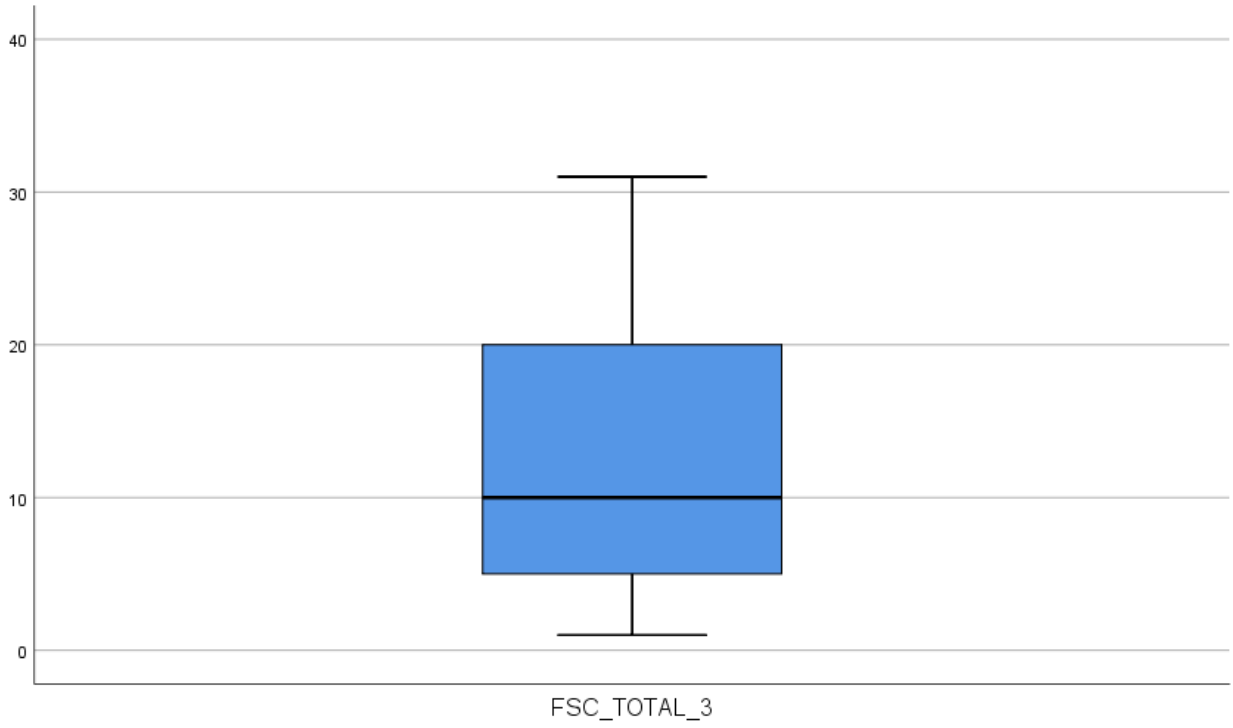

Normal Q-Q Plot of SCS_TOTAL_3
Expected Normal
Observed Value
3
2
1
0
-1
-2
-3
0
1
2
3
4
5

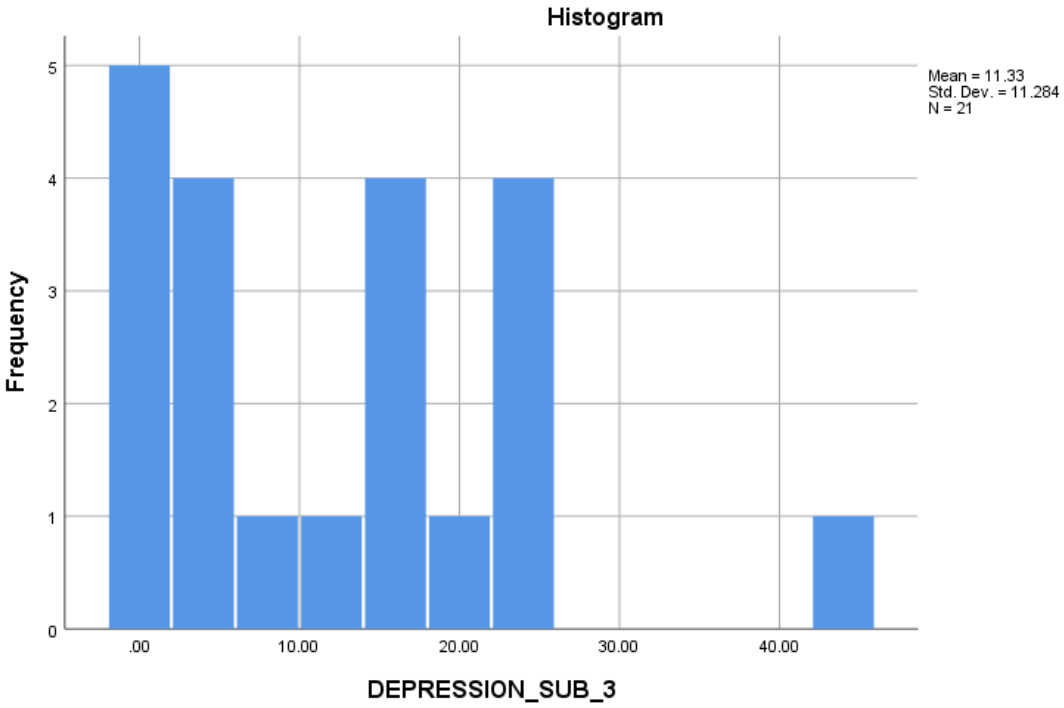

Detrended Normal Q-Q Plot of SCS_TOTAL_3
Dev from Normal
0.4
0.2
0.0000
-0.2
-0.4
-0.6
1
2
3
4
5
Observed Value

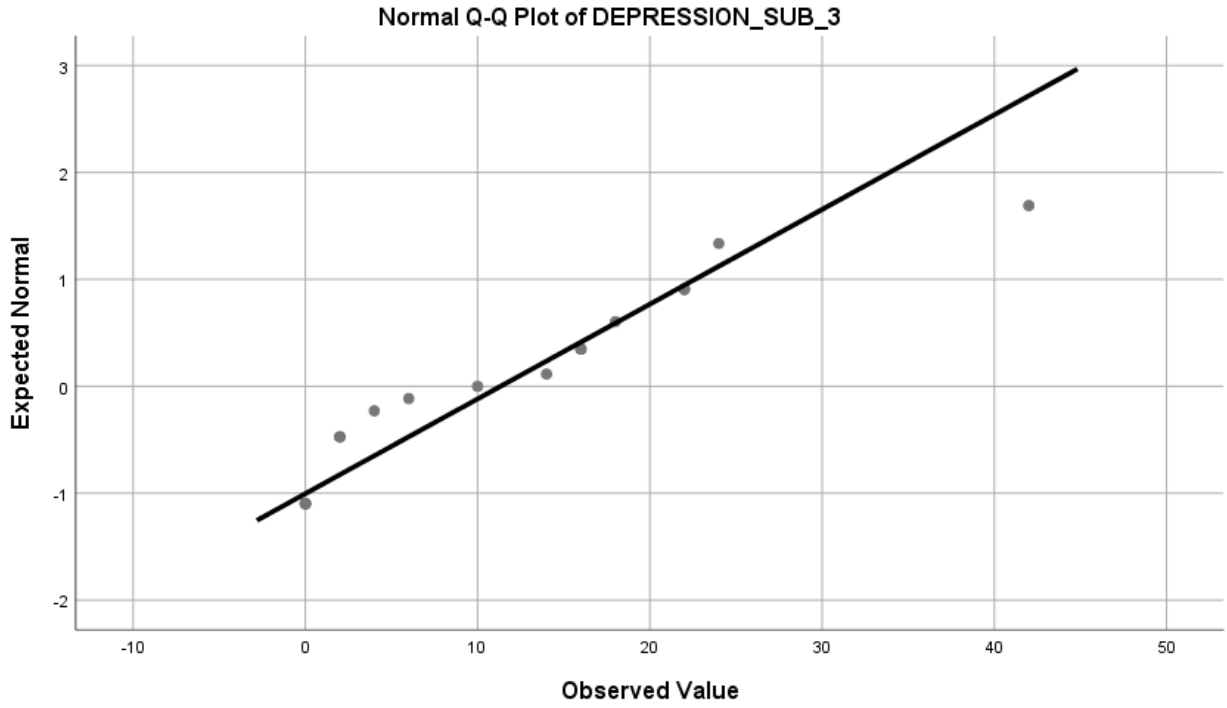

5
4
3
2
1
19
SCS_TOTAL_3

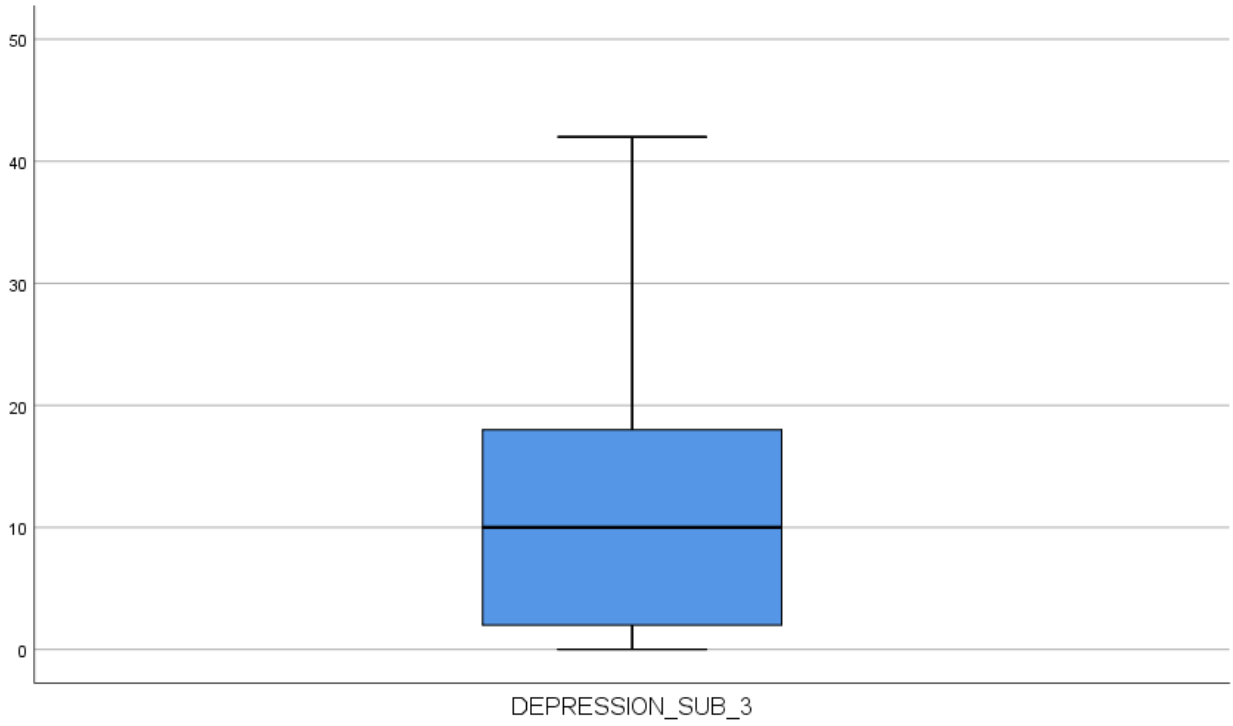

Histogram
Mean = 13.05
Std. Dev. = 9.851
N = 21
Frequency
0
1
2
3
4
5
.00
10.00
20.00
30.00
FSC_TOTAL_3

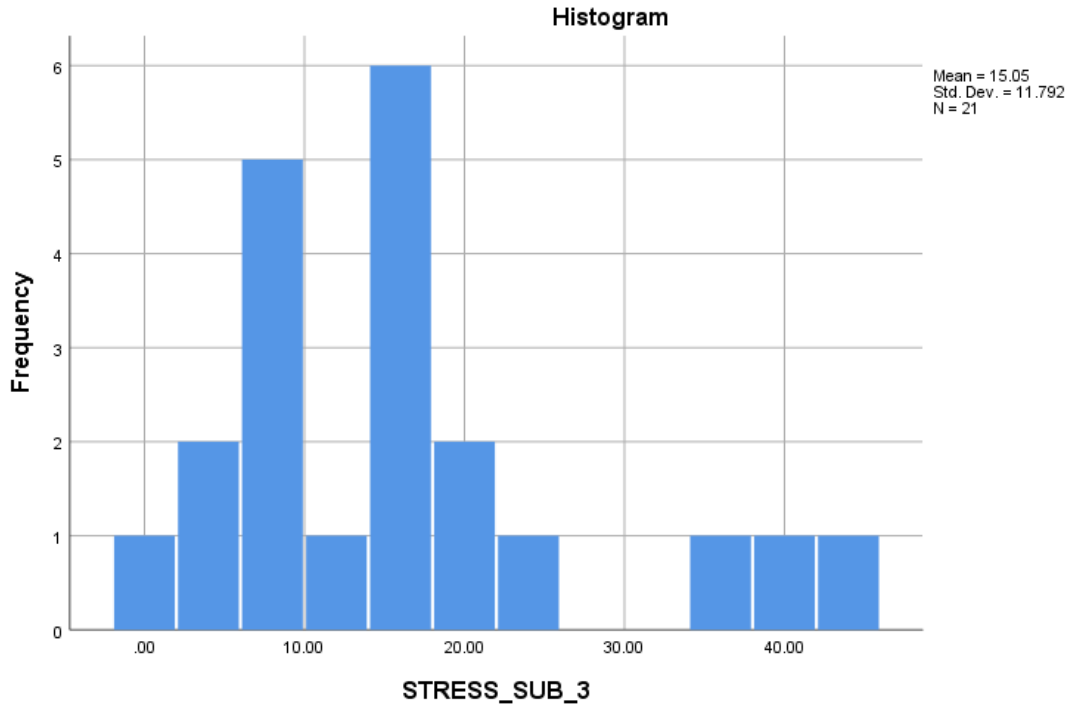

Normal Q-Q Plot of FSC_TOTAL_3
Expected Normal
3
2
1
0
-1
-2
0
10
20
30
Observed Value

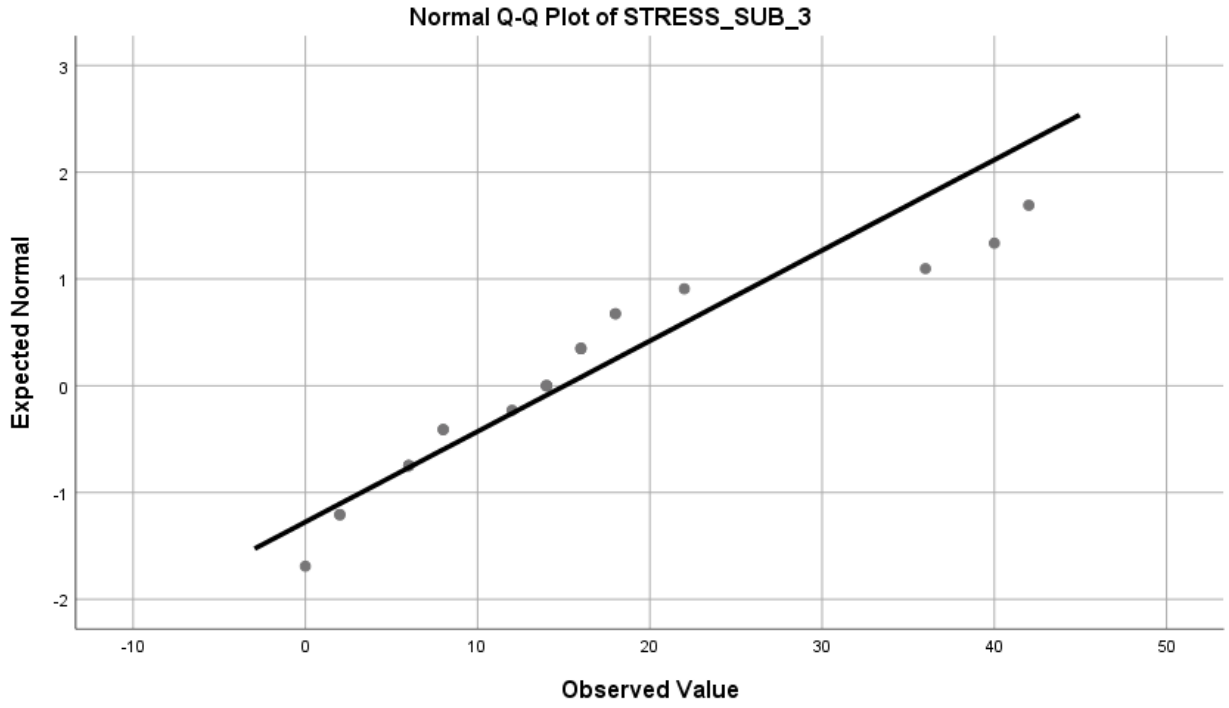

40
30
20
10
0
FSC_TOTAL_3

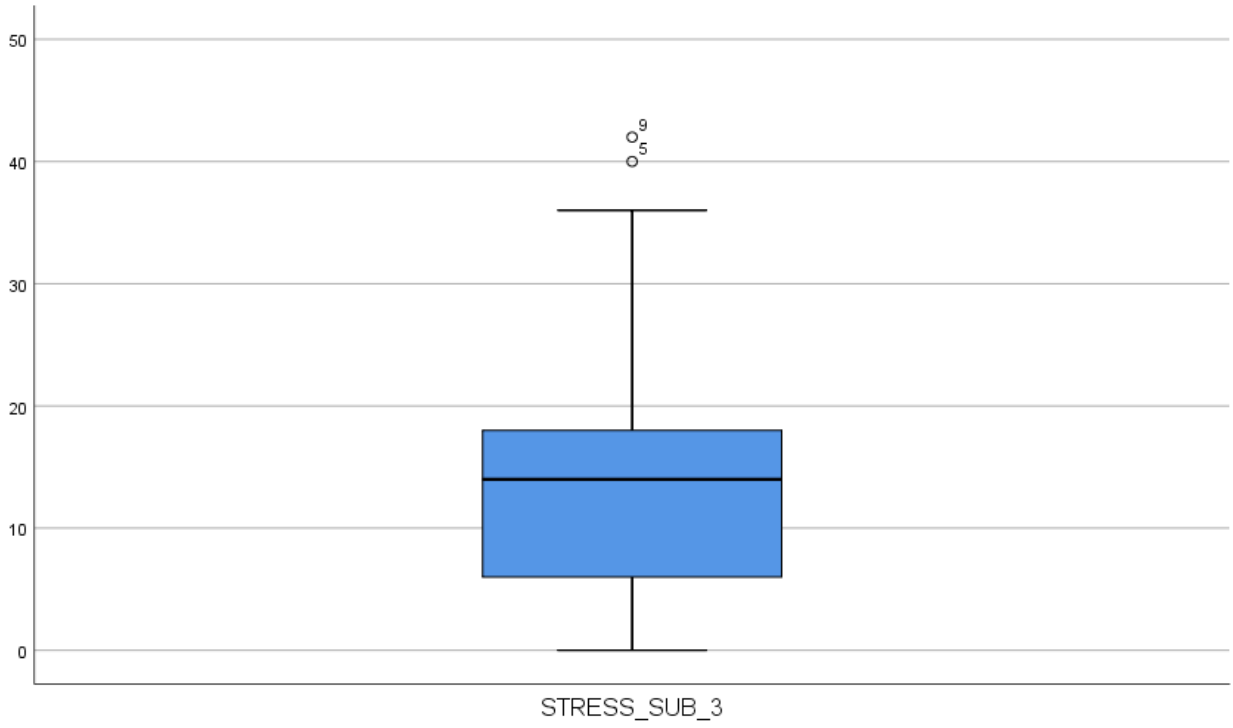

Histogram
Mean = 11.33
Std. Dev. = 11.284
N = 21
Frequency
5
4
3
2
1
0
.00
10.00
20.00
30.00
40.00
DEPRESSION_SUB_3

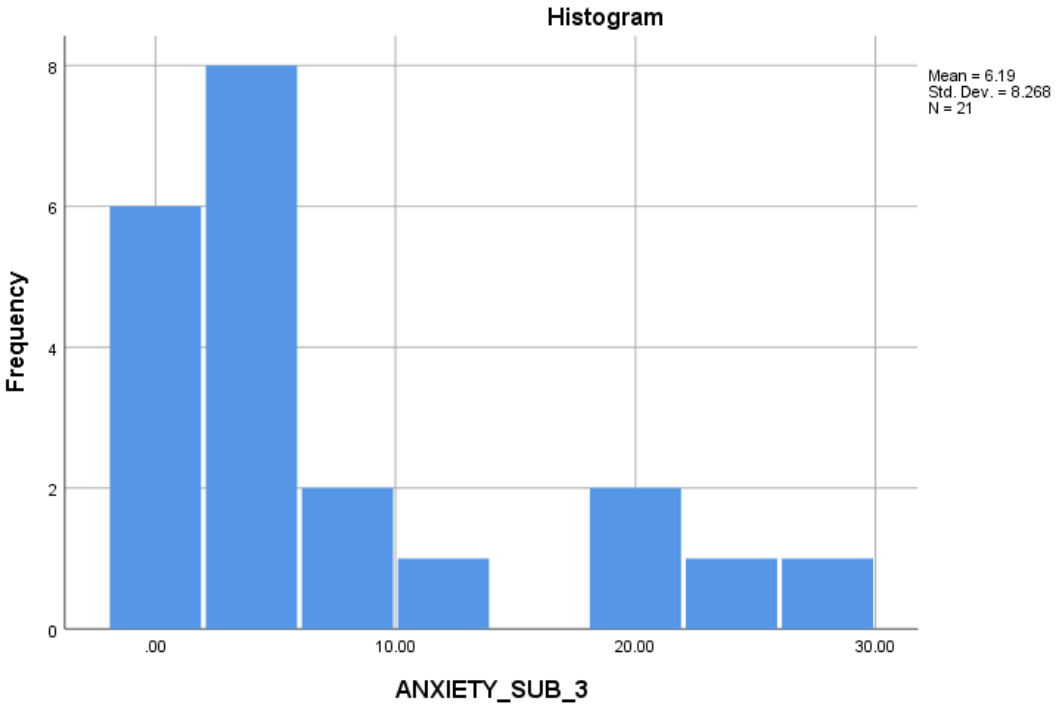

Normal Q-Q Plot of DEPRESSION_SUB_3
Expected Normal
Observed Value
3
2
1
0
-1
-2
-10
0
10
20
30
40
50

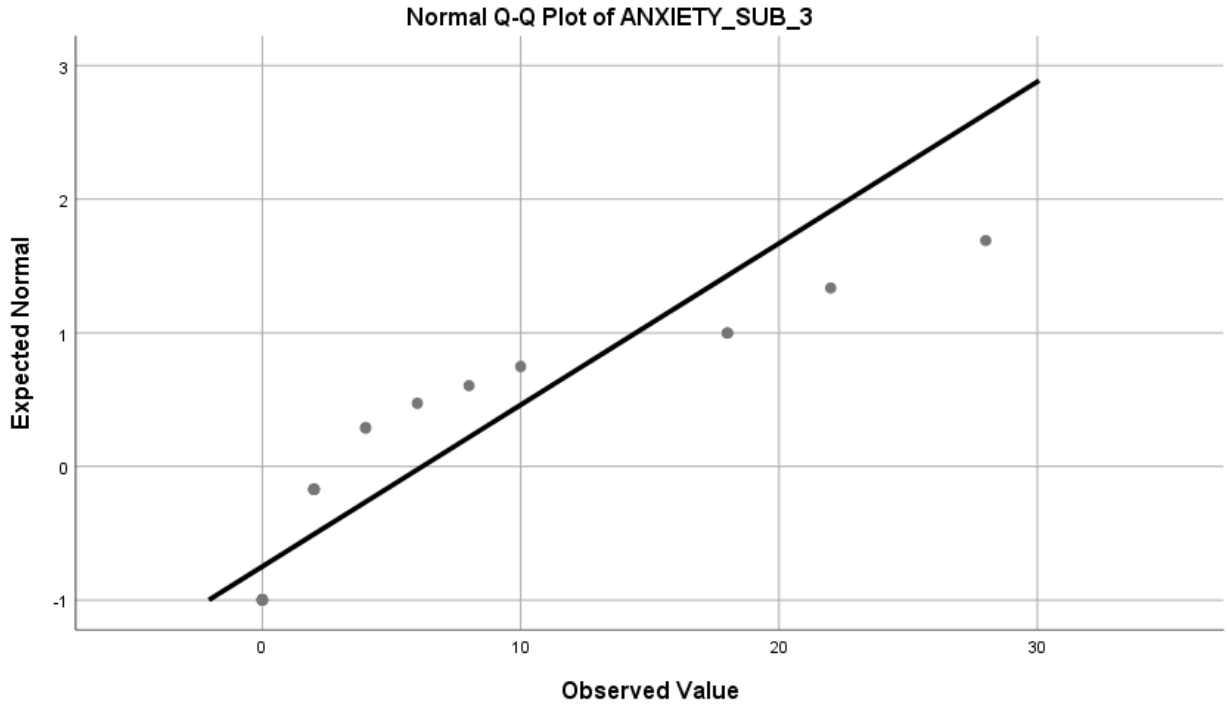

50
40
30
20
10
0
DEPRESSION_SUB_3

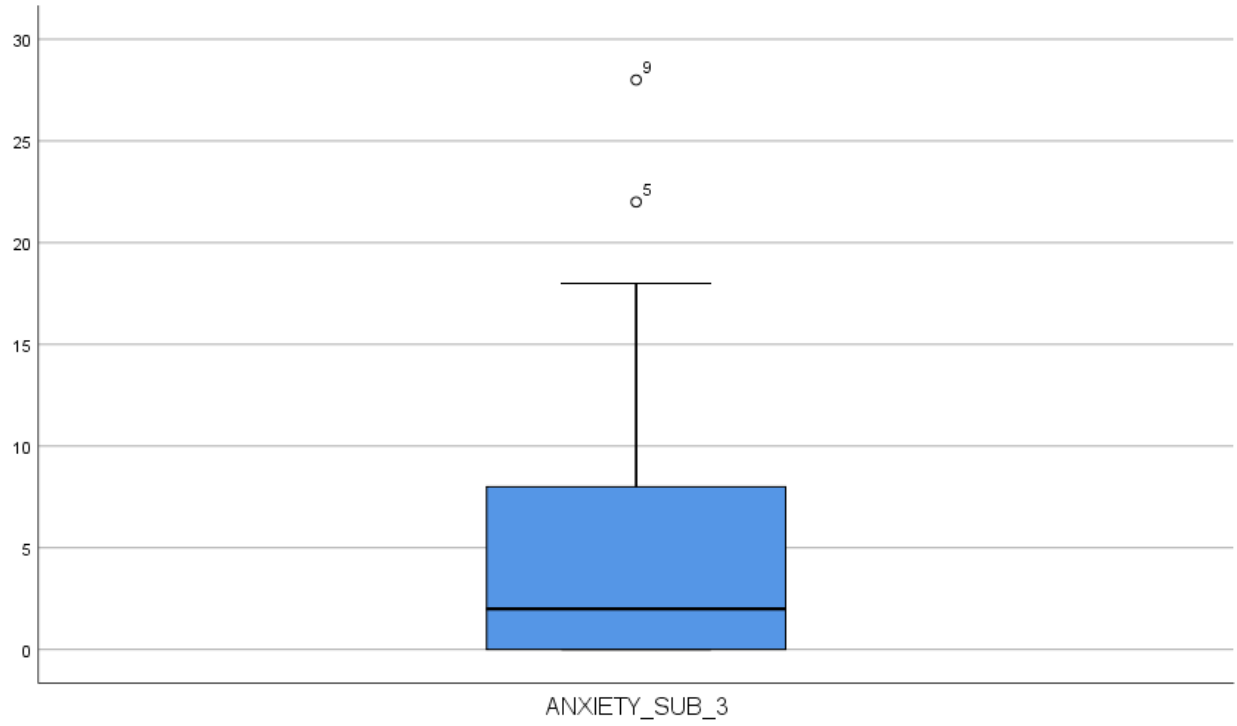

Histogram
Mean = 15.05
Std. Dev. = 11.792
N = 21
Frequency
0
1
2
3
4
5
6
.00
10.00
20.00
30.00
40.00
STRESS_SUB_3

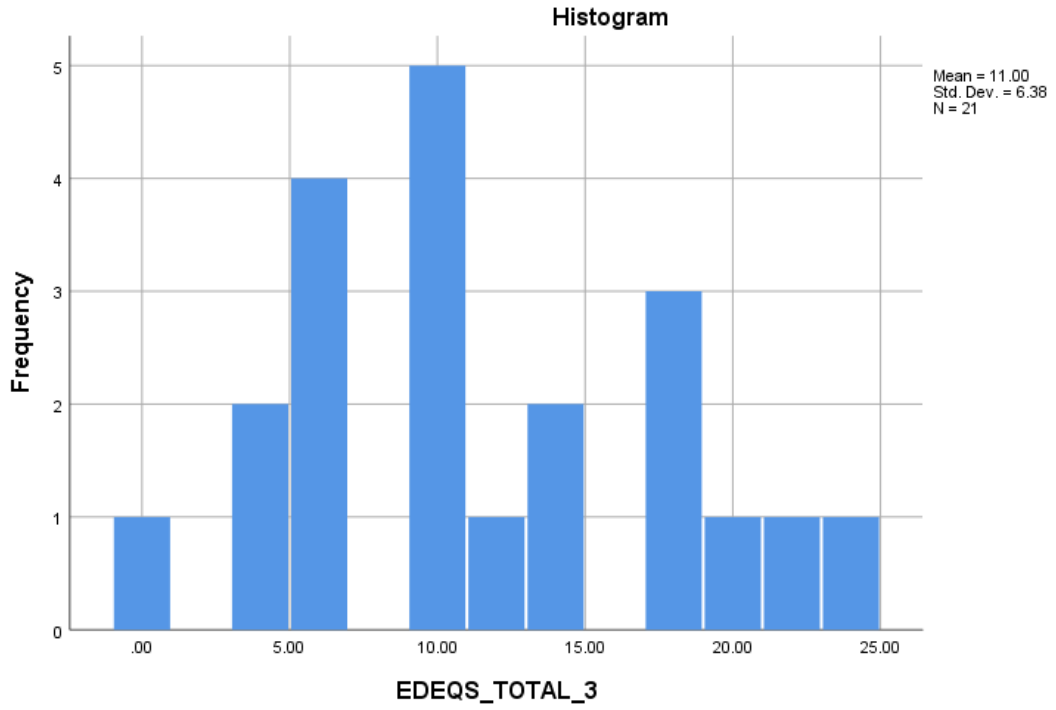

Normal Q-Q Plot of STRESS_SUB_3
Expected Normal
3
2
1
0
-1
-2
-10
0
10
20
30
40
50
Observed Value

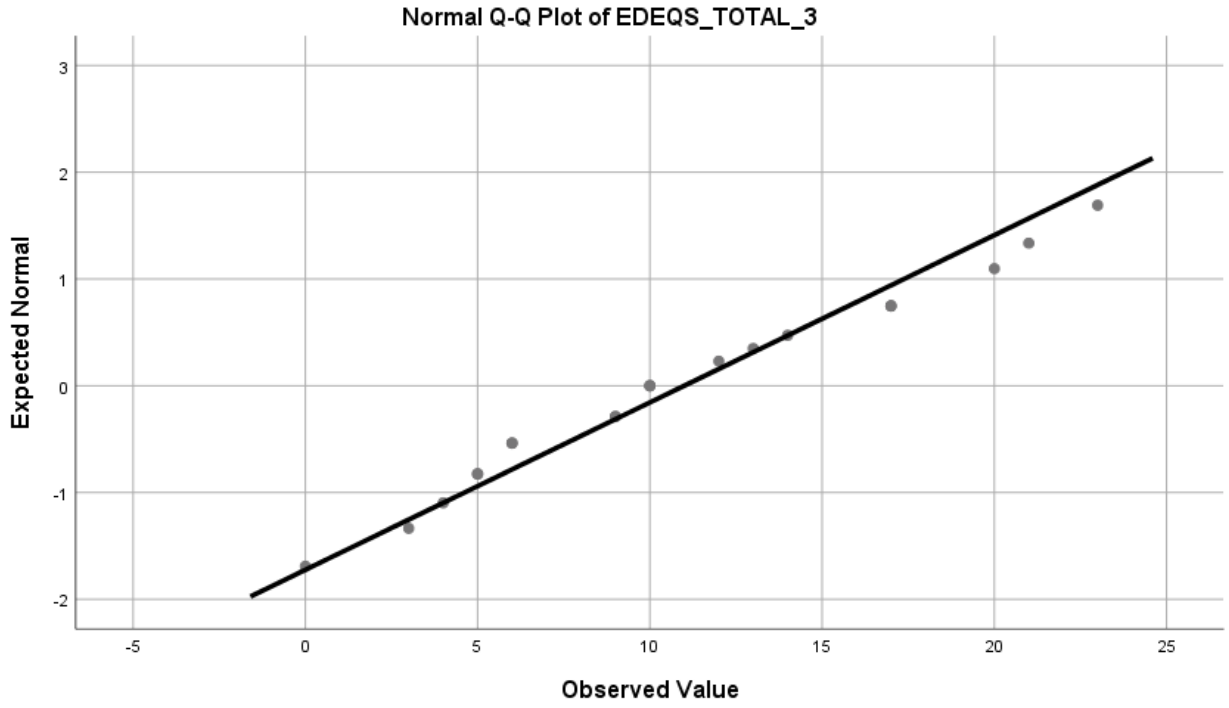

50
40
30
20
10
0
9
5
STRESS_SUB_3

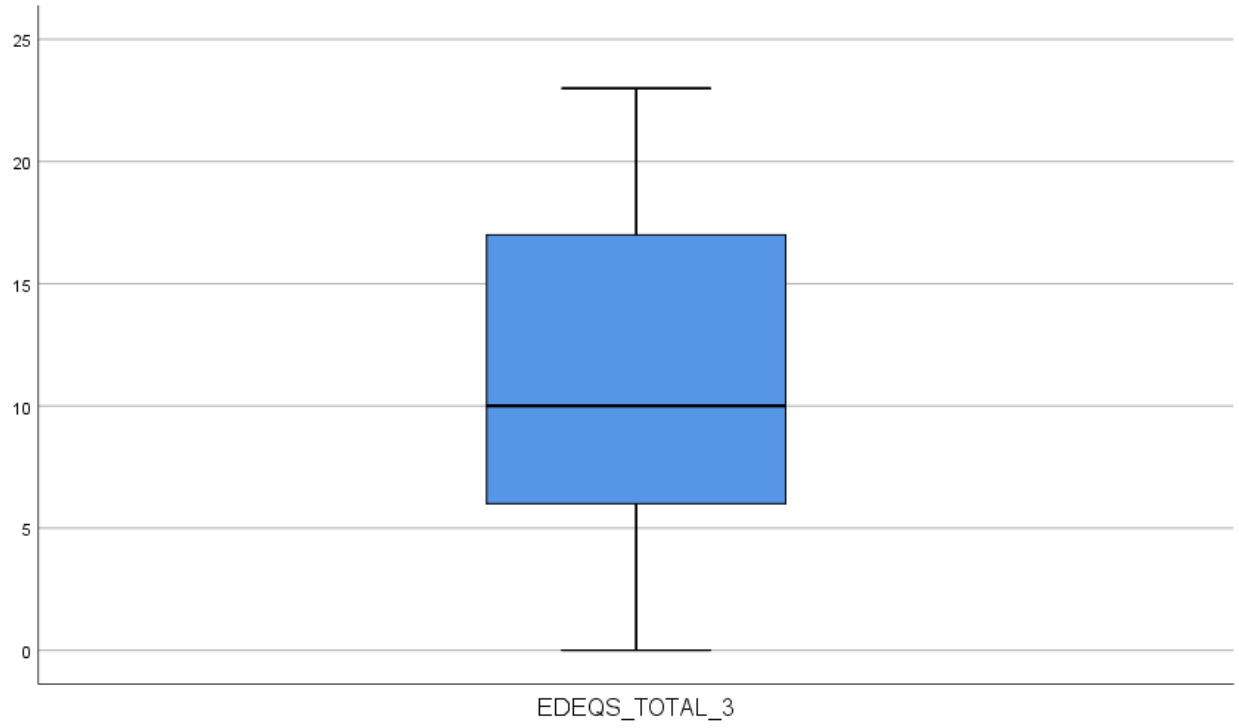

Histogram
Mean = 6.19
Std. Dev. = 8.268
N = 21
Frequency
8
6
4
2
0
.00
10.00
20.00
30.00
ANXIETY_SUB_3

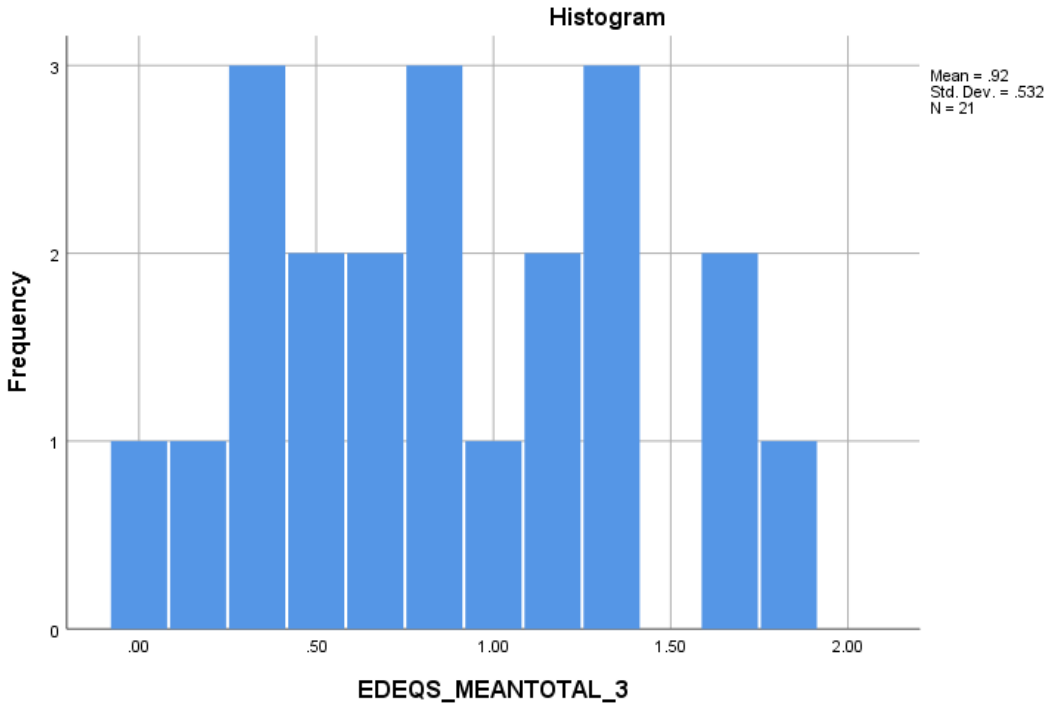

Normal Q-Q Plot of ANXIETY_SUB_3
Expected Normal
Observed Value
3
2
1
0
-1
0
10
20
30

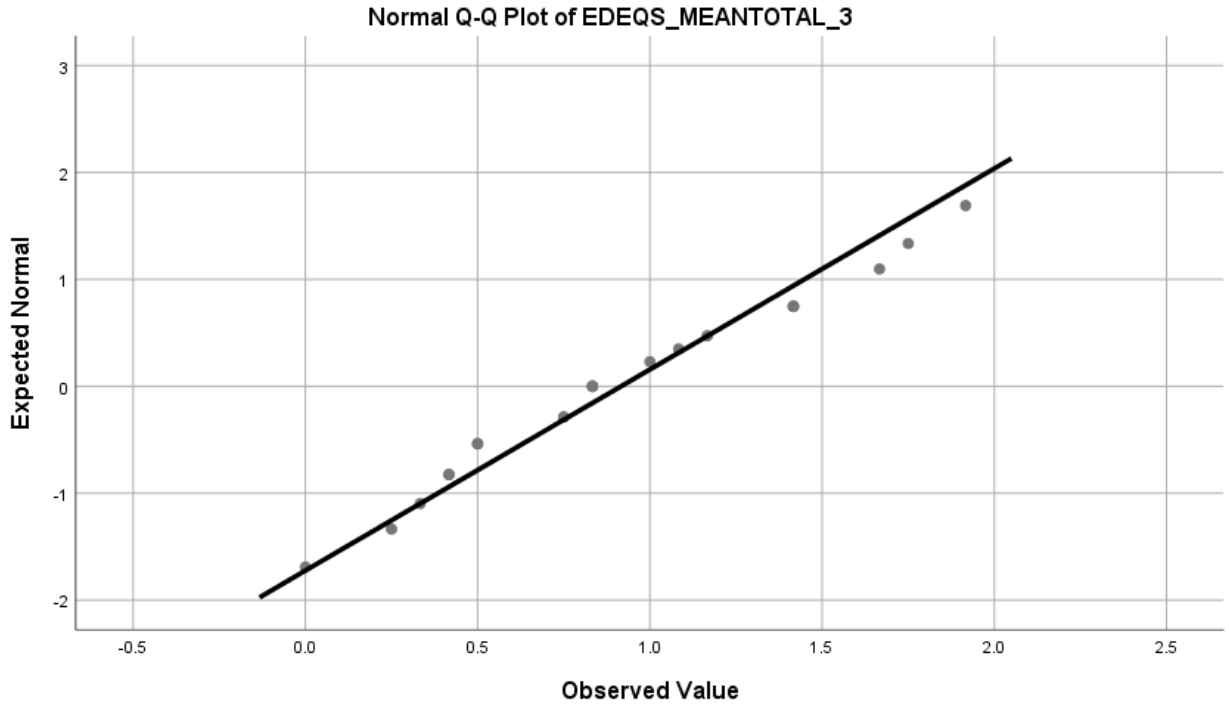

30
25
20
15
10
5
0
9
5
ANXIETY_SUB_3

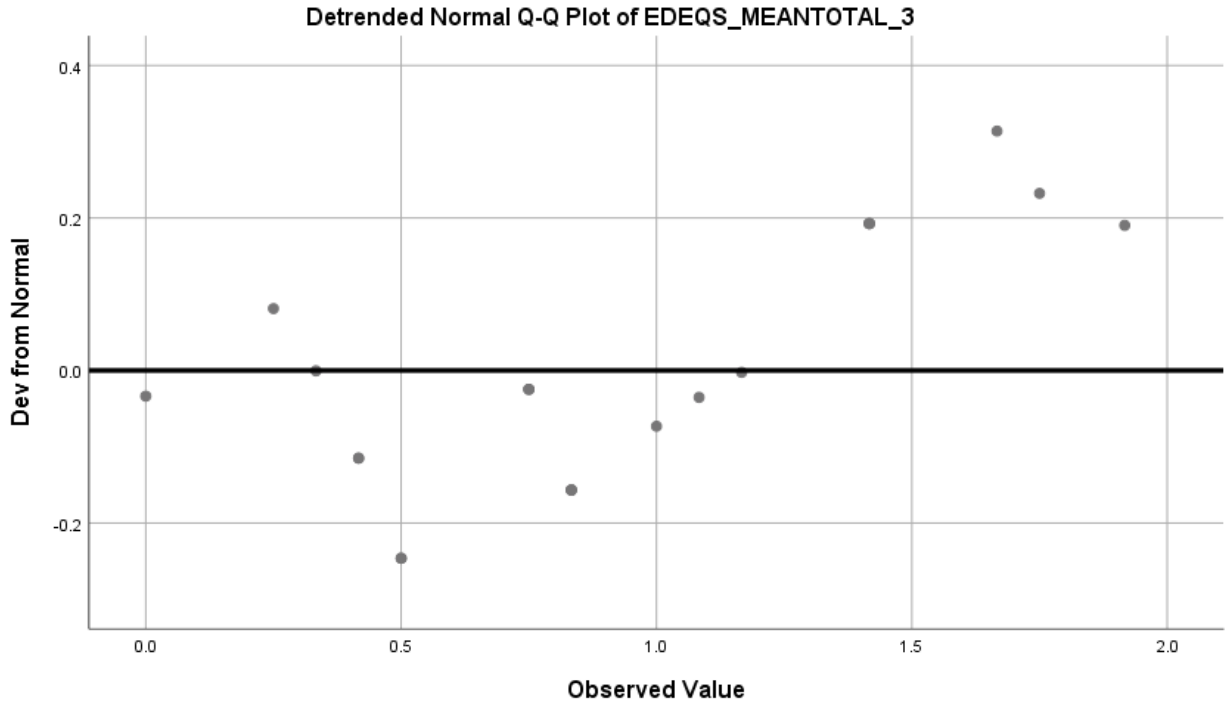

Histogram
Mean = 11.00
Std. Dev. = 6.38
N = 21
Frequency
0
1
2
3
4
5
.00
5.00
10.00
15.00
20.00
25.00
EDEQS_TOTAL_3

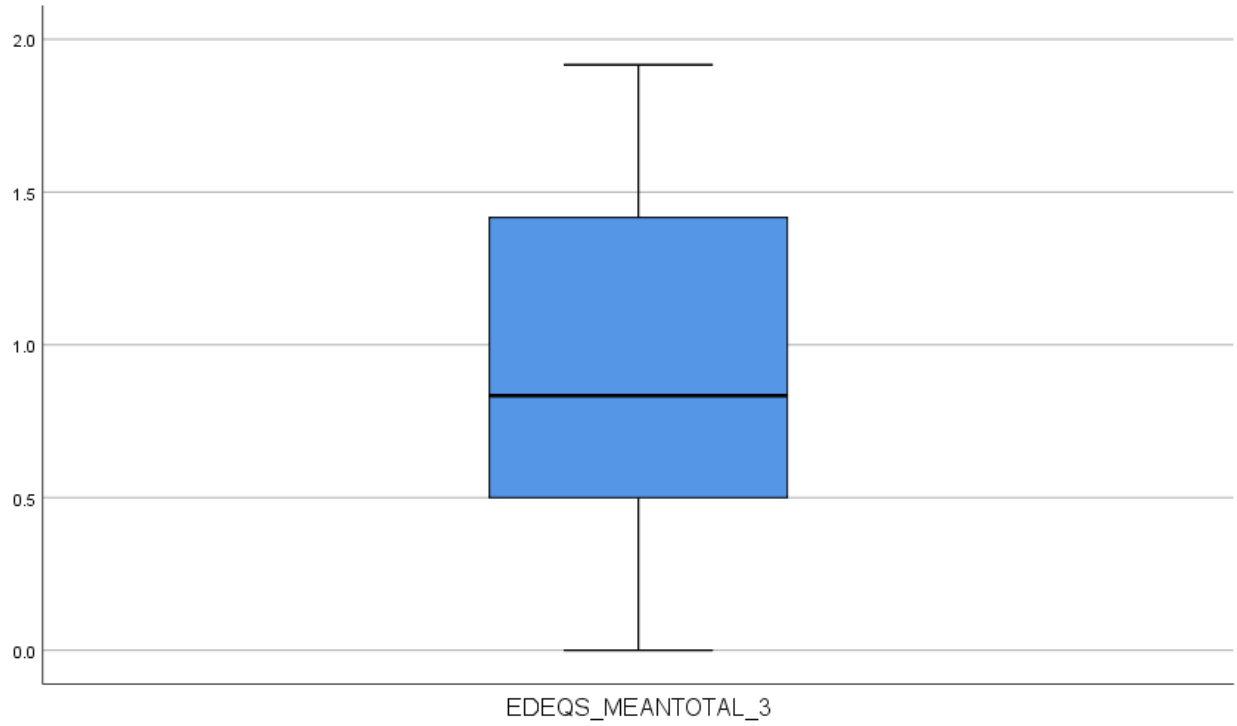

Normal Q-Q Plot of EDEQS_TOTAL_3
Expected Normal
-2
-1
0
1
2
3
-5
0
5
10
15
20
25
Observed Value

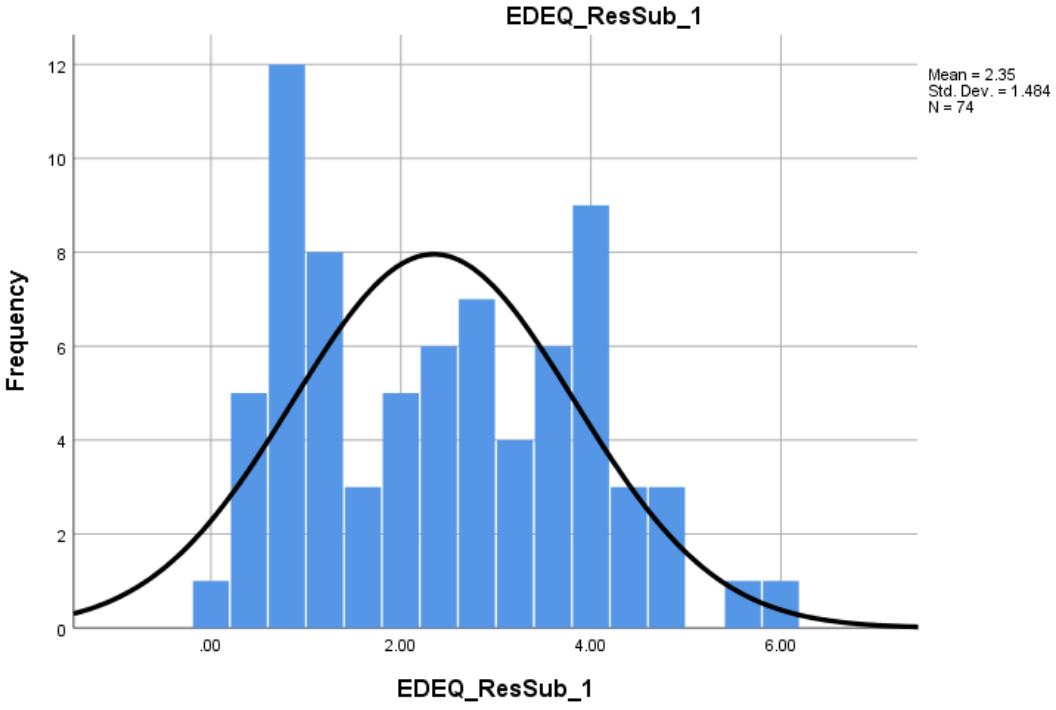

25
20
15
10
5
0
EDEQS_TOTAL_3

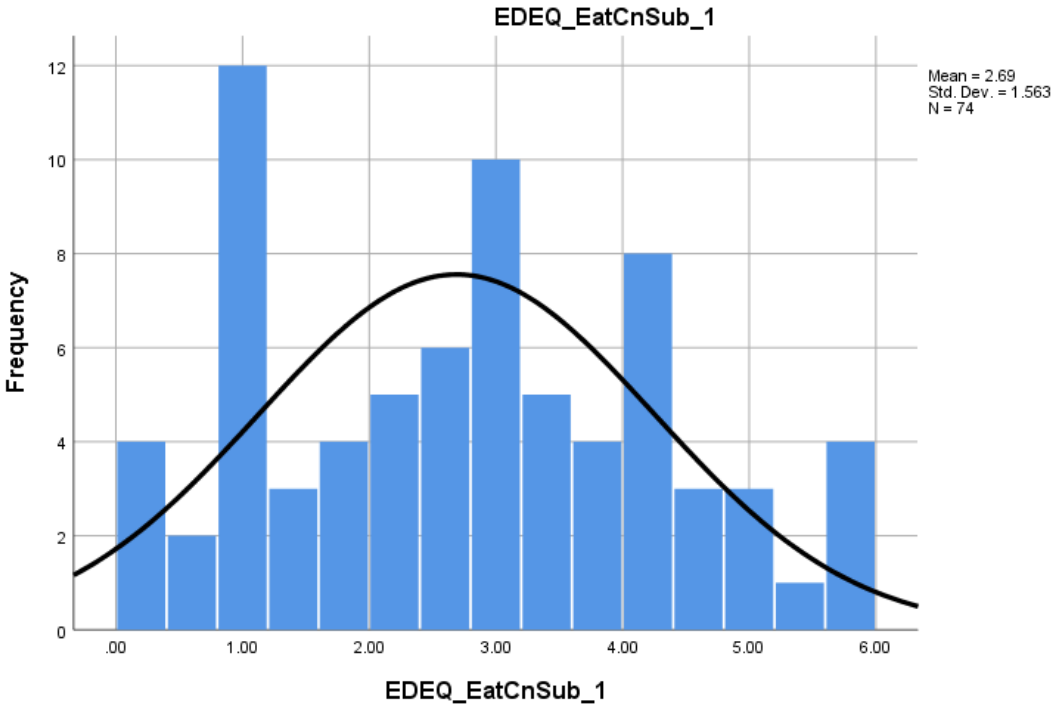

Histogram
Mean = .92
Std. Dev. = .532
N = 21
Frequency
3
2
1
0
.00
.50
1.00
1.50
2.00
EDEQS_MEANTOTAL_3

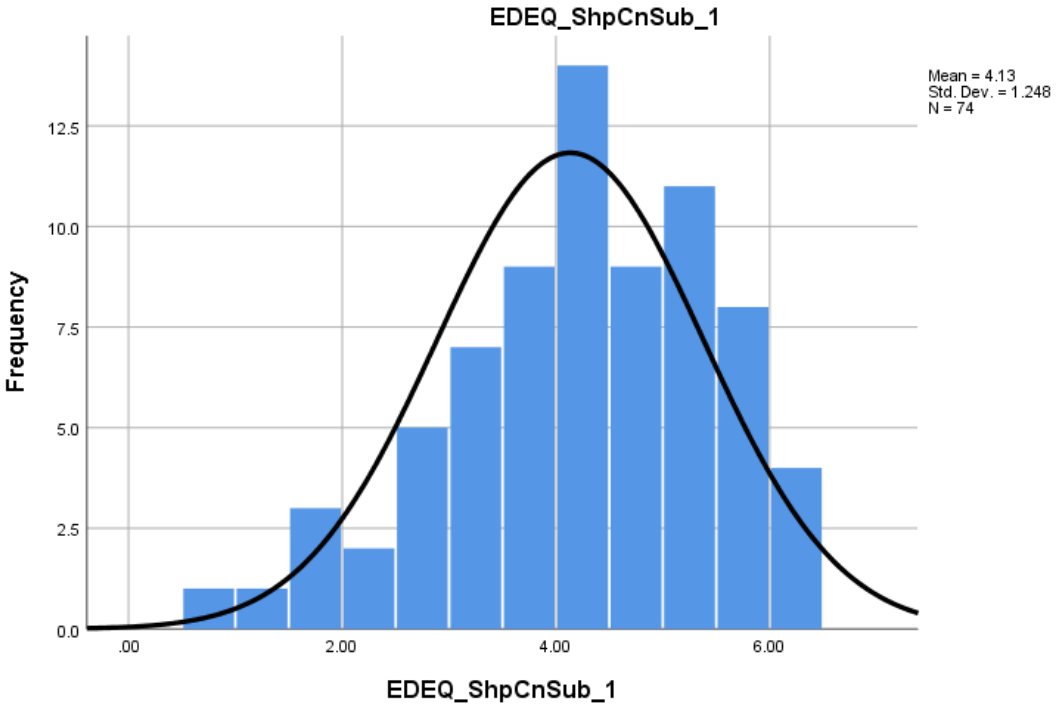

Normal Q-Q Plot of EDEQS_MEANTOTAL_3
Expected Normal
Observed Value
3
2
1
0
-1
-2
-0.5
0.0
0.5
1.0
1.5
2.0
2.5

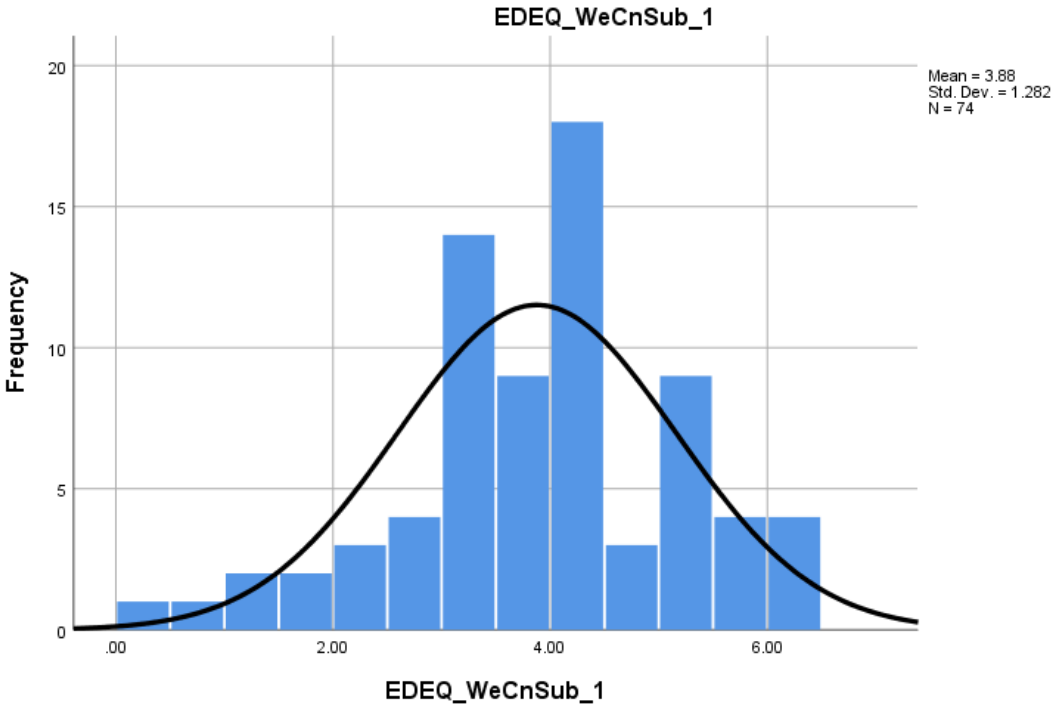

Detrended Normal Q-Q Plot of EDEQS_MEANTOTAL_3
Dev from Normal
Observed Value
0.4
0.2
0.0
-0.2
0.0
0.5
1.0
1.5
2.0

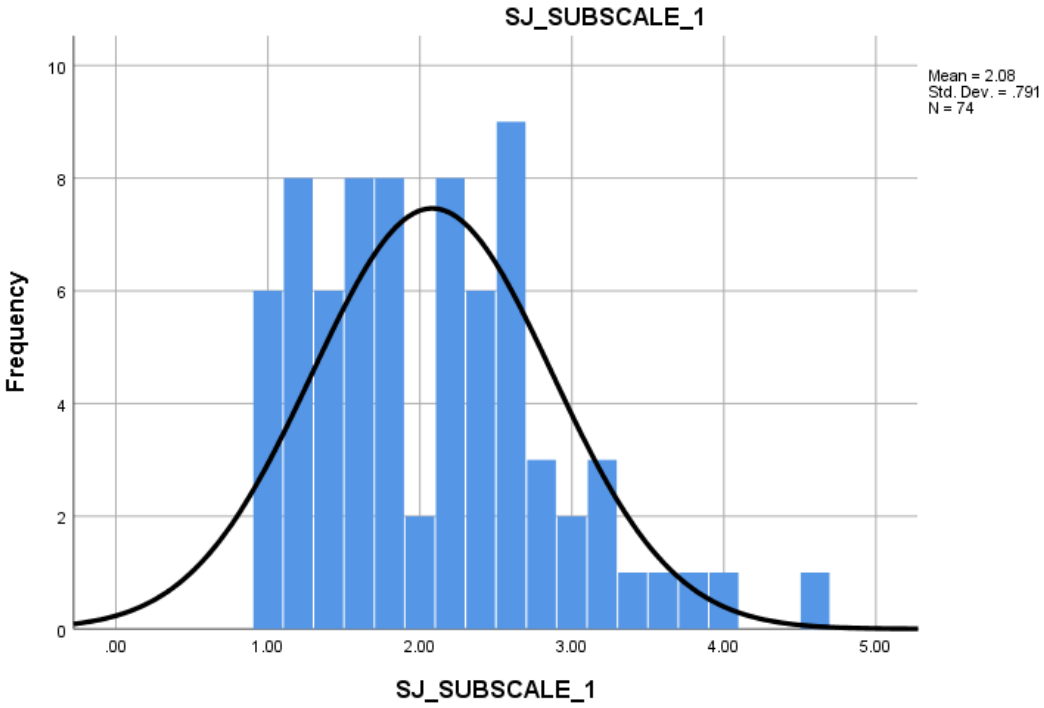

2.0
1.5
1.0
0.5
0.0
EDEQS_MEANTOTAL_3

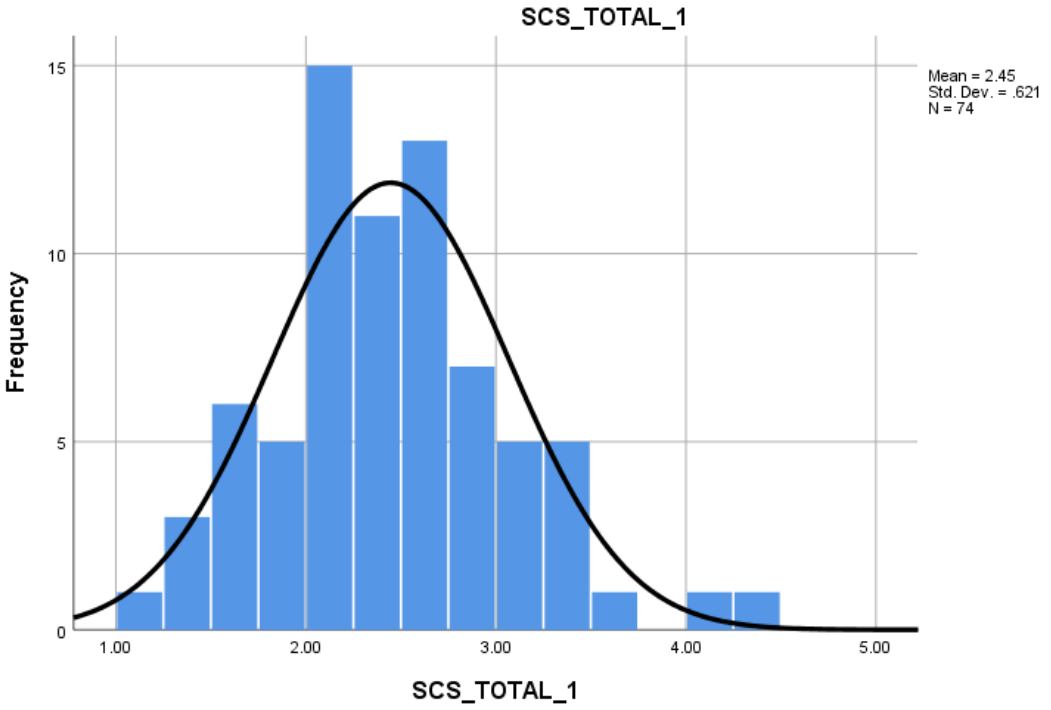

EDEQ_ResSub_1
Mean = 2.35
Std. Dev. = 1.484
N = 74
Frequency
12
10
8
6
4
2
0
.00
2.00
4.00
6.00
EDEQ_ResSub_1

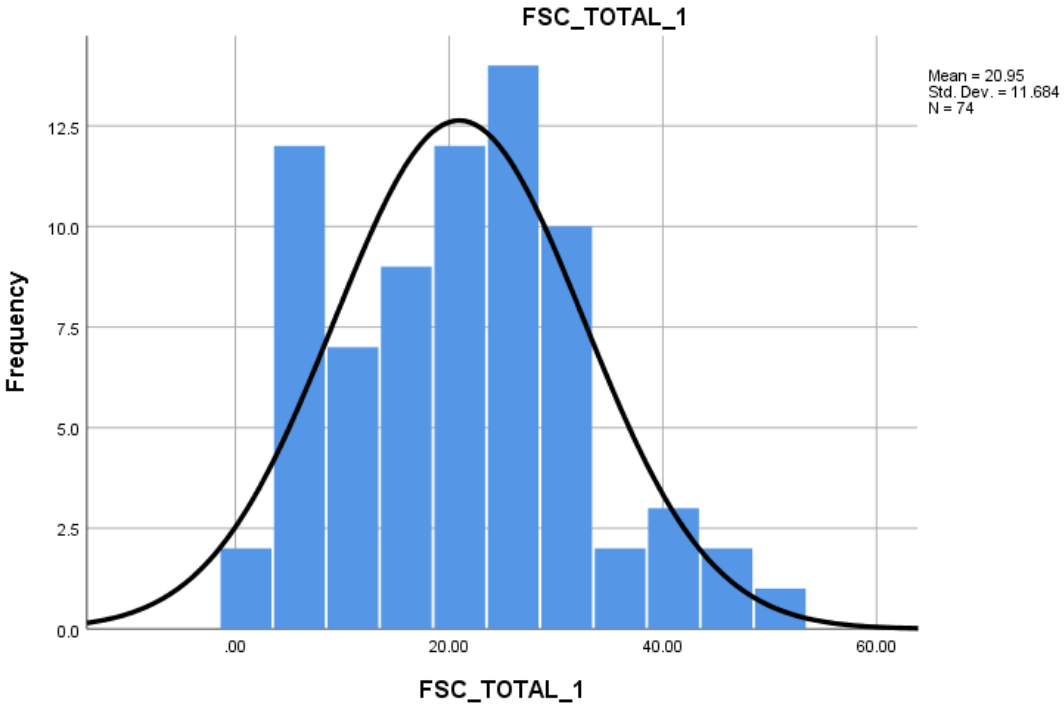

EDEQ_EatCnSub_1
Mean = 2.69
Std. Dev. = 1.563
N = 74
Frequency
0
2
4
6
8
10
12
.00
1.00
2.00
3.00
4.00
5.00
6.00
EDEQ_EatCnSub_1

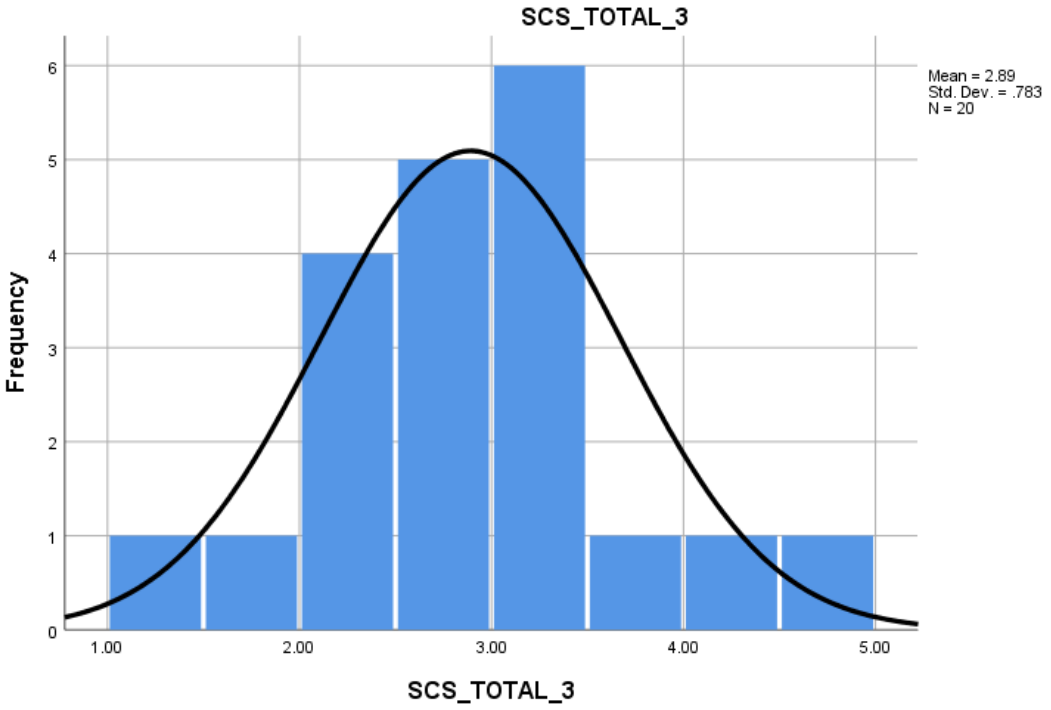

EDEQ_ShpCnSub_1
Mean = 4.13
Std. Dev. = 1.248
N = 74
Frequency
0.0
2.5
5.0
7.5
10.0
12.5
.00
2.00
4.00
6.00
EDEQ_ShpCnSub_1

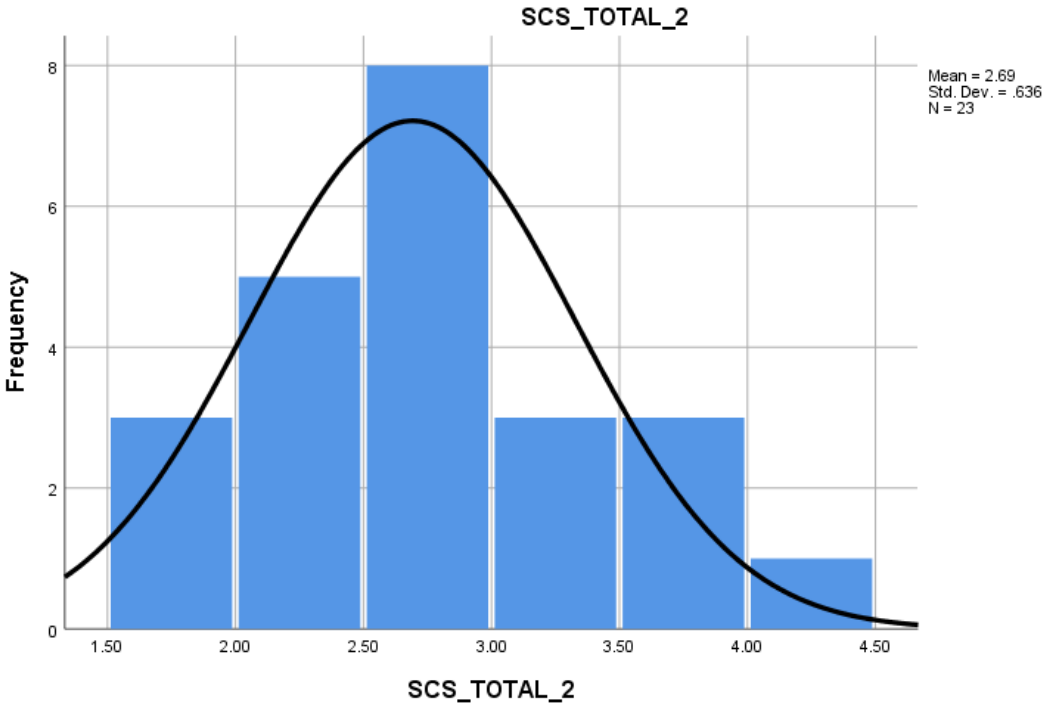

EDEQ_WeCnSub_1
Mean = 3.88
Std. Dev. = 1.282
N = 74
Frequency
20
15
10
5
0
.00
2.00
4.00
6.00
EDEQ_WeCnSub_1

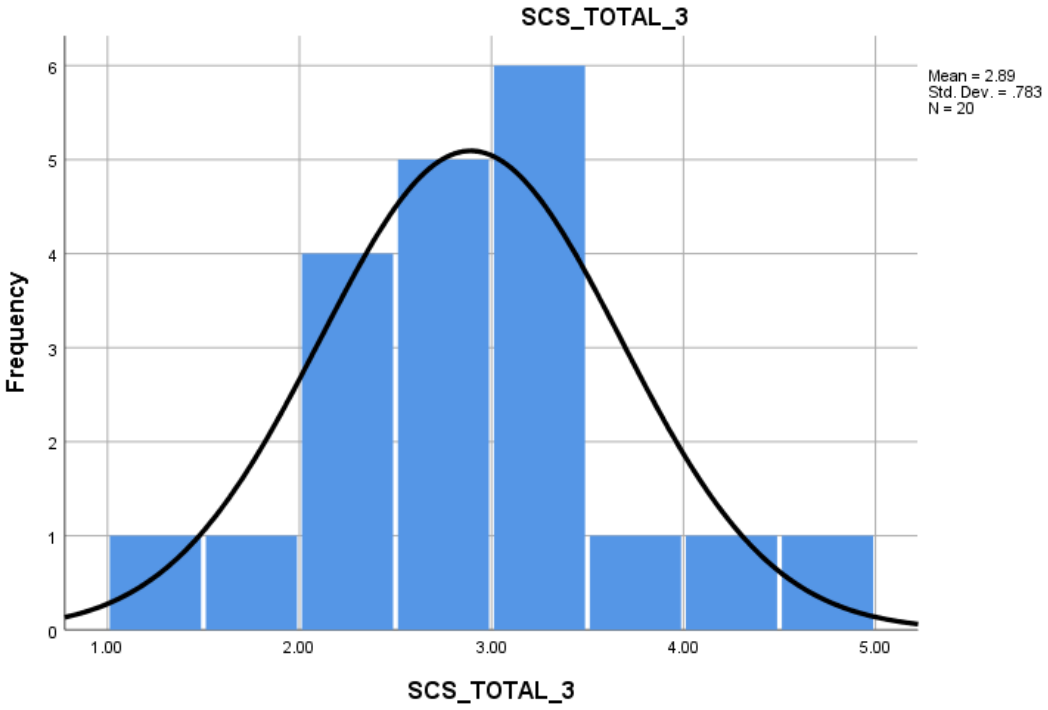

SJ_SUBSCALE_1
Mean = 2.08
Std. Dev. = .791
N = 74
Frequency
10
8
6
4
2
0
.00
1.00
2.00
3.00
4.00
5.00
SJ_SUBSCALE_1

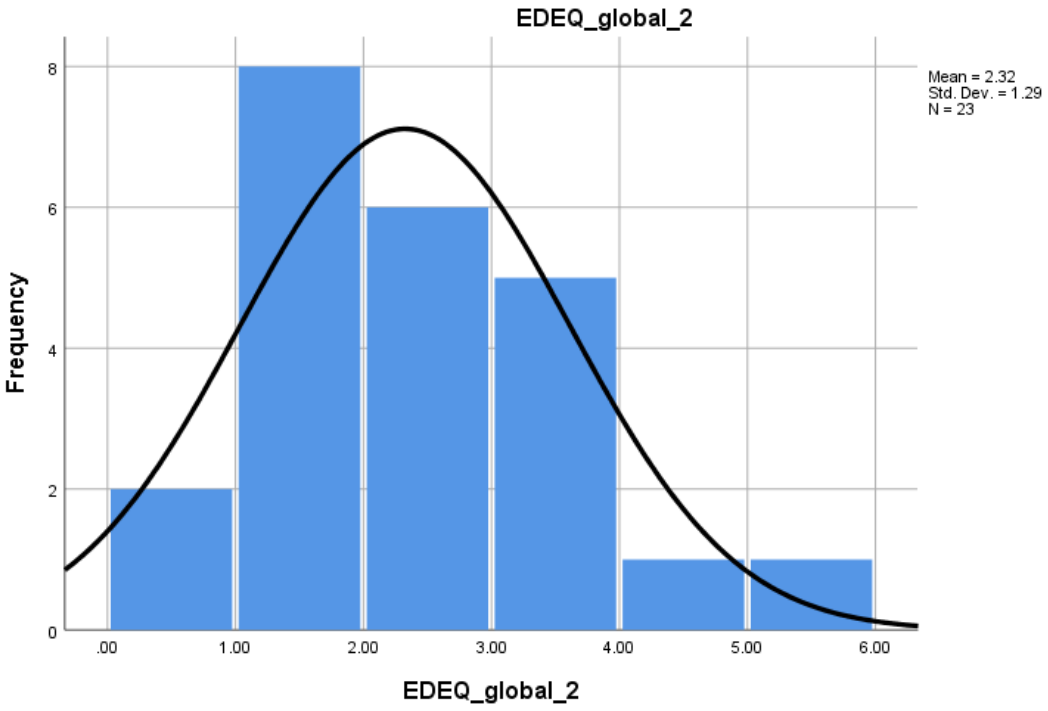

SCS_TOTAL_1
Mean = 2.45
Std. Dev. = .621
N = 74
Frequency
15
10
5
0
1.00
2.00
3.00
4.00
5.00
SCS_TOTAL_1

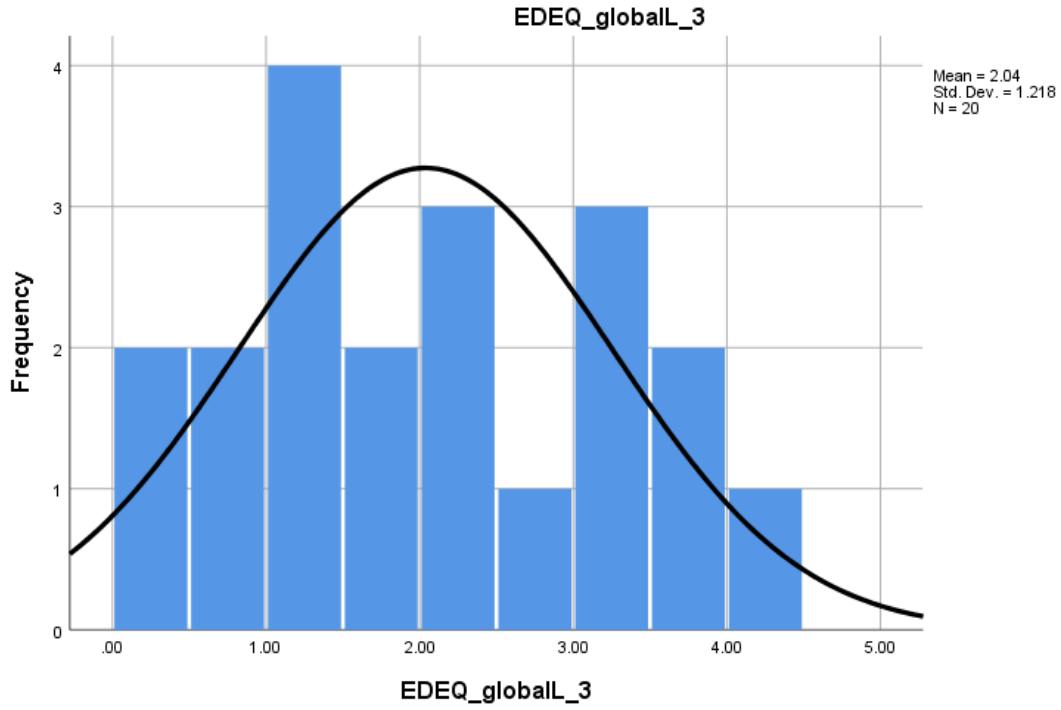

FSC_TOTAL_1
Mean = 20.95
Std. Dev. = 11.684
N = 74
Frequency
12.5
10.0
7.5
5.0
2.5
0.0
.00
20.00
40.00
60.00
FSC_TOTAL_1

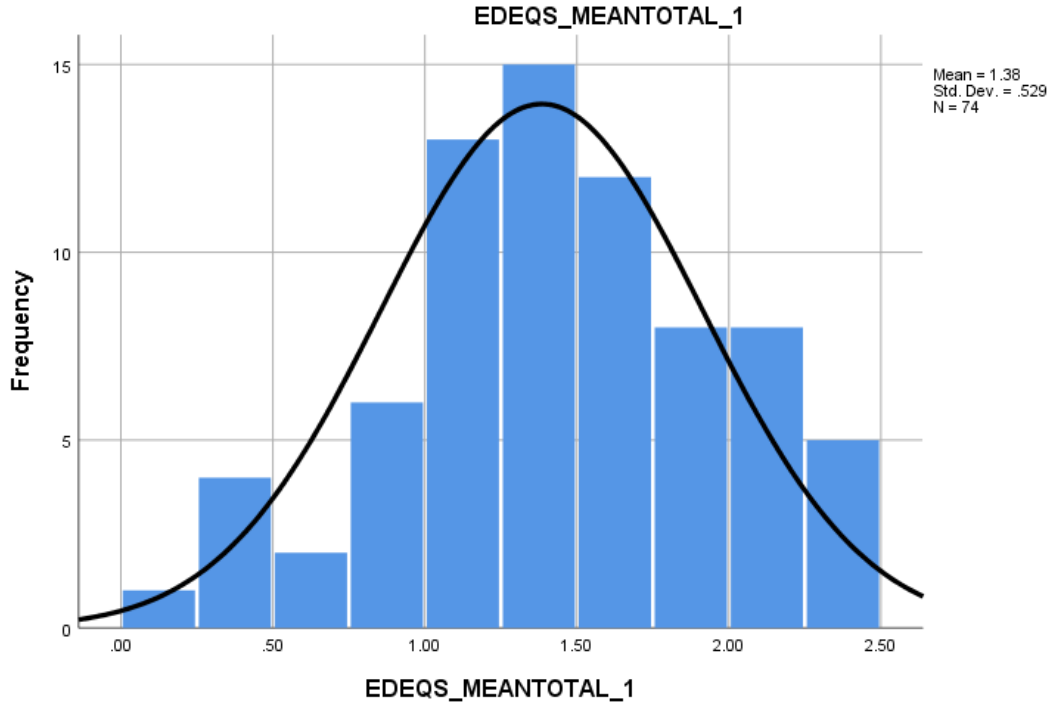

SCS_TOTAL_3
Mean = 2.89
Std. Dev. = .783
N = 20
Frequency
0
1
2
3
4
5
6
1.00
2.00
3.00
4.00
5.00
SCS_TOTAL_3

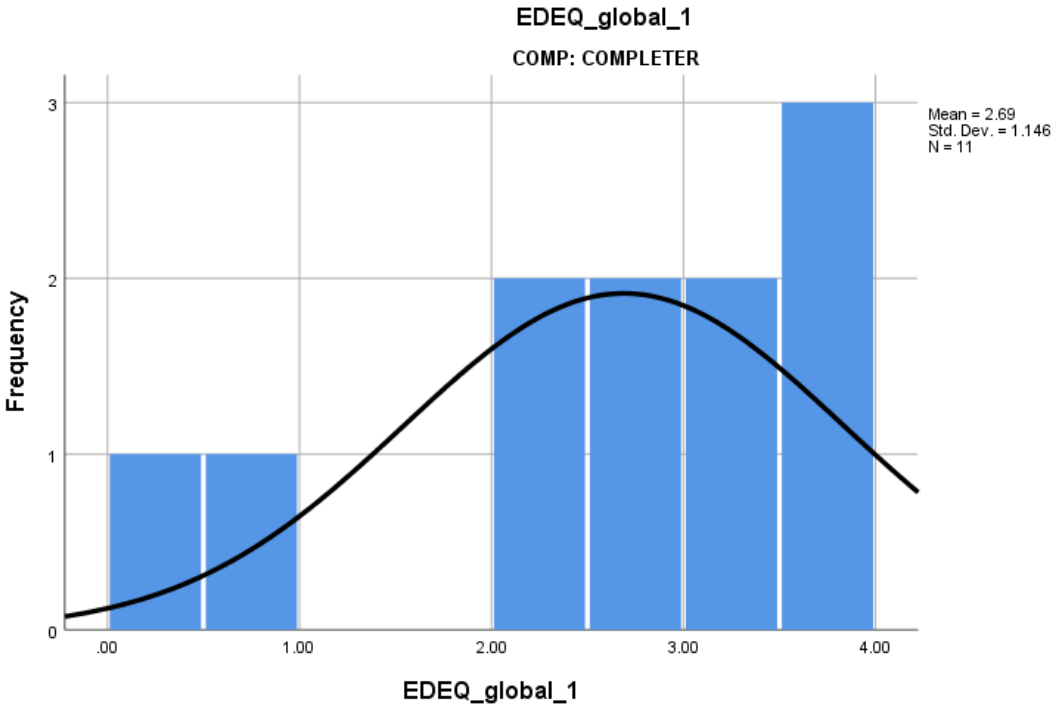

SCS_TOTAL_2
Mean = 2.69
Std. Dev. = .636
N = 23
Frequency
0
2
4
6
8
1.50
2.00
2.50
3.00
3.50
4.00
4.50
SCS_TOTAL_2

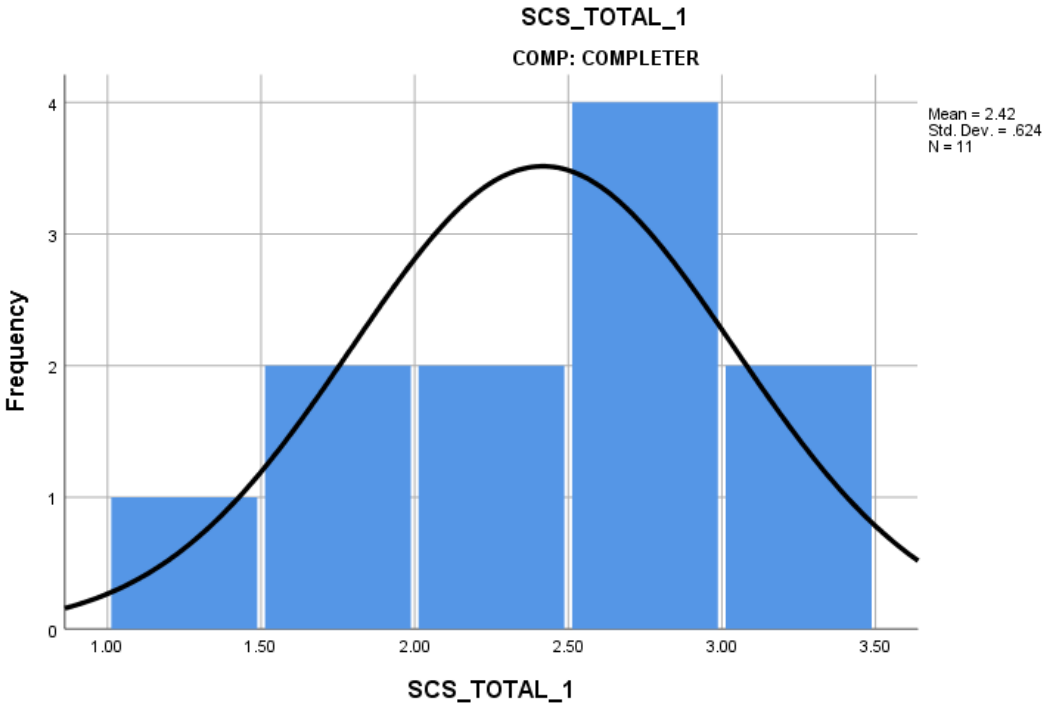

SCS_TOTAL_3
Mean = 2.89
Std. Dev. = .783
N = 20
Frequency
0
1
2
3
4
5
6
1.00
2.00
3.00
4.00
5.00
SCS_TOTAL_3

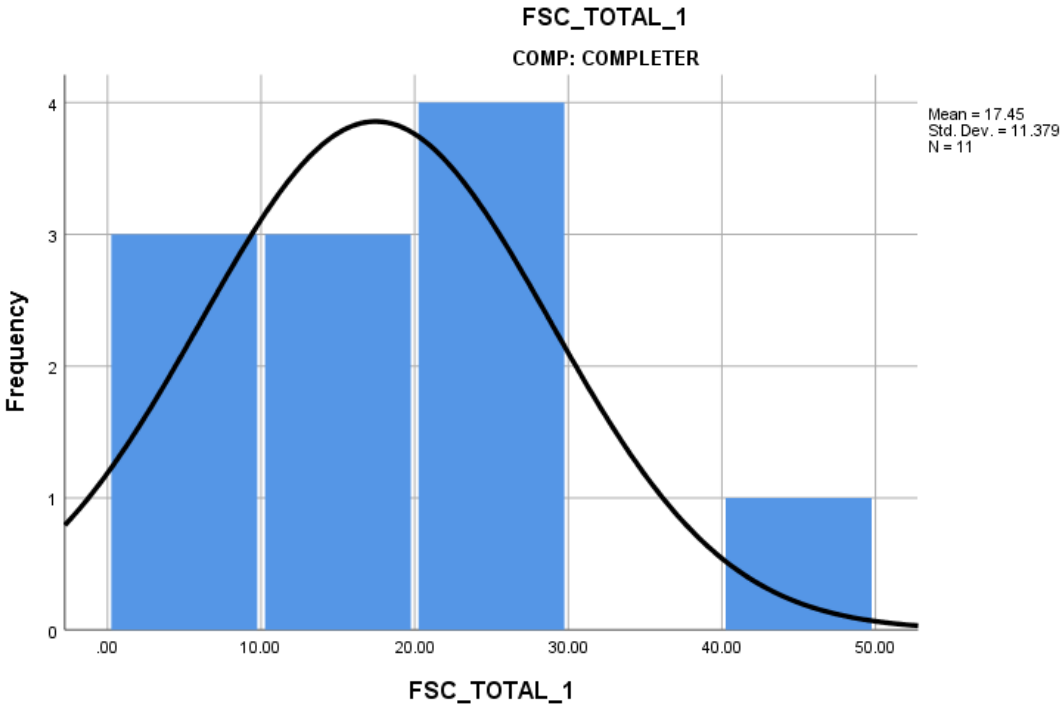

EDEQ_global_2
Mean = 2.32
Std. Dev. = 1.29
N = 23
Frequency
0
2
4
6
8
.00
1.00
2.00
3.00
4.00
5.00
6.00
EDEQ_global_2

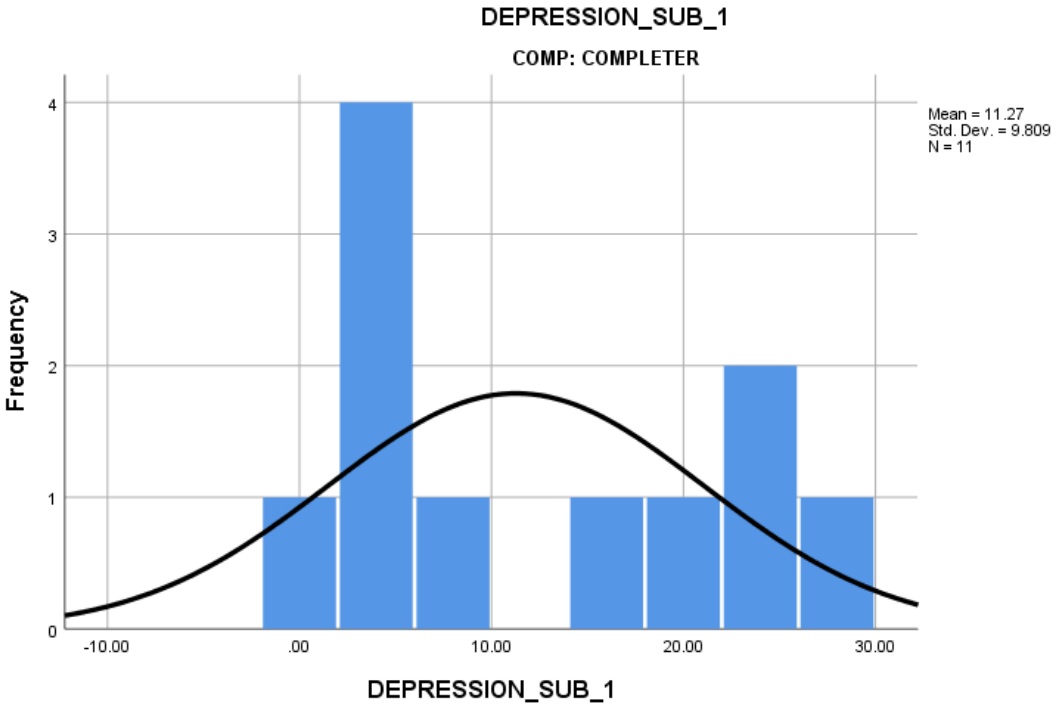

EDEQ_globalL_3
Mean = 2.04
Std. Dev. = 1.218
N = 20
Frequency
0
1
2
3
4
.00
1.00
2.00
3.00
4.00
5.00
EDEQ_globalL_3

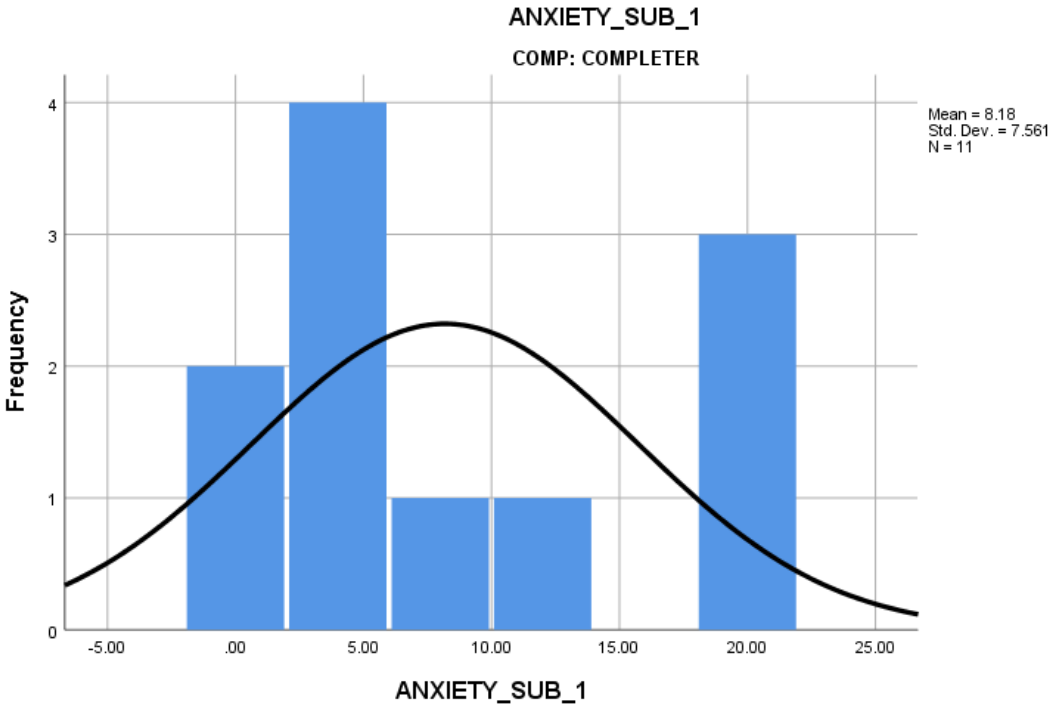

EDEQS_MEANTOTAL_1
Mean = 1.38
Std. Dev. = .529
N = 74
Frequency
0
5
10
15
.00
.50
1.00
1.50
2.00
2.50
EDEQS_MEANTOTAL_1

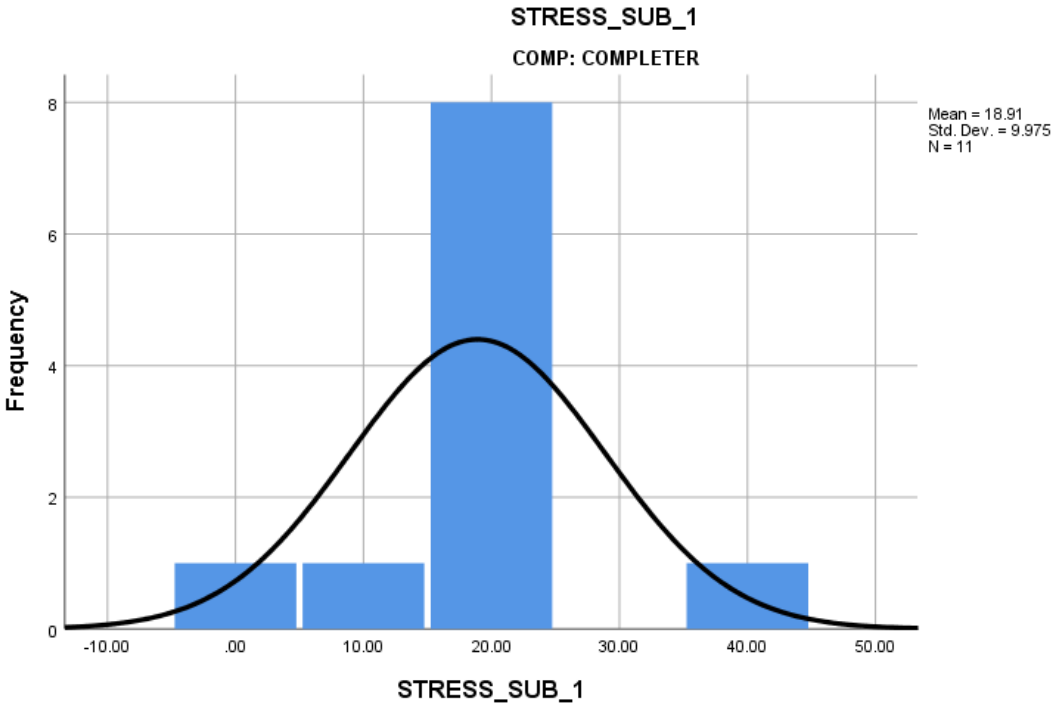

EDEQ_global_1
COMP: COMPLETER
Mean = 2.69
Std. Dev. = 1.146
N = 11
Frequency
0
1
2
3
.00
1.00
2.00
3.00
4.00
EDEQ_global_1

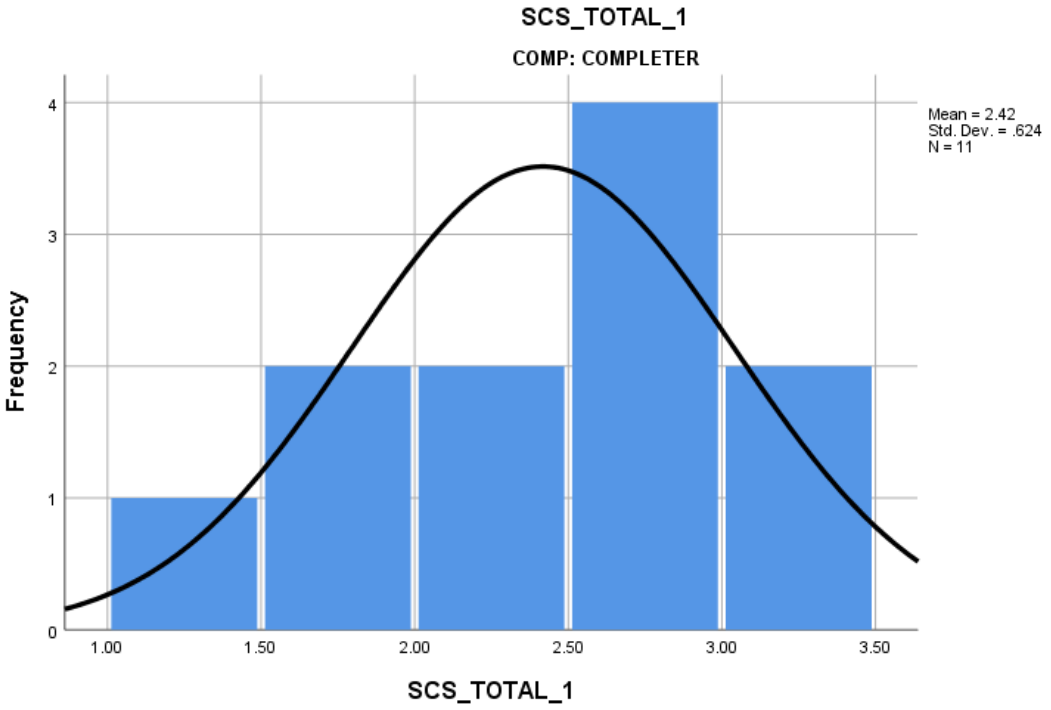

SCS_TOTAL_1
COMP: COMPLETER
Mean = 2.42
Std. Dev. = .624
N = 11
Frequency
0
1
2
3
4
1.00
1.50
2.00
2.50
3.00
3.50
SCS_TOTAL_1

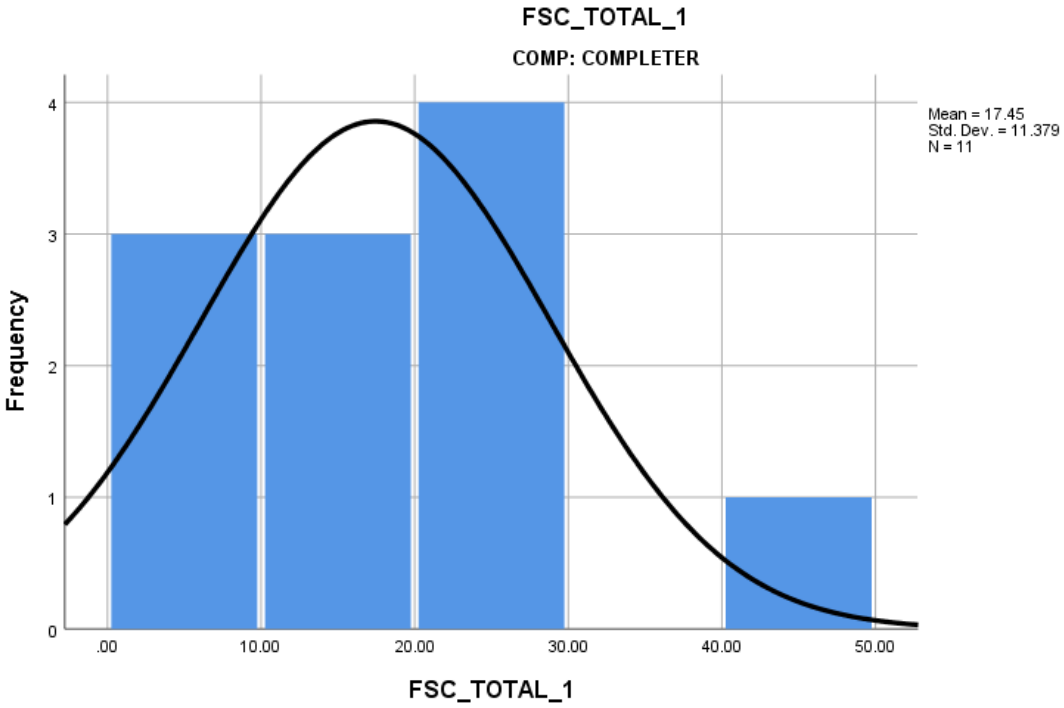

FSC_TOTAL_1
COMP: COMPLETER
Mean = 17.45
Std. Dev. = 11.379
N = 11
Frequency
0
1
2
3
4
.00
10.00
20.00
30.00
40.00
50.00
FSC_TOTAL_1

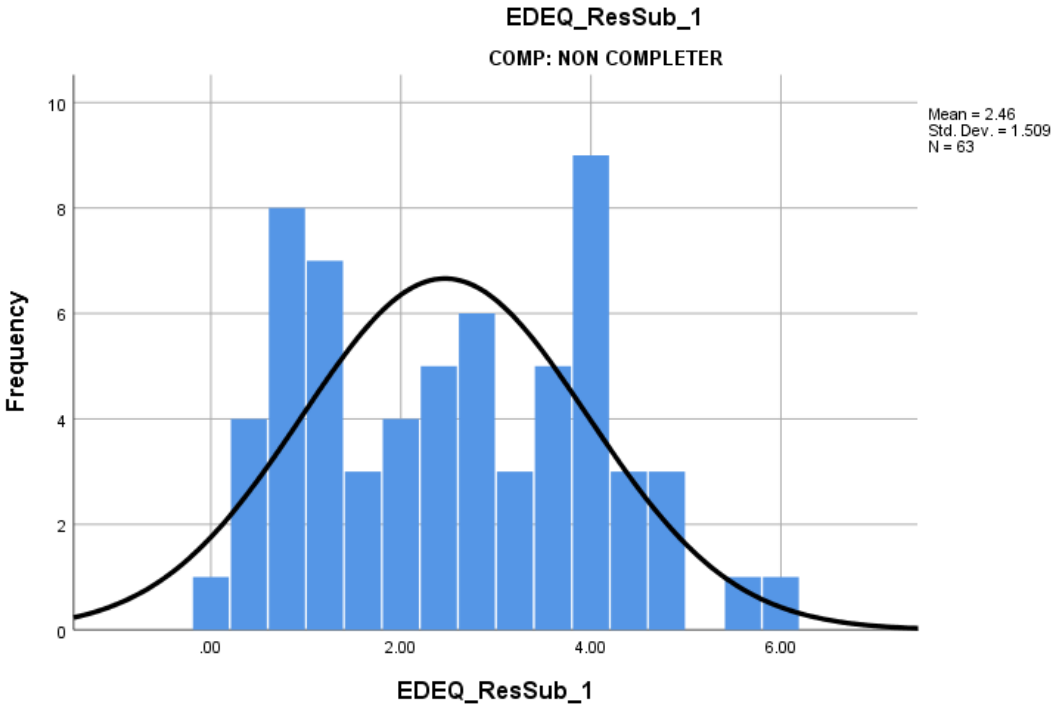

DEPRESSION_SUB_1
COMP: COMPLETER
Mean = 11.27
Std. Dev. = 9.809
N = 11
Frequency
0
1
2
3
4
-10.00
.00
10.00
20.00
30.00
DEPRESSION_SUB_1

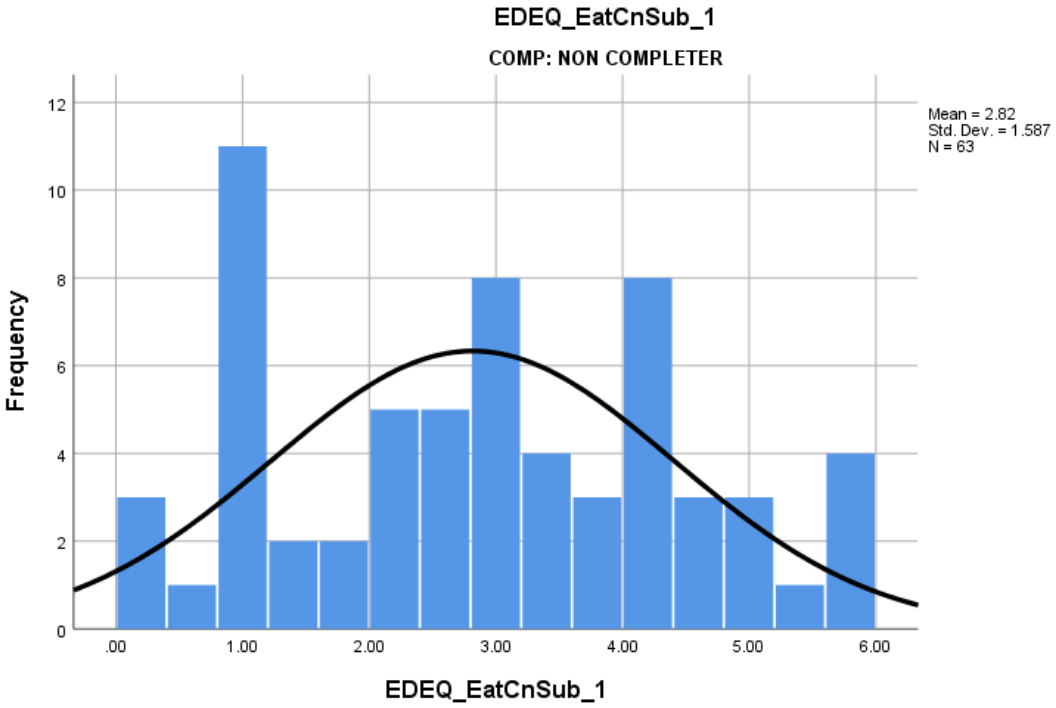

ANXIETY_SUB_1
COMP: COMPLETER
Mean = 8.18
Std. Dev. = 7.561
N = 11
Frequency
0
1
2
3
4
-5.00
.00
5.00
10.00
15.00
20.00
25.00
ANXIETY_SUB_1

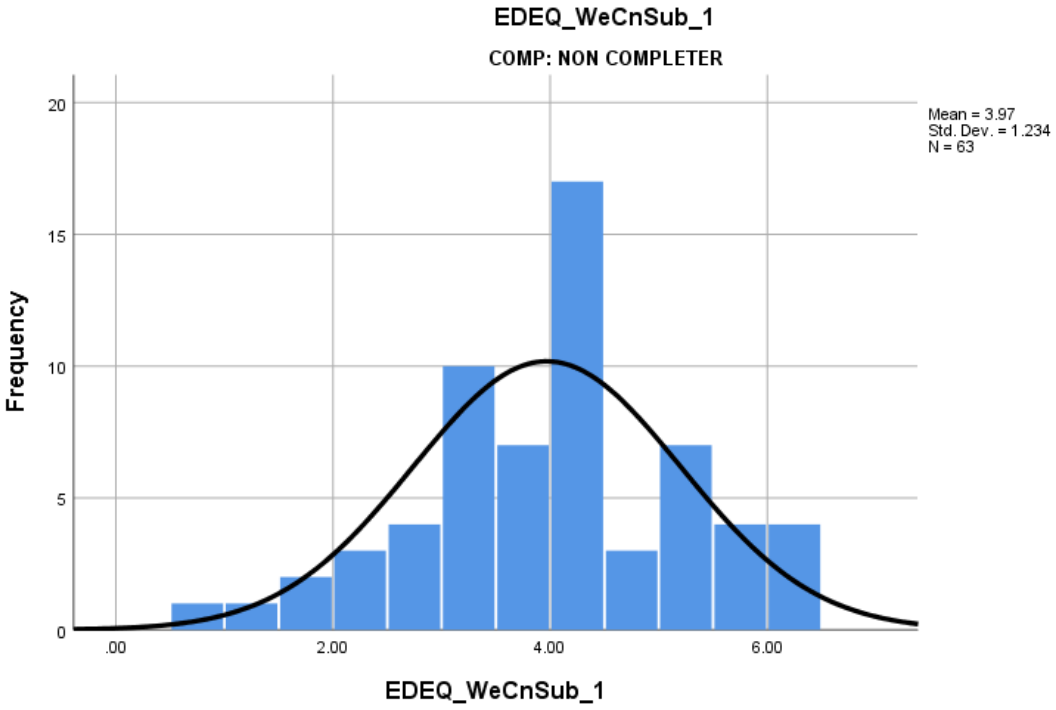

STRESS_SUB_1
COMP: COMPLETER
Mean = 18.91
Std. Dev. = 9.975
N = 11
Frequency
0
2
4
6
8
-10.00
.00
10.00
20.00
30.00
40.00
50.00
STRESS_SUB_1

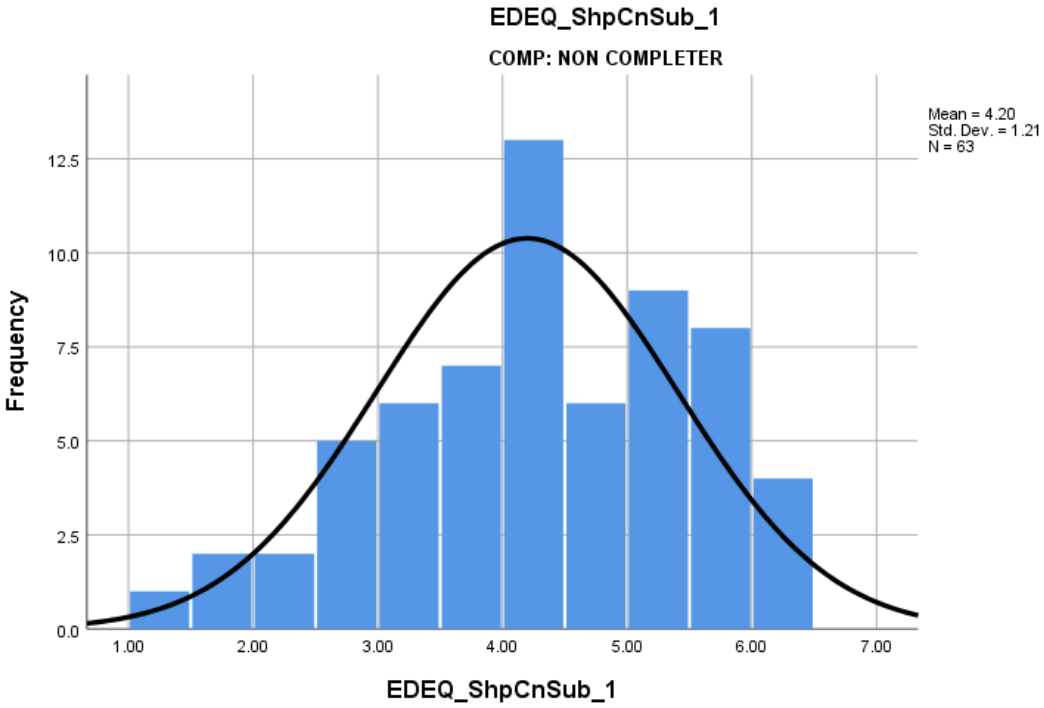

SCS_TOTAL_1
COMP: COMPLETER
Mean = 2.42
Std. Dev. = .624
N = 11
Frequency
0
1
2
3
4
1.00
1.50
2.00
2.50
3.00
3.50
SCS_TOTAL_1

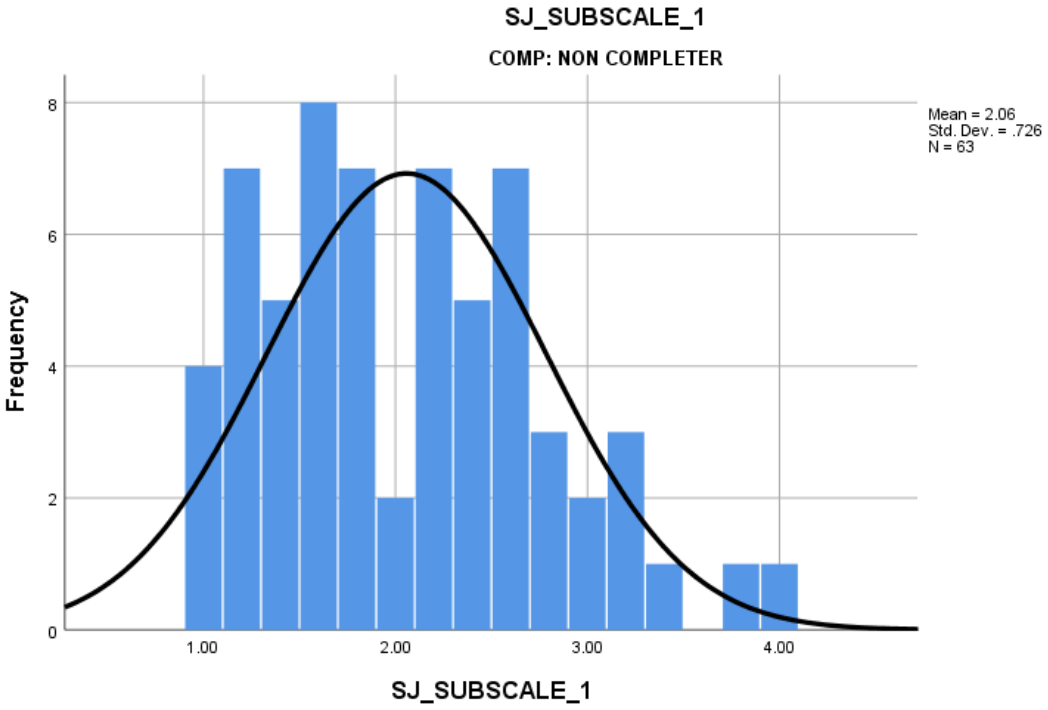

FSC_TOTAL_1
COMP: COMPLETER
Mean = 17.45
Std. Dev. = 11.379
N = 11
Frequency
0
1
2
3
4
.00
10.00
20.00
30.00
40.00
50.00
FSC_TOTAL_1

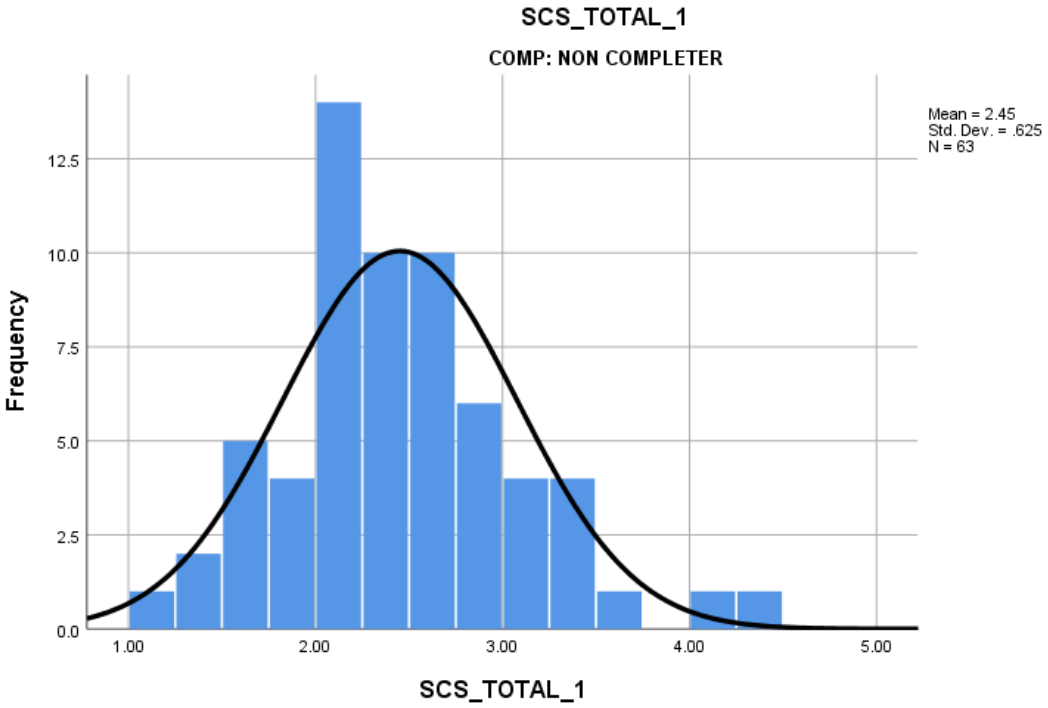

EDEQ_ResSub_1
COMP: NON COMPLETER
Mean = 2.46
Std. Dev. = 1.509
N = 63
Frequency
0
2
4
6
8
10
.00
2.00
4.00
6.00
EDEQ_ResSub_1

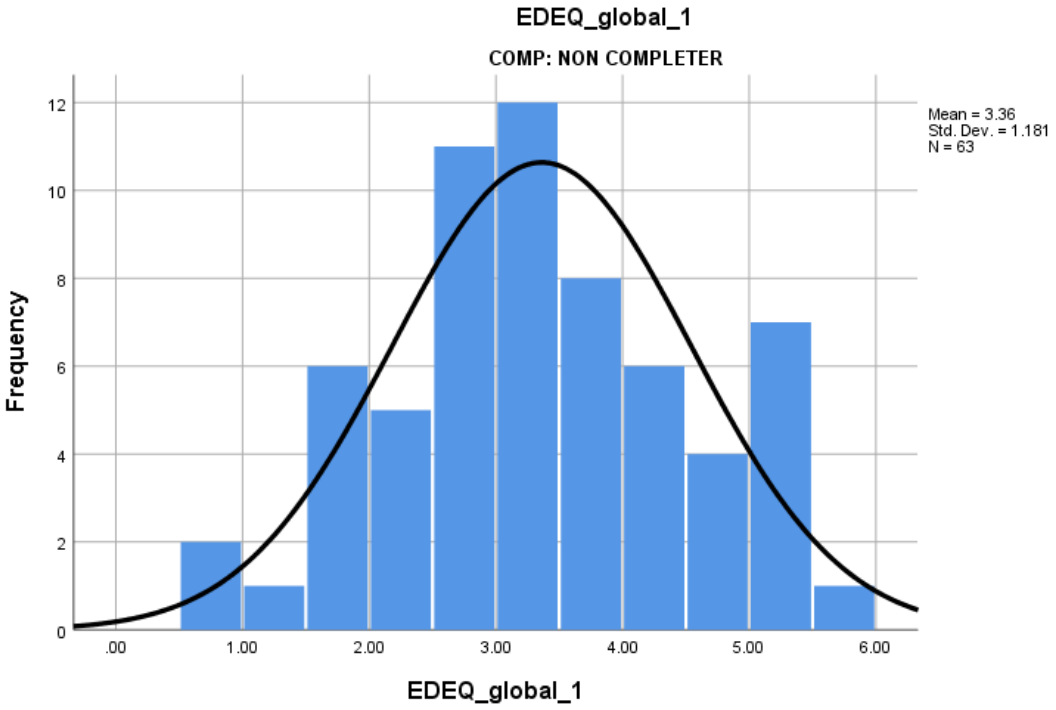

EDEQ_EatCnSub_1
COMP: NON COMPLETER
Mean = 2.82
Std. Dev. = 1.587
N = 63
Frequency
0
2
4
6
8
10
12
.00
1.00
2.00
3.00
4.00
5.00
6.00
EDEQ_EatCnSub_1

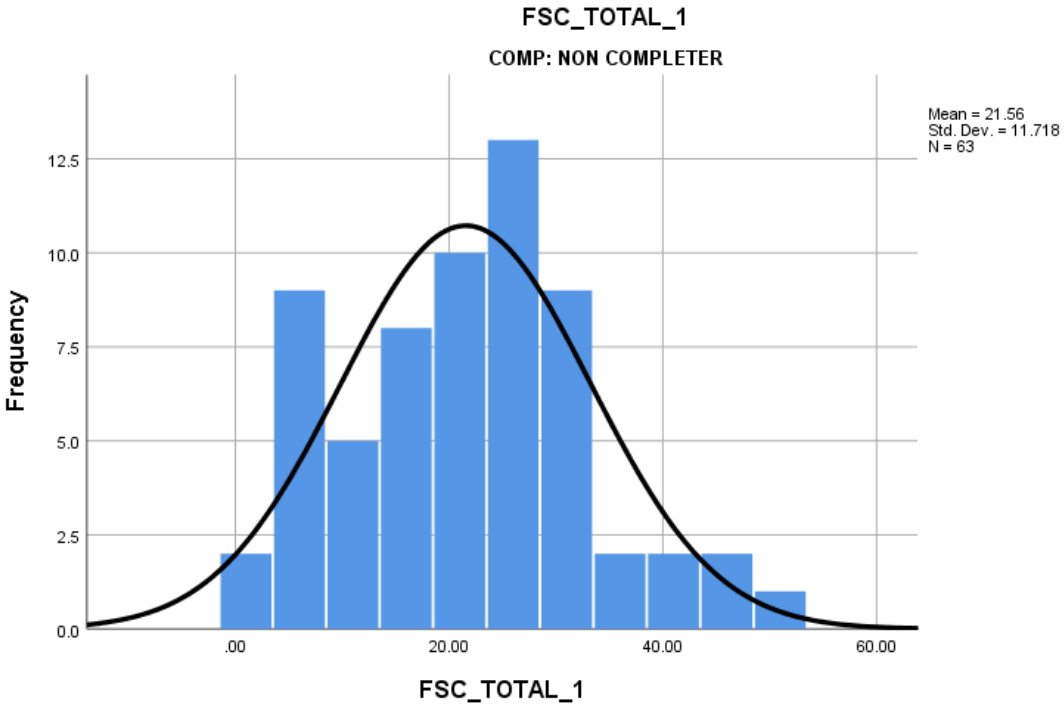

EDEQ_WeCnSub_1
COMP: NON COMPLETER
Mean = 3.97
Std. Dev. = 1.234
N = 63
Frequency
20
15
10
5
0
.00
2.00
4.00
6.00
EDEQ_WeCnSub_1


EDEQ_ShpCnSub_1
COMP: NON COMPLETER
Mean = 4.20
Std. Dev. = 1.21
N = 63
Frequency
12.5
10.0
7.5
5.0
2.5
0.0
1.00
2.00
3.00
4.00
5.00
6.00
7.00
EDEQ_ShpCnSub_1


SJ_SUBSCALE_1
COMP: NON COMPLETER
Mean = 2.06
Std. Dev. = .726
N = 63
Frequency
0
2
4
6
8
1.00
2.00
3.00
4.00
SJ_SUBSCALE_1


SCS_TOTAL_1
COMP: NON COMPLETER
Mean = 2.45
Std. Dev. = .625
N = 63
Frequency
0.0
2.5
5.0
7.5
10.0
12.5
1.00
2.00
3.00
4.00
5.00
SCS_TOTAL_1


EDEQ_global_1
COMP: NON COMPLETER
Mean = 3.36
Std. Dev. = 1.181
N = 63
Frequency
0
2
4
6
8
10
12
.00
1.00
2.00
3.00
4.00
5.00
6.00
EDEQ_global_1


FSC_TOTAL_1
COMP: NON COMPLETER
Mean = 21.56
Std. Dev. = 11.718
N = 63
Frequency
0.0
2.5
5.0
7.5
10.0
12.5
.00
20.00
40.00
60.00
FSC_TOTAL_1