Examining Shame, Self-Compassion and Eating Behaviour In Treatment-Seeking Obese Adults: A Cross Sectional Study

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by

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Declaration

I confirm that the literature review and research contained within this thesis are my own and not submitted for any other academic award.

Examining Shame, Self-Compassion and Eating Behaviour In Treatment-Seeking Obese Adults: A Cross Sectional Study

By Sarah Lockley

Thesis Abstract

Obesity and weight-management is primarily focused on improving diet, nutrition and activity levels. Some research suggests that psychological interventions may have a role in weight-management. This thesis sought to better understand whether there is a role for the use of psychological approaches in obesity.

Literature Review

A review of literature examining the efficacy of cognitive-behavioural therapy (CBT) as a treatment for weight management was conducted. Ten quantitative studies were included in the review. The evidence showed that CBT had a positive effect on weight-loss in both short and long-term studies and was superior to treatment as usual, minimal or no treatment conditions. The literature was critically appraised and clinical implications were discussed.

Research Report

The empirical paper examined the role of self-conscious emotions, such as shame, self-esteem and self-compassion along with psychological distress. These have emerged as important factors in the development and maintenance of eating disorders. These were investigated with regards to their relationship with eating behaviours (emotional eating, uncontrolled eating and restraint), as well as eating disorder psychopathology in a clinically obese population.

Treatment-seeking obese adults (N=53) were recruited from a dietetic clinic and a range of psychometric measures completed. High levels of shame, distress and eating disorder psychopathology were shown when compared to other non-clinical populations. Results showed high levels of uncontrolled eating, and emotional eating. Internal shame was shown to have a unique contribution in the explanation of emotional eating. A number of significant positive correlations were found with shame, including emotional and uncontrolled eating. Although the sample size was small, the results indicated that shame might have an important role in eating behaviours. Psychological interventions addressing self-conscious negative emotions may be useful in weight management interventions.

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Literature Review

By Sarah Lockley

A Review of The Effectiveness of Cognitive Behavioural Therapy for Weight-management in Obesity

A **Review of The Effectiveness of Cognitive Behavioural Therapy for Weight-management in Obesity**

1.Abstract

1.1 Objectives

The overall objective was to update current literature on psychological therapies for weight-management, focusing specifically on CBT. The review aimed to examine the efficacy of cognitive behavioural therapy as a treatment for weight-management for overweight and obesity.

1.2 Method

The search was conducted by hand, using six databases: Psychinfo, The Cochrane Library, Pubmed, Wiley, Science Direct and Web of Science. Studies between 2000 and 2012 that compared CBT for weight-management with either minimal or no treatment, or treatment as usual were selected. Inclusion and exclusion criteria were applied to the identified literature.

1.3 Results

10 studies remained for inclusion in the review. All studies examined a CBT intervention for weight-management for overweight or obesity. The evidence showed that CBT had a positive effect on weight-loss in both short and long-term studies, and group and individual interventions. This was superior to treatment as usual, minimal or none treatment conditions.

1.4 Conclusion

The results supported previous findings and indicated that CBT had a positive effect on weight-loss. Health care providers should therefore consider CBT as a treatment to complement traditional weight control methods to optimise weight-loss outcomes.

2. Introduction

Obesity is a chronic condition that is an increasing concern for health care providers. It is in most cases preventable and does not happen rapidly. For most cases it is caused by a prolonged period of in-balance between calories consumed and calories expended (World Health Organisation, 2004). However, due to the treatment resistant nature of the condition, it is clear obesity is a complex problem.

A holistic approach has been considered helpful for weight-management. This includes considering psychological factors, genes, neurobiology, family structure and influences, social context, social norms, the environment, markets and public policy (Hammond, 2009). This review focused on evaluating the evidence for the efficacy of cognitive behavioural therapy (CBT) for the treatment of obesity. The clinical context is first outlined, followed by a discussion of the current treatments for obesity and finally the rationale for examining CBT and previous reviews that have been conducted.

2.1 Clinical context

Obesity prevention and management is a pressing public health priority. 62.8% of adults were classified as overweight or obese in England (Health Survey for England, 2010). Worldwide obesity is reported to have doubled since 1980 (WHO). Projected trends have predicted 65 million more obese adults in the US, and 11 million more obese adults in the UK by 2030 (Wang, McPherson, Marsh, Gortmaker, & Brown, 2011). Obesity is particularly problematic due to the associated risks of other medical conditions. Additional cases of diabetes are expected between 6 - 8.5 million by 2030. Heart disease and stroke are expected to increase by 5.7-7.3 million and additional

cases of cancer are estimated between 492000 - 669000 for the USA and UK combined (Wang et al., 2011).

In 2008 the Government's 'Healthy Weight, Healthy Lives' strategy highlighted their aims to reverse the rising trend in overweight and obesity levels. The strategy highlighted the commitment to building the evidence base on effective approaches to obesity and investing in well-targeted research.

2.2 Treatments for obesity

NICE (2006) recommended multi-component interventions for treating obesity. This included behavioural interventions, increasing physical activity, dietary advice, pharmacological interventions and surgical interventions for people with morbid obesity. Conventional treatment for obesity involves the prescription of an energy-reduced diet to achieve weight loss, however weight losses are typically 3% or less (Rapoport, Clark, & Wardle, 2000).

A systematic literature review of randomised controlled trials demonstrated that exercise as a means of weight loss produced small weight losses. However, when combined with diet, greater weight loss was achieved (Shaw, Gennat, O'Rourke, & Del Mar, 2006).

Pharmacological interventions are also used for weight-management. A meta-analysis of long-term pharmacological trials for weight loss demonstrated patients on active drug therapy were significantly more likely to achieve 5% and 10% weight loss thresholds (Padwal, Rucker, Li, Curioni, & Lau, 2009).

A trans-theoretical model of behaviour change has also been proposed for weight-management. This model proposed that health behaviour change involved progressing through stages of change (Prochaska & Velicer, 1997). Evidence

suggested this model is effective for weight-management when combined with physical activity, diet and other interventions (Tuah et al., 2012).

2.3 CBT for obesity

The implementation of government initiatives has enabled more people to access CBT (DoH, 2011). It has been shown to help people with both mental (NICE, 2009) and physical health conditions (Lamb et al., 2010, Burgess, Andiappan, & Chalder, 2011). Subsequently there has been a rise in research conducted in this area.

CBT has also been favoured for its versatility. A variety of professionals have been trained to deliver CBT techniques. It is used in a wide variety of formats ranging from workbooks, telephone appointments, face-to-face therapy and computerised CBT. These methods are appealing as individuals can receive tailored individualised treatment. There are also graded levels of intensity at varying levels of expense to health services. For these reasons, it is worthwhile establishing the effectiveness of this treatment for obese populations.

2.4 Previous reviews of CBT and psychological interventions for obesity

There are currently no published systematic reviews specifically for CBT as an intervention for obesity. A recent systematic review investigated the effects of interactive computer-based interventions for weight loss or weight maintenance in overweight or obese people (Wieland et al., 2012). The majority of the interventions had a strong behavioural component to them, including setting goals and self-monitoring. The evidence suggested computer-based interventions were more effective than no treatment, but less effective than face-to-face interventions. The authors

highlighted this was important evidence for service providers as most have few options to offer to their patients.

A systematic review was conducted on psychological interventions for overweight and obesity (Shaw, O'Rourke, Del Mar, & Kenardy, 2005). Both behaviour therapy and CBT, when combined with diet and exercise intervention increased weight loss compared with diet and exercise alone. Further to this, increasing the intensity of the behavioural intervention significantly increased weight reduction. Although NICE (2006) recommended behavioural interventions, and the guidelines also refer to cognitive restructuring, they do not specifically recommend CBT as an intervention.

2.5 Rationale and aims

The place of CBT as a treatment for obesity was unclear from reading the literature. Although reviews existed on general psychological interventions for obesity (Shaw et al., 2005) and behavioural programs (Wieland et al., 2012), there was a gap for a review that focused solely on CBT. As the CBT literature has increased markedly over time, it was considered important to provide a review of this research.

The aim of this review was to assess the efficacy of CBT interventions for the treatment of overweight or obesity. This differed to past reviews in that it focused on one type of psychological approach. This enabled the role of CBT to be evaluated independent of other therapies, therefore providing wider knowledge for practitioners, services and researchers. As the commissioning and provision of health care services are dynamic and changeable, it was considered important to understand the evidence base in this area, and consider clinical and research implications.

3. Method

3.1 Search terms and methods

The initial phase of the search involved scoping the literature to identify whether the review was warranted. This also informed the inclusion and exclusion criteria. For example, it was found there was a wealth of research that used a population with binge-eating disorder but also many papers that used non-clinical populations. Details of the inclusion criteria are in Section 3.2.

The NICE (2006) guidelines for obesity were studied to review the language used to help inform the search terms. The scoping exercise also helped generate further ideas. For example, noticing American spelling such as the word 'behavioural'. The final search terms are detailed in Table 1.

The literature search was carried out using six databases: Psychinfo, The Cochrane Library, Pubmed, Wiley, Science Direct and Web of Science, between May 2012 and September 2012. In addition the reference list of relevant articles were scanned to identify further literature. An expert in eating disorders was contacted regarding any other relevant literature.

Table 1. Key Word Searches

Cognitive behav* AND obesity
Cognitive behav* AND weight AND loss
Cognitive behav* AND weight AND management
Cognitive behav* AND overweight
Cognitive behav* AND weight AND gain
Cognitive behav* AND body mass index
Cognitive behav* AND diet

3.2 Inclusion and exclusion criteria

The following inclusion and exclusion criteria were applied to the search:

3.2.1 Criteria for study type

Studies were selected if they were randomised controlled trials (RCTs), quasi-randomised controlled trials or quasi-experimental studies. This was decided because randomised controlled trials minimise allocation bias and aim to reduce confounding variables. The criteria were extended to include quasi-randomised and quasi-experimental studies as these provided a realistic compromise between reaching the 'gold standard' of research, whilst balancing the practicalities of research.

Studies were required to measure weight or weight change as a primary outcome (e.g. BMI or body weight). None was excluded due to dropout rates as high attrition has been found to be common in obesity intervention studies (Stunkard, 1992). All languages were considered providing a translated copy of the article was available in English. Only peer review articles were included and the full article needed to be accessible. Studies were included if they were published from the year 2000 onwards, and were quantitative in type.

3.2.2 Criteria for types of participants

Studies were selected if they used an adult population, overweight or obese, of any gender. The diagnostic criteria for overweight included a BMI of 25kg/m^2 or above, as defined in NICE guidelines (2006). Studies were excluded if the main research population had co-morbid health conditions such as serious physical or mental health problems. This was to ensure participants were able to utilise the interventions and so were not restricted by other factors (e.g. poor appetite or limited mobility). Studies

were not excluded if their participants had manageable health conditions (e.g. diabetes), providing the sample had not been selected due to this common factor (e.g. all participants were diabetic). Those studies that primarily used a population with binge-eating disorder (BED) were excluded. Obese participants with BED were considered a distinct sub-group and not the population under investigation in this review. Studies were not excluded if some participants displayed binge-eating behaviour, or a minority of the population had BED.

3.2.3 Criteria for types of intervention

Studies were excluded if the primary purpose was not related to weight-management (e.g. smoking cessation). Both individual and group interventions were included. Studies were excluded if the intervention length was less than three months. Studies required one of the treatment conditions to be CBT. They were not excluded if the CBT condition also incorporated usual treatment for obesity, such as diet and nutritional advice and exercise. However, they were excluded if the CBT condition was combined with another intervention not usually prescribed for the treatment of obesity (e.g. acupressure).

All studies required a control condition, minimal intervention or a 'treatment as usual' intervention as a comparative condition to CBT. Those that combined a pharmacological intervention with a psychological intervention were excluded. This was due to the effects of pharmacological interventions on weight, and potentially outweighing the effect of the psychological intervention.

3.3 Data collection and analysis

A flow-chart of the data collection process is represented in Figures 1- 2. Data collection involved scanning the titles and abstracts of records that were returned following the key word searches. Potential articles were sent to reference organisation software (Refworks) for more rigorous reviewing.

Duplicates from the searches were then removed. The remaining articles were scanned again and abstracts read to assess suitability. Criteria guiding selection at this stage involved excluding articles if they were a literature review, used qualitative methodology, investigated binge-eating disorder, and non-CBT interventions. However articles that mentioned a psychological therapy were not excluded so that the nature of the therapy could be examined further.

3.4 Shortlisting

156 articles remained after the first stage of data collection. Inclusion and exclusion criteria were applied to all of the articles (see Figure 2). Where details of the study were ambiguous the full texts were retrieved and examined. 32 full text articles that appeared to fit the inclusion criteria were thoroughly examined. Where necessary, articles were ordered if permission was not readily attainable.

The largest proportion was excluded due to the design of the study not being an RCT, quasi-randomised or quasi-experimental (65). Further duplicates were found (16), some were articles that the software had not identified as duplicates, and some were different articles from the same study. Nine were excluded because their primary outcome was not investigating weight or weight change.

Eight were excluded because the participants used had a binge-eating disorder. 15 articles were excluded because the intervention was not CBT. Studies were excluded if cognitive-behavioural strategies were mentioned but the intervention was based on a different theory (e.g. Self-Determination Theory). 15 papers were excluded due to the sample population not being appropriate (e.g. smoking population, diabetic population).

Four were excluded because their primary aims were not investigating the efficacy of CBT and weight-management. Seven studies were excluded because they involved pharmacological interventions. Seven were excluded because there was no control group, minimal intervention (such as a workbook) or treatment as usual with which to compare the CBT intervention. The final number of studies eligible to be included in the review was 10 articles.

3.5 Data synthesis and appraisal

The final 10 articles were examined and data were extracted into a table (see Appendix A and B) that outlined salient features and results of each study. The design was informed by guidance from the Cochrane Handbook for Systematic Reviews of Interventions (2009). Details included the design, duration of intervention, attrition, country of origin, type of sampling, number, age and gender of participants, weight entry criteria, exclusion criteria, intervention type, follow-up period, outcomes and results.

A quality appraisal was then conducted. This was informed by the 'Cochrane Collaboration's tool for assessing risk of bias' (Higgins & Altman, 2008). This involved establishing whether the intervention was standardised, examining group differences, the external validity, equal sized groups, whether random sequence

generation was used, establishing allocation concealment, blinding procedures and the extent of incomplete outcome data. This data were entered into a table (see Appendix C). A 'risk of bias summary figure' informed by the Cochrane approach is shown in Table 3 of the Results.

A narrative description was chosen to synthesise the data. A meta-analysis was not conducted because of the heterogeneous nature of the studies (e.g. differences in interventions and controls) and to ensure important distinctions among outcomes were not obscured (Cooper, 2009).

Figure 1. Study flow diagram: Initial searching phase

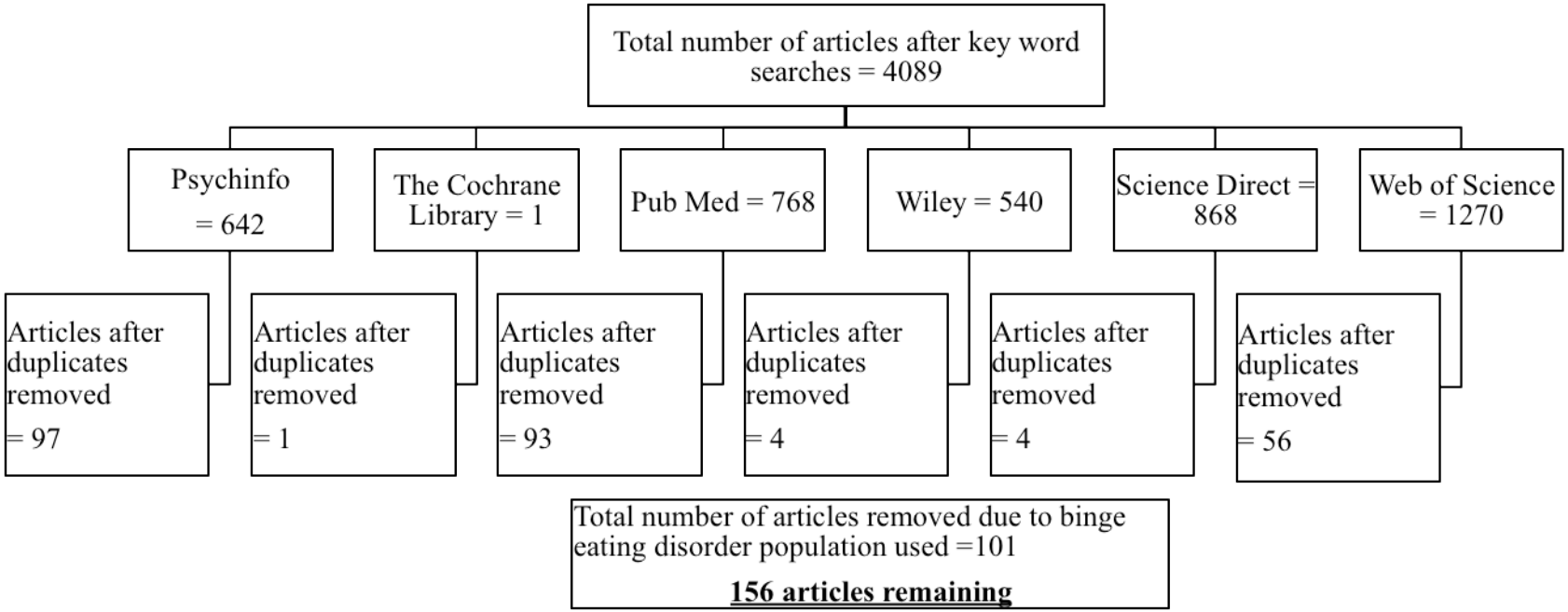
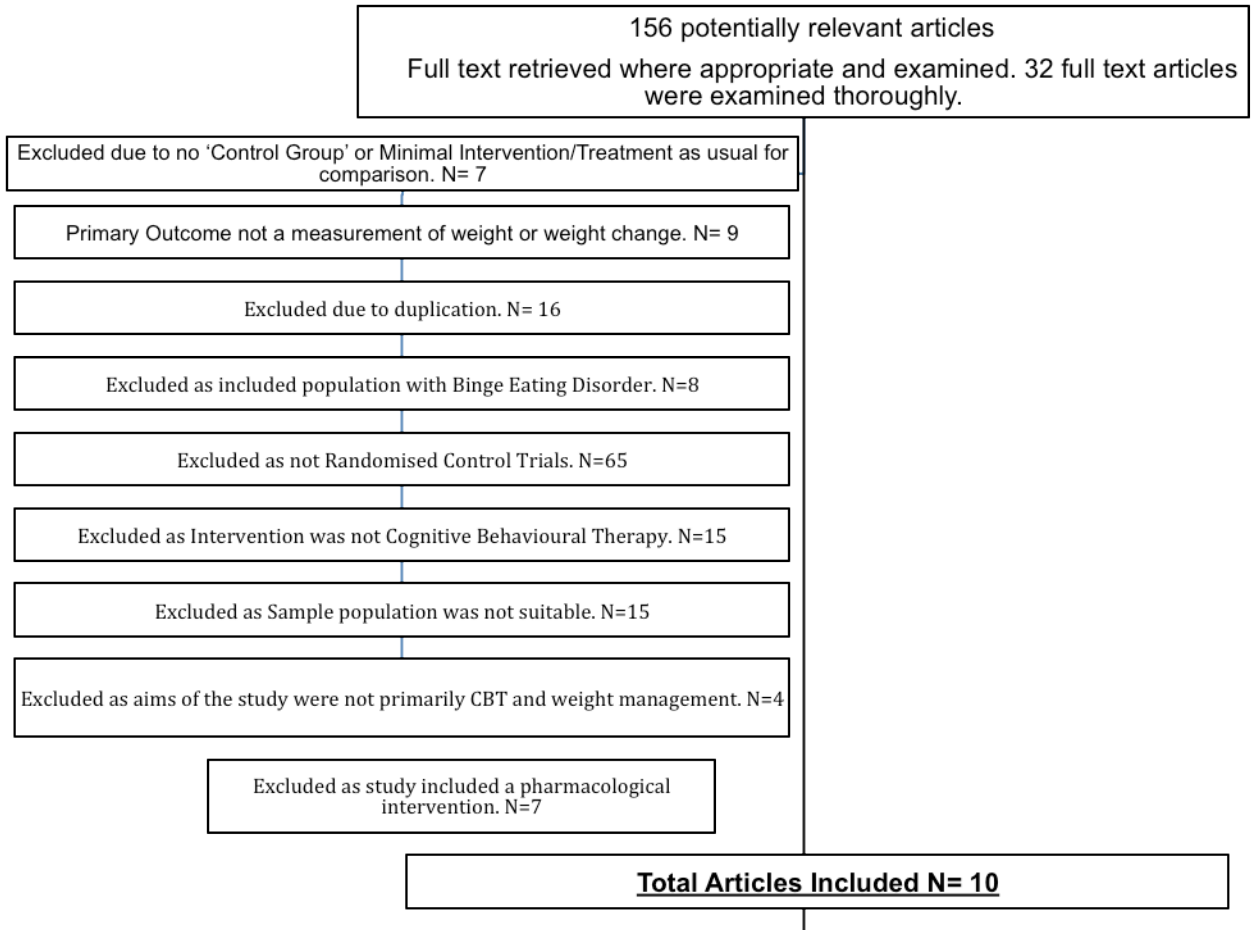


Figure 2. Study flow diagram: Short-listing phase



4. Results

4.1 Details of included studies

Following the initial searching phase (Figure 1) and the short-listing phase (Figure 2) 10 studies were included in the review. Their characteristics are summarised in Appendix A and B. The studies were conducted in mainly Western countries. The year of publication ranged from 2001 to 2012. All were accessible in English and were from peer-reviewed journals. All investigated weight loss.

4.1.2 Treatment setting

Trials varied in terms of their setting; two were conducted in community settings, four in outpatient settings, one at a workplace (that was also a health organisation), and the setting was unclear for three studies. Three of the ten trials were multi-site studies, for two it was unclear.

4.1.3 Participants

A total of 2261 participants were involved in the trials, 741 were in a control group, minimal intervention or treatment as usual condition. Samples ranged from 98 to 598 participants. One study had a sample of less than 100, five had between 100 and 149, and four had 150 or above participants. Half of the trials used female only participants and half used both males and females.

4.1.4 BMI inclusion criteria

The primary inclusion criterion for participants was to have a BMI that indicated overweight or obesity. This definition varied between trials. Six trials stipulated a BMI of 30kg/m^2 or more (Studies 1, 2,3,4, 7 and 9) one trial 27kg/m^2 or more (Study 5) and one trial stipulated 25kg/m^2 or more (Study 8). Study 6 required a BMI of 25kg/m^2 or above or a body fat percentage of 33 or more (participants aged between 18 and 40yrs) or 34 or more (participants aged 40years and above). Lastly Study 10 included participants with either a BMI of 25 or above, or 24 and above plus one risk factor for cardiovascular disease.

4.1.5 Design

Seven studies were RCTs. Study 7 was a quasi-experimental design (random assignment was not available; the control group's data were collected at a different time point to the data collected in the treatment condition). Studies 8 and 9 were quasi-randomised trials (the method of allocating participants to different groups was not truly random). This is described further in Section 4.4.1.

4.1.6 Interventions

Summaries of the interventions are described in Appendix A and B. The shortest intervention was 18 weeks and the longest was 12 months. The trials differed with regards to the type of comparison group used against the intervention. These varied between using one or more of the following: dietary advice, exercise, guided self-help, an information book, behaviour therapy or no treatment. The number of treatment arms also varied between studies; half of the trials had two conditions, four had three and

one had four. Four of the studies used individual CBT interventions, five were group-based, and one used a combination. These details are summarised in Table 2.

Table 2. Summary of interventions

Arms In Trial	**Study**	**Comparison Groups**	**CBT Format**
One	1	CBT + Exercise + Nutrition Vs Exercise + Nutritional	Individual
Two	6	CBT+ Exercise + Nutrition Vs Diet + Nutritional	Group
	7 & 9	CBT + Exercise + Dietary Advice Vs No Treatment	Group
	8	CBT + Exercise + Dietary Advice Vs Exercise + Dietary Advice	Group
Three	4	Guided CBT Self-help Vs Minimal Guided CBT Vs No treatment	Individual
	2	CBT + Dietary Advice Vs Guided Self Help +Dietary Advice Vs Behavioural Therapy + Dietary Advice	Individual
	5	Nutritional Book + CBT Vs Nutritional Book + Dietary + Exercise Vs Nutritional Book	Group
	10	Book (diet & exercise, CBT) Vs Book + CBT Computer Intervention Vs CBT Book + CBT Computer Intervention + CBT Staff Consultation	Individual & Group
Four	3	CBT + Exercise + Nutrition Vs Exercise + Nutrition	Individual

4.1.7 Outcomes

All of the studies measured body-weight (kilograms or pounds). Other outcome measures varied including BMI, waist circumference, weight-change or body fat composition. Only three studies measured participants' diet or eating behaviour. Five studies measured psychopathology or general psychiatric features. Three measured

self-efficacy and four measured quality of life or life-satisfaction. The constructs measured across all studies are detailed in Appendix D.

4.1.8 Timings of outcome measurement

There was one short-term study, seven medium-term and two long-term studies. Outcomes assessed at a four-month follow-up period or less were defined as short-term, outcomes 4-12 months were defined as medium-term, and those greater than 12 months follow-up were described as long-term.

Overview of findings

To help summarise the findings, the studies have been grouped by intervention format (individual or group). The outcomes for weight loss, attrition, health and psychological outcomes are described. Four studies investigated individually based CBT interventions (Studies 1- 4, see Appendix A) and six were group-based CBT (Studies 5-10, see Appendix B).

4.2 Individual CBT for Weight-loss (Studies 1-4).

4.2.1 Effect of CBT on weight-management

All of the studies found those receiving CBT lost more weight than those in a control or minimal treatment condition. Study 1 found CBT showed significantly greater improvement in weight loss than the control condition. The mean weight loss after 24 weeks (end of treatment) for the CBT group was 2.73 kg, but only 0.5 kg for the control group (see Appendix E, Figure 2,).

Study 2 investigated the short and long-term effects of individual CBT, designed to minimise post-treatment weight regain. Behaviour therapy (BT) was used as one of the comparison conditions and guided self-help (GSH) (telephone calls) was used for a control group.

At the end of treatment (44 weeks) those in the BT group lost significantly more weight than those who received GSH. However there were no significant differences between CBT and GSH or CBT and BT groups. The mean weight losses were 5.24kg, 8.17kg, and 11.6kg for the GSH, CBT and BT groups respectively.

Mean weight losses at 36 months post-treatment did not reach significance levels. The results were 0.04 kg, 0.48 kg, 3.21 kg, for the GSH, CBT and BT condition respectively (see Appendix E, Figure 3). Three years post-treatment the percentage of participants that had lost more than or equal to 5% of their body weight were 38%, 24.5%, 17.7% for the BT, CBT condition and control group respectively. These differences were not statistically significant.

Study 3 evaluated the effectiveness of a self-help manual for obesity with either telephone (MGSH) or face-to-face sessions (GSH) facilitated by a therapist conducted over 18 weeks. A control group did not receive any treatment.

Results showed no significant differences in weight loss between the two treatment conditions (guided self-help and minimal guided self-help) at 18 weeks. However both of these conditions resulted in significantly higher weight loss compared with those in the control condition. Six months after the end of treatment, these weight loss reductions were maintained; the mean weight loss for the GSH group was 3.8 kg and 2.2 kg for the MGSH (see Appendix E, Figure 4). 32.7% of those in the GSH group and 15.1% of those in the M-GSH group maintained at least a 5% weight loss. The control group was not reassessed six months post-treatment. However at the end of treatment (18 weeks) the mean weight change was a gain of 0.3kg.

Study 4 evaluated the efficacy of adding individual CBT to two types of energy-reducing diets for the treatment of weight loss in obese women over six months. The two diets included a low-carbohydrate (C-LC) or low-fat diet (C-LF).

Results showed that those who received CBT in addition to a low-fat diet (CBT-LF) or a low Carbohydrate diet (CBT-LC) significantly reduced their body fat, weight and BMI compared with diet alone. The mean weight loss in the CBT-LF after treatment was 8.5 kg, compared to 3.5 kg for the C-LF group (see Appendix E, Figure 5). The mean weight loss in the CBT-LC was 7.9 kg and 3.6 kg in the C-LC condition. No significant difference in body weight was found between the two control groups (diet only). Weight loss was significantly higher in the CBT-LF group compared with the CBT-LC group.

4.2.2 Effect of CBT on attrition

Mixed results were found with regards to the attrition rate and adherence to treatment. Study 1 had no dropouts once their intervention had commenced and Study

3 had only 2.8% dropout. Study 1 found no differences in attendance between the CBT treatment and control condition. Two more studies showed no differences between the treatment groups and their compliance with the assessment protocol (studies 2 and 3).

However other studies had higher dropout rates (14%, Study 2, 44.7%, Study 4). Study 2 found twice as many dropped out in the CBT condition compared with the control group. Study 4 found the number of dropouts between groups only varied slightly.

4.2.3 Effect of CBT on health and psychological variables

Overall, the findings suggested CBT significantly improved a variety of health and psychological variables. In Study 1, the CBT condition demonstrated significantly greater improvement on body satisfaction than the control group and on physical self-concept. Furthermore, only the CBT condition demonstrated significant within-group improvement for self-efficacy and significantly greater improvement in self-efficacy than the control condition.

Study 2 showed the greater the weight loss, the higher the acceptance of shape at the end of treatment. Those who received CBT were significantly more accepting of their shape than those who received behaviour therapy. Results also showed that CBT significantly improved psychiatric symptoms as well as quality of life. Study 3 found that when CBT was added to an energy-reducing diet, this did not significantly reduce levels of depression and anxiety when compared to diet alone.

Study 4 showed a significant reduction in eating disordered features for those in the most intensive CBT condition (GSH) compared with the control. Physical functioning also significantly improved compared with the control group and these improvements were maintained six months post-treatment.

4.3 Group-based CBT for Weight Loss (Studies 5-10)

4.3.1 Effect of CBT on weight-management

Six studies investigated group-based CBT interventions (Studies 5, 6, 7, 8, 9 and 10). All studies found those receiving CBT lost more weight than those receiving minimal or no treatment. All studies found this difference to be significant except for Study 8 and Study 9 (outcomes were significant in only one of the two treatment settings).

In Study 6 a workplace intervention was trialed on health care workers. There was a significant difference between the intervention and control group on all measures. The CBT group significantly reduced body weight with a mean weight loss of 3.6 kg at three months, and mean BMI change from 30.5 to 29.1 (see Appendix E, Figure 7). Body fat percentage also decreased from 40.9 to 39.3% and waist circumference decreased from 99.3 to 95.1cm. However there were no significant changes found in the control group except for an increased BMI from 30.4 to 30.7.

Study 7 used a quasi-experimental design that recruited participants for the control group one year after the start of the treatment group. At 24 months the CBT group lost significantly more weight than the control group (5.57% of their weight compared to 1.12%). The mean weight loss was 5.58 kg in the treatment group and 1.2 kg in the control group (see Appendix E, Figure 8).

Two trials compared group CBT with individual dietetic or nutritional treatment. Study 5 investigated a group-based CBT in comparison to individualised dietetic treatment and a nutrition resource booklet only (control group) over six months. Results showed a statistically significant difference in weight change between the CBT group and the control group at 12 months.

At 12 months the mean weight loss in the CBT group was 2.9 kg (± 0.9), 1.8 kg (± 0.8) for the individual dietetic treatment and a mean gain of 0.5 kg (± 0.9) in the control group (see Appendix E, Figure 6). There were no significant differences in weight change between the individual dietetic treatment and CBT group, although weight losses were greater in the latter group.

Study 8 demonstrated no significant differences in weight loss between the CBT group and nutritional counselling condition after six months of treatment. However those in the CBT group achieved a larger weight loss (6.39 kg compared with 4.89 kg) (see Appendix E, Figure 9).

The intervention for Study 9 took place either at a clinical centre or in a general practice (GP) setting. At the end of 16 sessions of CBT, the treatment group in a GP setting showed significantly lower weight compared with the control group. One year after the end of treatment, mean weight losses were 4.7 kg, 2.9 kg and 0.4 kg for the GP treatment group, Clinic treatment group and Control group, respectively (illustrated in Figure 10, Appendix E). These results were statistically significant for the GP treatment group only.

Study 10 investigated CBT of differing intensity levels. All of the groups showed a statistically significant weight loss. The mean weight losses 12 months from the start of treatment were 2.2lbs (± 1.26), 4.7lbs (± 1.02) and 7.4lb (± 1.15) for the least, intermediate and intensive treatments (illustrated in Figure 11, Appendix E). Converted into kilograms these were 1 kg, 2.1 kg and 3.3 kg respectively. There was a significant difference between the mean weight loss of the most intensive treatment and the least intensive treatment.

4.3.2 Effect of CBT on diet and exercise

Mixed results were found for the effect of CBT on diet and exercise. In Study 7 the intervention had significant interaction terms (group x time) on both food choice and physical exercise for participants. Those in the intervention group reported significantly higher values than the control group mid-treatment (six months), at 12 months and at 24 months for these variables. The intervention group improved levels of exercise from a mean of 1.26h/week to 4.45h/week after the six months follow-up. This was maintained at a mean of 3.23 at 12 and 24 months. The control group's mean declined from 2.11h/week at baseline to 1.75h/w at 24 months.

Study 10 also demonstrated decreases in energy and fat intake and an increase in exercise in all treatment groups one year after the start of treatment. There was no significant difference for these variables between treatment groups (which varied in intensity level). Study 5 did not find significant differences in physical activity levels between intervention and control groups.

4.3.3 Effect of CBT on attrition

Mixed results were found for attrition rates. In Study 8 a considerably higher dropout rate was found in the individual nutritional counseling group (54.2% of initial sample) compared with the CBT group (15.8%). The overall dropout rate was 37.2%.

Study 5 demonstrated contrasting findings. A significant difference was found between the amounts of data available for participants between comparison groups. The control group and CBT group had less data available than expected (44% and 49% of initial sample, respectively six months after the end of treatment). The dietetic group had more completed data than expected (74% of initial sample six months after treatment).

Study 6 had a low dropout rate of only 7.5%. Furthermore the reasons were due to being absent from the work setting where the treatment was taking place. This compared with a dropout rate of 19% for study 10. However, there was little variability in the dropout rates between treatment groups.

Study 7 found little difference in the dropout rates between the control and intervention groups (3% and 4.8% respectively within the first half of the year). Completed questionnaires were higher in the treatment group than the control group by between 10-20 percent at each time point.

Finally, in Study 9 dropout rates varied considerably between treatment settings. Rates were lower in general practice compared with clinical center settings (0% and 52% respectively at 12month follow-up).

4.3.4 Effect of CBT on health and psychological variables

Mixed results were found for the effect of CBT on health and psychological variables. Study 8 found no significant differences between groups in measures of obesity related wellbeing, obesity related somatic symptoms and physical functioning, psychosocial impact, body uneasiness, psychopathological distress or binge eating, after 6 months of treatment. Study 5 also found no significant differences between intervention and control groups for health status and general wellbeing. However there were significant differences in mean self-efficacy scores; the CBT intervention group and individualised dietetic groups both had greater self-efficacy than the control group.

However, in Study 9, an increased sense of control over eating behaviour and a reduction in feelings of distractibility and hunger were shown in those who received group CBT compared to the control group. Those in the treatment groups also showed

statistically significant increases in feelings of attractiveness regarding their body and shape.

In Study 10, variables that correlated significantly with weight loss included more self-monitoring, higher attendance in group meetings, a greater frequency of computer sessions feeling successful with self-monitoring and achieving more computer dietary goals.

4.4 Potential sources of bias

Potential sources of bias are summarised in Table 3. This table details approximate levels of risk related to methodology, samples used, results and outcome data. All studies defined the intervention they were trialing; five of these were manualised and five were protocol-driven treatments. All studies demonstrated low risk with regards to group differences at baseline. All studies demonstrated high levels of external validity.

However four studies had unclear random sequence generation procedures. Six had unclear procedures for allocation concealment, and six studies had unclear blinding procedures. Four demonstrated dropout rates of over 25%. Seven out of the ten studies had equal sized groups, however three trials demonstrated large discrepancies between group sizes. Further description of sources of bias for each study are summarised in Appendix C.

4.4.1 Methodological issues

Studies 7-9 did not use an RCT design. Studies 8-9 adopted a quasi-random allocation method. Study 8 enabled participants to decline the treatment offered (group therapy), withdraw from the study and opt for individual counseling. Study 9 did not randomly allocate participants into the two treatment settings, and allocation to the control group appeared to happen in only one of the treatment settings. Study 7 used a quasi-experimental trial where the data for the control condition were collected 12 months after baseline data for the treatment condition. Therefore factors other than treatment could have accounted for variance in these studies, and selection bias must be considered. This study also used self-reported measures of weight and therefore these results are at risk of being inaccurate due to potential demand characteristics.

Six out of ten studies used intention to treat analysis; three of these (Studies 1, 4 and 6) used the last observation-carried forward method for managing missing data. Study 2 used the within-treatment group median of the distribution of possible scores calculated for each participant with valid data at that point. One longitudinal study only presented data for completers (Study 7). The method for handling missing data for the remaining three studies was unclear (Studies 8, 9, and 10). There is potential for results to be biased when data sets are not complete.

Half of the studies reported power calculations to determine sample sizes needed to detect significant differences. These studies were all adequately powered. The remaining five studies did not report these figures and therefore may be at risk of being underpowered.

Table 3. Risk of bias in studies

Key: Low risk = (+) High Risk = (⊘) Unclear= (ⓘ)

	Authors	Protocol Driven (P) Manualised (M)	Intervention Defined	Group Differences	External Validity	Equal Sized Groups	Random Sequence Generation	Allocation Conceal-ment	Blinding	Adequately Powered	Incomplete Outcome Data
1	Annesi (2010)	P	+	+	+	+	ⓘ	ⓘ	+	+	ⓘ
2	Cooper et al. (2010)	M	+	+	+	+	+	+	+	+	+
3	Grave (2004)	M	+	+	+	+	+	+	ⓘ	+	⊘
4	Rodriguez-Hernandez (2009)	P	+	+	+	+	ⓘ	ⓘ	ⓘ	ⓘ	+
5	Ash (2006)	M	+	+	+	+	+	ⓘ	ⓘ	ⓘ	⊘
6	Christensen et al. (2011)	P	+	+	+	+	+	+	+	+	+
7	Gohner et al. (2012)	M	+	+	+	⊘	n/a	n/a	n/a	ⓘ	+
8	Minniti et al. (2007)	P	+	+	+	+	⊘	ⓘ	ⓘ	ⓘ	⊘
9	Munsch et al. (2003)	M	+	+	+	⊘	ⓘ	ⓘ	ⓘ	ⓘ	⊘
10	Wylie-Rosett (2001)	P	+	+	+	⊘	ⓘ	ⓘ	ⓘ	+	+

5. Discussion

The aim of the review was to assess the efficacy of cognitive-behavioural interventions for the treatment of overweight or obesity. The evidence showed that CBT had a positive effect on weight-loss. The main findings will be discussed as well as the quality issues, strengths and weaknesses of the review, followed by clinical implications and recommendations for future research.

5.1 Summary of the Main Findings

CBT for Weight-management

Four studies demonstrated greater *short-term* weight loss for CBT interventions compared with minimal or no treatment conditions (Studies 2, 4, 6 and 9). Two studies showed CBT was superior for *medium-term* weight losses (Study 1 and 3). Finally five studies assessed *long-term* weight loss (Studies 2,5,7,9 and 10). The majority finding from these also confirmed that CBT led to greater long-term weight loss, when compared with a minimal or no treatment condition or treatment as usual.

The mean weight losses across studies (measured at their last time-point) ranged from 0.48-8.5kg for CBT conditions and a gain of 2.4 kg to a loss of 4.89 kg for control conditions. CBT demonstrated better outcomes for both weight losses and changes in BMI.

Type of CBT and Effect on Weight-management

The main conclusions were similar for both individual and group CBT interventions; CBT demonstrated superior weight loss results compared to alternative conditions. The largest weight loss achieved across studies was through a combination of CBT and a low-fat diet (Study 3), suggesting that CBT can compliment traditional diets and optimise weight loss outcomes.

Some of the interventions could be classified as more 'CBT intensive' than others. For example, one study allocated only 15 minutes for CBT (Study 6) compared with 90 minutes on another study (Study 9). The over-riding result favoured the CBT condition despite the level of intensity; however the most intensive conditions demonstrated better outcomes (Study 10).

Type of Setting and Effect on Weight-management

The settings varied between studies. The importance of this factor was highlighted in one study that trialed both a general practice and a clinic center (Study 9). Better weight loss outcomes were achieved in the general practice setting. It is unclear whether GP practioners were facilitating the intervention. This would have further implications with regards to patient relationships and professional roles. However, the general practice setting in itself may encourage treatment compliance or may be more accessible and familiar to patients, in turn fostering better outcomes.

CBT and Attrition

Mixed findings were presented for rates of attrition, ranging from zero to 56 %. This is unsurprising since previous research indicated high dropout rates for patients

receiving treatment for obesity (Stunkard, 1992). Recent research demonstrated an attrition rate of 53.9% at an adult weight-management clinic (Gill et al., 2012).

In this review, three studies experienced particularly low dropout rates. Four studies found little difference between CBT and control conditions. Two found higher dropout rates for group CBT and one found higher in the control group.

There may be a number of reasons for these results. One reason may be due to using an accessible, familiar treatment setting. Studies with low attrition rates included settings at YMCA wellness centres (Study 1), a workplace environment (Study 6) and a general practice setting (Study 9). Contributing factors to attrition are worth considering as increased attendance was found to correlate significantly with weight-loss (Study10).

CBT and Other Health and Psychological Variables

Few studies in the review investigated changes in diet and exercise. However there was some evidence to suggest CBT positively affected levels of physical activity and diet compared with non-CBT conditions.

Some significant improvements were also found on psychological measures for those receiving CBT compared to non-CBT conditions. These included increased self-efficacy, an increased sense of control with overeating behaviours, a reduction in feelings of distractibility and hunger, increased feelings of attractiveness regarding body and shape, increased acceptance of their body-shape, a reduction in eating disorder features and improved physical functioning. Therefore the benefits of CBT appear to be far-reaching and not limited to weight-loss alone.

5.2 Quality appraisal of literature

When assessing the quality of the literature some areas of concern were highlighted. Most studies in the review used the 'gold-standard' RCT design. However two were not RCTs, and therefore their results may have been influenced by differences between the patient groups.

Although all of the studies used a CBT approach, variations existed between interventions. This included the length, intensity, format and content, treatment setting and type and level of experience of facilitators. These factors could significantly affect the results due to varying types and quality of interventions.

Most studies combined CBT with another intervention such as exercise, nutritional guidance and dietary advice. This made it difficult to establish the extent to which changes were due specifically to the CBT intervention. Control conditions also varied between studies. This also made the impact of individual differences between control conditions unclear.

For over half the studies the methods of allocation concealment (the procedure for protecting the randomisation process) and the blinding of outcome assessors were unclear. In these cases subjective bias may have occurred by the participant, therapist or researcher.

For half of the studies it was uncertain if the results were adequately powered. This may have produced Type II errors. For some there was a high level of incomplete outcome data and a few studies had a high level of attrition. This raises the possibility of bias occurring. However, the majority of the studies used an intention-to-treat analysis as a way of managing this.

Characteristics of participants also differed between studies. Half the studies used an all female population and therefore the pattern of the results may have been influenced by gender differences.

5.3 Strengths and limitations of the review

Although the findings of this review demonstrated promising outcomes for the use of CBT in weight-management, the limitations must be considered. It was difficult to draw strong conclusions regarding the effect of CBT on other health and psychological outcomes. This was because many of the studies used different measures and measured different constructs.

Other limitations included only accessing articles that were available in English. The articles were from predominately 'Western' countries, therefore the ability to generalise the results was limited to particular populations. Other articles that were not included were those that had not been published (e.g. theses, articles in press) or that did not appear in a peer-reviewed journal. Therefore the scoping process, though systematic, was not fully comprehensive.

Additionally qualitative articles were excluded; this limited the review due to relevant research not being incorporated. Goldsmith, Bankhead and Austoker (2007) stated that synthesising quantitative and qualitative research in a single review was an important methodological challenge. Future reviews could use their recommendations on how these may be successfully brought together.

The review included ten articles. One might argue this was a limited number of studies from which to draw strong conclusions. The main reasons for this were that other articles had used participants with binge-eating disorder, an unsuitable control condition was used, and there was lack of clarity whether the intervention was CBT. It

was felt that 'relaxing' the inclusion criteria to encompass studies falling within these areas would have detrimentally affected the aims of the review. Therefore it was decided to have a reduced number of articles that would be able to answer the question more robustly.

5.4 Clinical implications and recommendations for future research

The findings from this review hold positive implications for clinical practice. The nature of obesity is often resistant to traditional methods of weight-management. Diet and exercise has been found to produce minimal weight losses that are not sustained long-term (Tuah et al., 2012). It is crucial to identify effective interventions to aid current methods. CBT offers an additional approach to help optimise outcomes.

CBT treatments across studies were delivered in a variety of formats, however all had a positive effect on weight loss. Neither group nor individual CBT treatments were superior to each other. This has useful clinical implications for health-care providers. CBT does not have to be limited to one particular delivery method. Thus, services are able to integrate the intervention in a way that is suitable for their setting, whilst also using a method that is cost effective to the service. However, the evidence suggested more intensive CBT treatment achieved better outcomes.

The contribution of specific psychological variables in mediating weight-loss is not clearly understood. From this review it was evident CBT can help improve some psychological variables (e.g. acceptance of body-shape). However research investigating their importance would be useful to understand where therapeutic interventions should be directed. Additionally, there is a need for more consistent measures to be used across studies to facilitate comparison and to be able to make stronger conclusions.

The literature search highlighted that studies investigating overweight and obesity and psychological therapies used predominately female only or mixed gender populations. Conducting more research with male participants would be useful to be able to evaluate the findings more widely.

Clinic non-attenders are costly to health services; therefore further research into understanding the reasons for high dropout rates would be beneficial. One study found a higher dropout rate in the individual dietetic treatment compared to group CBT (Study 8); therefore group support may be more useful in this regard. Finally it is important to continue conducting research on the efficacy of CBT and weight-management to build on the existing literature base.

5.5 Conclusion

This review examined the effectiveness of CBT as a treatment for weight-management for overweight and obesity. The studies included compared CBT (for weight-management) with minimal or no treatment, or treatment as usual. Previous evidence indicated CBT had a positive effect on weight loss (Shaw et al., 2005). However since this time, there has been further CBT research conducted, therefore this review aimed to update and inform the literature on current findings.

The results supported previous findings and indicated CBT had a positive effect on weight-loss. CBT interventions were superior to treatment as usual, minimal or no treatment conditions. These effects were demonstrated over both short and long-term, and in both group and individually based treatments. Health care providers should therefore consider CBT as a treatment to complement traditional weight control methods to optimise weight-loss outcomes. The review was limited primarily due to issues regarding the quality of the studies being unclear. Many were difficult to assess

due to the lack of detail provided (including methodological issues such as blinding and adequate sample sizes required for power calculations). However, despite these shortcomings, the findings were an important addition to the current literature regarding psychological therapies and weight-management for overweight and obesity.

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Empirical Paper

Examining Shame, Self-Compassion and Eating Behaviour

In Treatment-Seeking Obese Adults:

A Cross Sectional Study

Examining Shame, Self-Compassion and Eating Behaviour In Treatment-Seeking Obese Adults: A Cross Sectional Study

1. Abstract

1.1 Objective

If current trends continued, by 2050 Britain could be a predominantly obese society. Serious associated health risks with obesity include an increased risk of type 2 diabetes, some cancers and heart and liver disease. Treatment for obesity is primarily focused on improving diet, nutrition and activity levels. However obesity still remains largely treatment resistant. Psychological interventions for weight-management have shown some successes, however it is not clear what psychological aspects should be targeted. Shame has emerged as an important factor in the development and maintenance of eating disorders. This study examines self-conscious emotions and negative affect in an obese population along with eating behaviours.

1.2 Method

Treatment-seeking obese adults were recruited from a dietetic clinic to complete a range of psychometric measures. Primary constructs examined were shame, self-compassion, psychological distress and eating behaviours. The outcomes were compared to norms from similar and non-clinical populations. Relationships between variables were explored, and the unique contribution of shame in eating behaviours was also investigated when distress was controlled.

1.3 Results

Treatment seeking-obese individuals were found to experience significantly high levels of shame, distress, eating disorder psychopathology and uncontrolled eating compared with a non-clinical population. A number of variables were shown to be significantly associated with high levels of shame including eating behaviour (emotional and uncontrolled eating). Internal shame was shown to have a unique contribution in the explanation of emotional eating and eating disorder psychopathology.

1.4 Discussion

Incorporating aspects of treatment that address levels of shame and distress, may help improve the effectiveness of weight-management interventions. Recommendations for future research include trialing interventions that address self-conscious emotions. This may involve models such as a compassion-focused approach that specifically targets shame and self-directed hostility.

2. Introduction

2.1 Clinical context

The Health Survey for England 2008 found that almost a quarter of adults in England are obese (The Health and Social Care Information Centre, 2010). With the inclusion of people who fall into the overweight classification (with a body mass index of over 25), the figures rose to 66% of men and 57% of women. These statistics demonstrated the extent to which obesity is a problem and there is evidence that the problem is growing. The Foresight Report, 'Tackling Obesities: Future Choices - Project Report' (2007) showed that, if current trends continued, by 2050 Britain could be a predominantly obese society. Projected figures indicated that 60% of men, 50% of women and 25% of children would be obese. They also predicted by this time the NHS costs attributable to overweight and obesity would reach £10 billion. There are many serious associated health risks with obesity including an increased risk of type 2 diabetes, some cancers and heart and liver disease (World Health Organization, 2011).

2.1.2 Current treatments for weight-management

Treatment for obesity within the NHS is primarily focused on improving diet and nutrition, and increasing activity levels. Other interventions include behavioural approaches (e.g. goal setting), drug therapy and surgery (NICE, 2006). Research has

shown surgical treatments to be the most effective intervention in sustaining large weight-losses (Franklin, 2010). Although psychological interventions are not prioritised, barriers to lifestyle change are acknowledged including low-self esteem, lack of assertiveness and readiness to change.

The Cochrane Review on psychological interventions for overweight or obesity (Shaw, O'Rourke, & Kenardy, 2005) found that cognitive behavioural therapy and behavioural therapy significantly improved the success of weight loss for this client group. However long-term weight losses have not been shown (Cooper et al., 2010). Therefore there may be a role for psychological interventions but it is not clear what psychological aspects should be targeted.

Psychological distress has been shown to correlate with obese individuals' general psychopathology (Algul et al., 2009). Webb (2000) found high levels of distress and shame in obese individuals. A literature review on self-esteem and obesity showed there was an inverse relationship between weight and global self-esteem and body-esteem (French, Story & Perry, 1995). Thus, addressing psychopathology may be useful alongside existing approaches. This study seeks to understand the involvement of some psychological factors in obesity. In particular, the role of shame, self-compassion and distress will be explored and their relationship to eating behaviours, eating psychopathology and physical activity.

2.2 Shame and obesity

Shame can be defined as seeing the sense of self as being fundamentally flawed and defective. This may result in an individual wanting to hide from the attention of others, and may foster feelings of worthlessness, unworthy of nurturance or love, and becoming self-critical (Lindsay-Hartz, 1984). Two types of shame have been distinguished: internal and external shame (Gilbert, 1998). External shame has been described as how one exists in the minds of others (Gilbert, 1998). It is characterised by thoughts and feelings that others view the self negatively, or that they are seen to have characteristics that are unattractive to others. Internal shame however is when the focus of attention is on the self, and the self is viewed as inadequate flawed or bad. Central to internal shame is self-devaluation and self-criticism (Gilbert & Procter, 2006).

Shame has recently emerged as an important factor in the development and maintenance of eating disorders (Goss & Allan, 2009; Keith, Gillanders & Simpson, 2009). Evidence suggests high levels of shame are associated with eating disordered symptoms (Troop, Allan, Serpell & Treasure, 2008). Research into the role of shame and self-criticism in obese treatment-seeking individuals is relatively sparse. However early findings showed obese adults have similar levels of shame to other eating disordered populations (Franks, 2011).

Explanatory models for eating disorders have until recently been examined and developed independently of the inclusion of obesity. However, Fairburn et al. (2009) highlighted the use of trans-diagnostic models and therapies in the treatment of

eating disorders. Attention was drawn to common maintaining processes and thus not restricting therapies to specific types of eating disorder, and opening trans-diagnostic approaches to wider populations. This implies that therapies that may be effective for eating disorders, may also be useful for patients who are clinically obese.

Shure and Weinsotck (2009) explored the origins of shame and weight within Western culture and highlighted the presence of myths such as 'thin is good and fat is bad' and 'only the thin are loveable'. Recent findings by Chao, Yang and Chiou (2012) suggested shame elicits the desire to consume food to protect the 'devalued self', but consequentially this may lead to over-eating. In a non-clinical population, participants experiencing shame found a buffet meal more desirable, were more likely to binge eat, and ate more than those who did not experience shame. Thus levels of shame affected eating behaviour.

Burk-Braxton and Laurene (1996) showed that females who had not maintained weight-loss demonstrated higher levels of shame. They also demonstrated lower levels of self-efficacy for eating control, than those who had no weight to lose or who had maintained weight-loss

Weight-related shame and guilt have been found to be positively associated with disengaging coping responses, such as negative self-talk, crying, isolating oneself and avoidance. These responses may prevent individuals from being able to utilise more engaging coping strategies (e.g. problem solving, confronting, seeking social support) that are more likely to help with weight loss (Conradt et al., 2008).

This evidence and theoretical framework suggests that shame may play an important role in maintaining unhelpful weight management strategies.

2.3 Self-compassion in obesity

Self-compassion has been defined as the ability to hold one's feelings of suffering with a sense of warmth, connection and concern (Neff, 2003). It is a way of relating to oneself in a compassionate way, rather than using self-evaluations or social comparisons. There are three central components that have been defined within Neff's (2003) model of self-compassion; these include self-kindness versus self-judgment, a sense of common humanity versus isolation and mindfulness versus over-identification.

Self-compassion enables one to admit to mistakes and shortcomings, allowing the individual to be able to change unhelpful behaviours and attempt new goals, rather than berating themselves for previous failures (Neff, 2009). This may be particularly important for those who have previously attempted to lose weight unsuccessfully.

Having self-compassion has been shown to enable people to acknowledge their role in negative events, without feeling overwhelmed with negative emotions. Additionally it has been shown to buffer people against negative self-feelings (Leary, Tate, Adams, Allen & Hancock, 2007). A study investigating an online 'fat-acceptance' community ('Fatosphere') explored the impact of 'fat acceptance' on their health and wellbeing. Results showed participants that blogged (conversed) felt

more empowered, and that belonging to a supportive community led to improvements in health and wellbeing (Dickins, Thomas, King, Lewis & Holland, 2011).

Research on women's motivation to exercise found that self-compassion was positively associated to intrinsic motivation (self-determined motivation initiated through choice) and negatively related to introjected motivation (behaviours pressured by other forces) (Magnus, Kowalski & McHugh, 2010). Improving levels of self-compassion may therefore help with engagement in physical activity and healthy behaviours, core to most weight management programmes. Although clinicians have recognised self-compassion as an important concept in this population (Klinger, 2002), knowledge and research related to obesity and weight management is still limited.

2.4 Psychological distress in obesity

Psychological distress, higher levels of depression and lower levels of self-esteem have been associated with the degree of obesity (Friedman, Reichmann, Costanzo & Musante, 2002). Stigmatisation and discrimination have also been reported to be frequent experiences of people who are obese, with serious consequences for emotional wellbeing (Puhl & Brownell, 2001). Research has indicated that emotional states have a major affect on eating behaviour. It was shown that overweight people eat more than normal weight or underweight individuals when experiencing negative emotional states (Geliebter & Aversa, 2003). In light of

these findings, understanding the role of psychological distress may be key for successful weight management.

2.5 Physical activity & obesity

The focus for many weight management interventions includes restricting energy intake and increasing energy expenditure. Investigating levels of physical activity is of interest for many reasons; one of these being that the strongest predictor of sustained weight loss has been found to be regular physical activity (Miller, Koceja, & Hamilton, 1997). Additionally increases in physical activity have been associated with improved psychological wellbeing (Kelly et al., 2011), healthier BMI ranges and better self-perceived health (Kull, Matsi & Raudsepp, 2010). However adherence to informal and structured treatments have been poor (Mann, Tomiyama, Westling, Lew, Samuels & Chatman, 2007). Therefore there is a need to understand psychological mechanisms involved in engagement with healthy behaviours.

2.6 Eating behaviours, eating disorder psychopathology and obesity

Most weight management interventions require individuals to change their current eating patterns. It is therefore useful to consider factors that affect eating behaviour. Individuals that are obese have been found to be more emotionally reactive and more likely to overeat when distressed compared to those of a healthy

weight (Lowe & Fisher, 1983). Individuals identified as high 'over-consumers' of food, were more often overweight, had higher degrees of dietary restraint, emotional eating and external eating (overeating in response to external food-related cues) and engaged less often in physical activity (Strien, Herman, &Verheijden,2012).

The psychological mechanisms related to eating behaviour appear to be complex. Weight and shape concern (from The Eating Disorder Examination Questionnaire; Fairburn & Beglin, 1994) have been shown to mediate relationships between self-esteem, dietary restraint and uncontrolled eating (Ross & Wade, 2004). Self-silencing behaviour (suppression of feelings, judging the self by external standards, presenting an outer-compliant self) was found to influence self-esteem, weight and shape concern and subsequently eating behaviour.

A high percentage (23-46%) of obese patients seeking weight-loss treatments have been shown to suffer from binge eating disorder (Manson & Willett, 2002). Identifying risk factors associated with eating disorder psychopathology and obesity is important due to psychological and physical health consequences. For example, research has shown untreated BED is associated with substantial weight gain (Blomquist et al., 2011).

2.7 Rationale and aims

Psychological correlates of obesity are not fully understood. There is a lack of research investigating factors associated with eating behaviours and eating disorder psychopathology in obese individuals. For psychological treatments to be successful in their aims, it is essential to understand psychological factors that contribute to obesity and maintain the problem.

Shame and self-compassion have been found to play a role in the development and maintenance of eating disorders (Goss & Allan, 2009). Trans-diagnostic models suggest common maintaining processes may apply to wider populations outside of specific eating disorders (Fairburn et al., 2009). Preliminary findings suggest obese adults share similar psychological characteristics with eating disorder populations, showing high levels of shame (Franks, 2011). However research exploring shame and obesity is still in its early stages and requires further investigation. Increasing understanding in this area would help to inform future interventions; particularly whether trans-diagnostic models used in eating disorder populations would also be useful in obesity.

2.8 Aims and objectives

The present study sought to explore the role of shame and self-compassion with other factors relevant to weight management. These included eating behaviours, physical activity, eating disorder psychopathology and psychological wellbeing. The aims were divided into three parts (1-3):

Part 1 involves comparing traits with similar and non-clinical populations. This is to develop an understanding of *levels of shame and self-compassion*, *levels of eating disorder psychopathology* and *patterns of eating behaviour* experienced in obese populations (cognitive restraint, emotional eating, uncontrolled eating). *Levels of dietary change* and *physical activity* are also investigated. A secondary research question examines gender differences for these factors. A further aim examines differences in shame between 'comfort-eating' and 'non-comfort-eating' participants and 'overeating' and 'non-overeating' participants.

Part 2 examines associations between shame, self-compassion, distress and eating behaviours/psychopathology. Relationships between shame, self-compassion and distress are investigated. These factors are examined to identify associations with *eating behaviour* (over-eating, comfort-eating, cognitive restraint, emotional eating, uncontrolled eating) *eating disorder psychopathology* and *physical activity.* A secondary research question examines the association of BMI with shame, self-compassion and distress.

Part 3 examines the unique contribution of shame (over and above the contribution of distress) to eating behaviour and eating disordered psychopathology.

3. Method

3.1 Overview

This study formed part of a wider research project; Study 1 was cross-sectional in design and Study 2 was a randomised control trial (RCT). The RCT investigated the efficacy of compassion-focused bibliotherapy for obese treatment seeking adults compared with treatment as usual. As part of this evaluation a range of psychometric measures were used at two time-points, baseline (t1) and post-treatment (t2). This study (Study 1) involved evaluating these measures at t1. Recruitment involved two phases; the first phase recruited to both studies, and the second phase recruited to Study 1 only.

3.2 Trainee contribution

Two trainees were involved and contributed equally to both studies. This included equally contributing to decisions regarding the study design, application for ethical approval, preparing materials for recruitment, recruiting participants, providing telephone support to those allocated to the intervention group (Study 2) and collecting data. However, the analyses and evaluation of data were done separately; one trainee evaluated the RCT trial and the present author evaluated the cross-sectional study (Study 1).

3.3 Study design (Study 1)

This study employed a cross sectional, correlational design using self-report questionnaires. Relationships between a range of psychological constructs were examined. These included self-compassion, shame, wellbeing and eating disorder psychopathology. In addition to these, eating behaviour and levels of physical activity were investigated.

3.4 Participants

Participants were recruited through an NHS outpatient dietetic clinic in the Midlands. The sample included 53 clinically obese treatment-seeking adults; 33 were male and 20 were female. Participants were recruited between July 2012 and April 2013. The service estimated receiving 12 new referrals per week. Approximately 40% of patients with a booked appointment were approached to be involved in the study. Of these 40%, one in three participants were recruited using the Phase 1 procedure. When Phase 2 procedure was used, approximately 20% of patients agreed, or were able to complete the questionnaires at the clinic (e.g. had enough time before their appointment). When questionnaires were provided for postal return, one in 30 questionnaires were returned.

The mean age was 46 years old, (SD= 10.2; range=27-66 years). The mean BMI was 45 kg/m^2 (SD=10.2; range= 30 - 86kg/m^2). The majority of participants were white Caucasian (43), one participant was black Caribbean, two were black African, one was black other, four were Indian and two were from other ethnic backgrounds.

The dietetic service provides life-style management, including group sessions on diet and exercise and a patient support group. It also provides specialist input for pre- and post-bariatric surgery. Staff members within the obesity service include doctors, endocrinologists, specialist nurses, dieticians, a special bariatric psychologist and other health professionals.

Participants for this study were those that met the service criteria: adults with a BMI of 30kg/m^2 or more, who were actively seeking treatment for weight-management. For the purpose of this study exclusion criteria were also applied:-

- Participants whose first language was not English. This was necessary due to the measures (questionnaires) not being valid when translated cross culturally.
- Individuals who had undergone bariatric surgery. This was important due to the impact surgery has on the variables being examined (e.g. eating behaviours).
- Individuals who were pregnant

Applicable to Phase 1 of recruitment only: (see 3.7.1 for Phase 1 recruitment procedure)

- Individuals unable to attend a face-to-face appointment with a researcher
- Individuals shortly being discharged from the dietetic clinic
- Individuals who demonstrated significant risk to themselves or other people.
- Individuals who met criteria for an eating disorder.

- Individuals who demonstrated significant psychological needs that required more intensive support from other agencies and this support was not being accessed at the time of the assessment e.g. contact with a psychiatrist.

Exclusion criteria related to patients' physical or psychological health were necessary to ensure individuals received appropriate levels of support from the most suitable service.

3.5 Sample size

The main research questions involved examining associations between shame, self-compassion and eating behaviours and psychopathology. This required using Pearson's Product Moment correlations. To achieve a medium effect size (r=0.3) and power of 0.8 with alpha set at 0.05, it was estimated that 85 participants would be required (Clark-Carter, 2010).

3.6 Measures

A range of measures was used to assess shame, compassion, psychological wellbeing, eating disorder psychopathology, eating behaviour and physical activity levels.

3.6.1 The Eating Disorder Examination - Questionnaire (EDE-Q; Fairburn & Beglin, 1994)

The EDE-Q is a self-report version of the Eating Disorders Questionnaire (Fairburn & Beglin, 1994) used to measure eating disorder psychopathology. It

contains 28 questions assessing core-eating behaviour that characterise eating disordered behaviour. Four subscales are produced that include *dietary restraint*, *eating concern*, *shape concern*, *weight concern*, and a global EDE-Q score.

Dietary restraint measures restraint over eating, avoidance of food and eating, dietary rules and the drive for an empty stomach. *Eating concern* measures preoccupation with food, eating and calories, fear of losing control over eating, eating in secret, social eating and guilt about eating. *Shape concern* measures the drive for a flat stomach, preoccupation with shape or weight, importance of shape, fear of weight gain, dissatisfaction with shape, discomfort seeing ones body, avoidance of exposure and feelings of fatness. *Weight concern* measures importance of weight, reaction to prescribed weighing, preoccupation with shape or weight, dissatisfaction with weight and desire to lose weight.

Scores range between zero and six; higher scores represent a greater level of eating disorder psychopathology. Evidence has shown it has psychometric properties similar to the EDE (The Eating Disorder Examination Interview; Fairburn,1987) and shows good internal consistency (Cronbach alpha = 0.90; Peterson et al., 2007) and test-retest reliability in use with adults (Luce & Crowther, 1999). It also shows good concurrent validity and acceptable criterion validity (Mond, Hay, Rodgers, Owen & Beumont, 2004).

3.6.2 Three Factor Eating Questionnaire Revised 18-item version (TFEQ-R18; Stunkard & Messick, 1985)

To assess eating behaviours, the TFEQ-R18 (Stunkard & Messick, 1985) was used. To reduce participant burden the shortened version of this scale was used rather than its original 51-item version. The scale consists of 18 items on a 4-point response scale (definitely true/mostly true/mostly false/definitely false). It produces three subscales; cognitive restraint, uncontrolled eating and emotional eating. Scores are transformed to a 0–100 scale; higher scores are indicative of greater cognitive restraint, uncontrolled, or emotional eating. The measure has been shown to have good internal consistency; Cronbach's alphas were above .70 on each of the three scales (Lauzon et al., 2004). The measure has also produced good construct validity (Angle et al., 2009), robust factor structure and good reliability (Cappelleri et al., 2009).

3.6.3 Retrospective Food Diary (Developed by NHS Eating Disorder Service)

Reported food intake was recorded by taking a retrospective example of one day's food consumption. This was adapted from a food diary already used by a local NHS eating disorder service. Participants indicated whether eating episodes in their diary were 'overeating', 'comfort-eating' and these were transformed to yes or no answers for analysis. For the purpose of this study, only the types of eating behaviour were analysed and not food consumption.

Literature has found that estimated food diaries have acceptable levels of validity, although may deviate from *observed* food intake by up to 15% (Karvetti & Knuts,

1992). Substantial levels of test-retest reliability have also been found using 24-hour dietary recalls (Sun, Roth, Ritchie, Burgio & Locher,2010).

3.6.4 Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM; CORE System, 2009)

The CORE-OM is a 34-item self-report questionnaire that measures global distress. Subscales include levels of *subjective wellbeing*, *common psychological problems*, *social functioning* and *risk* (intended to serve as a clinical indicator of risk as opposed to a scale). Mean scores range between 0-4. The measure is problem scored, therefore the higher the score the more problems and distress the individual is experiencing. A total global distress score is also produced that ranges between 0-112 (not including *risk*). Research has shown this is a reliable and valid instrument with good sensitivity to change (Evans et al., 2002). Cronbach's alphas were 0.7 (or more) for all domains of the CORE-OM demonstrating good internal consistency (Barkham et al., 2005).

3.6.5 Shame measures

The Internalised Shame Scale (ISS; Cook, 1993)

The ISS (Cook, 1993) is a self-report measure that evaluates the extent to which the negative affect of shame becomes magnified and internalized. Internal shame has been described as involving evaluations of the self as inadequate, with key

components being self-devaluation and self-criticism (Gilbert & Proctor, 2006). It consists of 30 items that assess participants' overall feelings of self-worth. Six of the items comprise a self-esteem subscale (ISSE), and the remaining 24 comprise a total internalized shame score (score range 0-96). Higher scores indicate greater internalized shame and higher self-esteem. Literature has shown it has good construct validity and is a reliable measure of internal shame (α = .90) (Rybak & Brown, 1996; Rosario & White, 2004).

Other as Shamer Scale (OAS; Goss, Gilbert & Allan, 1994)

External shame was measured using the OAS (Goss, Gilbert & Allan, 1994), developed from Cook's (1993) Internalized Shame Scale (ISS). External shame has been described as involving negative feelings about the self that develop from experiencing others as critical and rejecting (Gilbert, 1998). The OAS has18 items that look at global judgments of how people think others see them; these are rated on a 5-point scale indicating how often they feel this way. Higher scores indicate higher levels of external shame (score range 0-72). Evidence has shown it is a reliable measure with satisfactory internal consistency (α = .92) (Goss et al., 1994). The OAS demonstrates convergent validity; it has a high correlation with a number of other measures of shame (Gilbert, 2000).

3.6.6 The Self Compassion Scale (SCS; Neff, 2003)

This scale was used to measure levels of self-compassion. It is the only widely used measure of self-compassion in the literature. It is a 26-item self-report measure that assesses six facets of presence or absence of self-compassion. These include *'self-kindness'* (kindness towards oneself) versus *'self-judgment'* (harsh self-criticism and judgment), *'common humanity'* (recognising suffering and personal failure is part of the shared human condition) versus *'isolation'* (feeling alone in one's experience), *'mindfulness'* (taking a balanced emotional perspective) versus *'over-identification'* (over-identifying and absorption with negative thoughts and feelings).

Higher scores represent more self-compassion (range= 1-5). This is true for self-judgment, isolation and over-identification when scores are reversed. A total self-compassion score can also be calculated (range= 1-30). This scale has been found to demonstrate good internal consistency (α = -.92) and good test-retest reliability and validity (Neff, 2003; Neff, et al., 2007).

3.6.7 General Practice Physical Activity Questionnaire (GPPAQ; Department of Health, 2006)

To assess levels of physical activity the General Practice Physical Activity Questionnaire (GPPAQ) was used. This is a short 7-item questionnaire developed to be 'quick to administer'. The GPPAQ was commissioned by the Department of Health (2006) and developed by the London School of Hygiene & Tropical Medicine as a validated short measure of physical activity to identify patients who

would benefit from increased physical activity. It was derived from a short physical activity questionnaire (used in the European Prospective Investigation into Cancer) that had acceptable levels of repeatability and validity (Wareham et al., 2002).

The GPPAQ provides a 'four level' Physical Activity Index (PAI), categorising patients as 'active', 'moderately active', 'moderately inactive', and 'inactive'. It is a validated screening tool for use in primary care and has demonstrated good face validity, construct validity and repeatability (NICE, 2006). Internal consistency values have not been reported in current literature.

3.7 Procedure

The research proposal was submitted to the National Research Ethics Committee and reviewed in March 2012. A favourable opinion was granted in April 2012 with the proviso that some minor changes were made (see approval letter, Appendix F and acknowledgement of response to the conditions of the favourable opinion, Appendix G).

Participants were recruited from the dietetic outpatient clinic. Staff members were informed of both Study 1 and 2. Participant information sheets with details of the study were provided to staff (see Appendix J). Two dieticians were liaised with throughout the study to identify opportunities to approach potential participants.

3.7.1 Procedure Phase 1 (May 2012- December 2012)

Suitable recruitment opportunities were identified. These included presenting at a psycho-educational group session held by a dietician, talking to prospective participants in the waiting area or during an appointment with the dietician. Participant invitation and information sheets (see *Phase 1,*Appendix J) were provided to potential participants who expressed an interest in the study. Any questions could be discussed with one of the lead researchers at the clinic. Due to both studies evaluating the same outcome measures at baseline, data were collected for both studies at this time.

Consent was gained for further contact to be made from those interested in the study (see participant invitation, Appendix J). After a short period of time (e.g. several days) prospective participants were contacted to identify those who wanted to take part. A face-to-face appointment was subsequently arranged to recruit individuals onto the study providing they consented and were eligible.

A semi-structured interview was conducted with each participant at the beginning of the appointment to assess for issues of risk or other mental health problems. On occasions where issues were identified, appropriate support was implemented, and guidance from the chief investigator was sought. If no issues were identified, informed consent was taken from those who agreed (see consent form, Appendix J).

The self-report measures were also completed at this time. To preserve anonymity a participant number was assigned to each questionnaire pack. The lead researcher answered any questions regarding the study during this time.

Study 2 – Participants were randomised to receive treatment as usual (TAU) or TAU plus Compassion-Focused biblio-therapy. Fortnightly supportive phone-calls were provided (by trainees) to those in the treatment group.

3.7.2 Procedure Phase 2 (December 2012- April 2013)

An amendment was submitted to the National Research Ethics Committee in November 2012. At this stage 36 participants had been recruited. This total met the statistical power requirements for Study 2 (RCT Trial), however Study 1 required a greater number of participants. The purpose of the amendment was to suspend recruitment to Study 2 and simplify the recruitment strategy for Study 1, with the aim of increasing the number of participants onto Study 1. A favourable opinion was granted in December 2012.

The new strategy involved approaching participants in the waiting room or within a psycho-educational group (at the same dietetic clinic) to take part in the study and providing an information sheet (see *Phase 2,* Appendix J,). Where appropriate more information or guidance was given. Those willing to take part were asked to complete the questionnaire pack either in the clinic or to return it by post, using a pre-paid self-addressed envelope. No names or contact details were requested and a unique identified number was allocated to each questionnaire pack received to uphold confidentiality.

One of the dieticians was trained to carry out this revised recruitment strategy. They agreed to provide questionnaire packs to potential participants in the absence of researchers to maximise recruitment. Participants were provided with contact details of both researchers to ensure they were able to ask questions or access support if required. As Study 2 had been suspended, participants did not need to return to the clinic to attend an individual face-to-face appointment, or be screened for eligibility. This revised recruitment strategy therefore also reduced participant burden.

4 Results

Plan of analyses

4.1 Testing normality

The data were tested to establish normality for the use of parametric or non-parametric statistical techniques. Normality was assessed through skewness and kurtosis values, the Kolmogorov-Smirnov statistic and the 5% Trimmed Mean statistic. The use of Histograms, Normal Q-Q Plot and Detrended Normal Q-Q Plots were also used to assess the distribution of scores.

The results of the Kolomogorov-Smirnov tests for the primary outcome measures are presented in Appendix K. Considering these findings and the additional tests for normality listed above, most variables showed a reasonably normal distribution of scores. Those that were particularly skewed included the *emotional eating* and *cognitive restraint* subscales on the Three Factor Eating Questionnaire (TFEQ), the *physical activity index* on the General Physical Activity Questionnaire (GPAQ) and Other as Shamer Scale (OAS).

These variables were transformed to attempt to achieve a more normal distribution. An ‘inverse’ transformation was used for the physical activity index and a ‘reflect and square root’ for emotional eating, a ‘square root’ for cognitive restraint and ‘logarithm’ for OAS. The transformations improved levels of normality for cognitive restraint and external shame and reduced levels of skew, however physical

activity and emotional eating did not substantially improve (values remained significant which suggested violation of the assumption of normality). Changes in the Kolomogorov-Smirnov Statistic and Significance Values after the transformation are shown in Appendix L. It was decided to use original values and not transformed values due to only some improvements being made using this technique.

Although not all the assumptions for parametric tests were met for every variable, considering the robustness of the data in the context of the 'central limit theorem', it has been suggested that a sample of 40 or more is sufficiently large, even if the original distribution of scores is skewed (Clark-Carter, 2010). Therefore it was considered appropriate to use parametric tests whilst being cautious with interpretations.

4.1.2 Reliability of scales

To measure the reliability of scales used, the Cronbach's alpha statistic was calculated for each scale. Cronbach's alpha coefficients of 0.7 were used as a guide (DeVellis, 2003) for suitable levels of internal consistency. Most of the variables met, or were close to the criteria (coefficients ranged between 0.65 and 0.97). The majority of Cronbach's alphas were also comparable to those demonstrated in other studies. These findings are presented in Appendix M.

However one subscale, *mindfulness* on the Self Compassion Scale (SCS) had a Cronbach's alpha of 0.48, indicating poor internal consistency for the subscale. It has been suggested that it is more difficult to generate good Cronbach's alpha values when there are few items on a scale (Pallant, 2010). The mindfulness scale consisted

of only four items; therefore the mean inter-item correlation was examined. This value was 0.58 (range=0.30-0.85). Clark and Watson (1995) recommended a mean inter-item correlation between 0.15-0.50 for broad constructs, and higher (0.4-0.5) for narrower constructs; therefore results were considered to fall within an acceptable range.

As the Cronbach's alpha for the Total Self-Compassion (0.92) demonstrated very good internal consistency, the items in the *mindfulness* subscale were not removed. This was also considered appropriate as removing one or more of these items would prevent the ability to compare results to other studies.

4.1.3 Preliminary checks

Before analyses the data were assessed for missing values. There were little data missing; this was thought to be because a researcher was available during the completion of most of the questionnaires, and was therefore able to check for missing items. Those that completed the questionnaires using Phase 2 recruitment strategy, tended to complete them in the waiting room with a researcher on hand; most individuals who chose to complete them at home did not return them. Items that were missing were replaced with their mean score for the scale.

A total of 53 participants took part in the study, 33 were male and 20 were female. The majority of participants were white Caucasian (43). The mean age was 46 years old, (SD= 10.2; range=27-66 years). The mean BMI was 45 kg/m^2 (SD=10.2; range= 30 - 86kg/m^2).

Part 1: Means and standard deviations

4.2 Shame, self-compassion and distress

One of the primary research questions sought to examine the level of shame and self-compassion experienced in obese populations. Mean scores and standard deviations for shame, self-compassion and distress are provided (see Tables 4 - 6). Norms from similar populations and other non-clinical groups are also presented.

The mean scores for *internal* and *external shame* (see Table 4) were higher than that found in other non-clinical groups indicating higher levels of shame (e.g. Rosario & White, 2006; Cheung, Gilbert & Irons, 2004). One-group t-tests showed these differences were significant. External shame was also found to be higher than previous research has found in similar populations but internal shame was found to be lower (Franks, 2011).

Table 4. A comparison of sample means with population means for ISS, ISSE and OAS

Variable	Mean (SD)	Non-Clinical Sample Mean	T Score t_{52}	Comparable Mean
ISS	42.3 (24.2)	27.48 (15.76)	4.46*	48.05 (27.0)
ISSE	13.3 (5.3)	17.52 (4.25)	-5.80*	10.68 (6.01)
OAS	46.1 (15.7)	21.73 (10.96)	11.33*	32.06 (17.1)

Comparable means (Franks, 2011) for ISS, ISSE and OAS used participants from a treatment seeking obese population. Non-clinical sample mean (Rosario and White, 2006) for ISS and ISSE used an adult non-clinical population. Non-clinical sample mean (Cheung, Gilbert and Irons, 2004) for OAS used a non-clinical adult population.

Self-compassion scores are provided in Table 5 (possible range = 1-5 for subscales, 1-30 for total self-compassion). Higher scores represented more self-compassion (SJ, I and OI were reversed scored). Scores between 1-2.5 indicate low levels of self-compassion, 2.5-3.5 moderate levels, and 3.5-5.0 indicates high levels. All of the subscales showed moderate levels of self-compassion. Scores were reasonably similar to those obtained from other clinical treatment-seeking obese samples and other non-clinical groups (Franks, 2011; Birnie, Speca & Carlson, 2010).

Table 5. A comparison of sample means with population means for SCS subscales

Variable	Mean	Mean Comparable	Mean Non-Clinical
Total SCS	17.06 (5.1)	16.22 (4.53)	16.35 (4.24)
Self-Kindness (SK)	2.57 (0.92)	2.18 (0.79)	2.49 (0.74)
Self-Judgment (SJ)	2.78 (1.02)	3.26 (1.01)	2.51 (0.85)
Common Humanity (CH)	2.77 (1.07)	2.72 (0.98)	2.87 (0.78)
Isolation (I)	2.85 (0.98)	3.11 (1.06)	2.88 (0.99)
Mindfulness (M)	3.18 (1.34)	2.79 (0.93)	2.91 (0.77)
Over-identification (OI)	2.90 (1.05)	3.10 (1.15)	2.70 (1.07)

Comparable means (Franks, 2011) used participants from a treatment seeking obese population. Non-clinical sample means (Birnie, Speca & Carlson, 2010) used a non-clinical adult population.

Mean scores and standard deviations for *distress*, together with norms from similar and non-clinical populations are provided in Table 6 (possible range= 0-4). The measure is problem scored therefore the higher the score the more problems and distress the individual is experiencing. Mean scores for distress sub-scales demonstrated higher scores than other non-clinical populations (e.g. Core System

Group, 1998), indicating greater distress. One-group t-tests showed these differences were significant (see Table 6).

Compared to means from similar populations, the present sample showed less distress on *wellbeing* and *social functioning* subscales but greater distress on the *problems* subscale (Meekums, Vaverniece, Majore-Dusele & Rasnacs, 2012).

Table 6. A comparison of sample means with population means for CORE sub-scales

Variable	Mean	Mean Non Clinical	T Score t_{52}	Mean Comparable
Wellbeing	1.61 (0.87)	0.91(0.83)	5.86*	2.51 (0.74)
Problems	1.58 (0.74)	0.90 (0.72)	6.69*	1.28 (0.64)
Functioning	1.22 (0.73)	0.85 (0.65)	3.68*	2.78 (0.45)

Comparable Means (Meekums, Vaverniece, Majore-Dusele & Rasnacs, 2012) used participants who were over-weight and obese taking part in a commercial weight-loss programme, Non-clinical population mean (Core System Group, 1998).

4.2.1 Eating behaviour and eating disordered psychopathology

Another research question sought to understand the presence of certain types of eating behaviour in obese populations and additionally the presence of eating disordered psychopathology. Mean scores and standard deviations are provided in Table 7 and Table 8 respectively. Norms from similar populations and other non-clinical groups are also presented.

The range of scores for eating disorder psychopathology (EDE-Q) and its subscales (see Table 7) were higher than norms in other non-clinical groups (e.g. Luce, Crowther & Pole, 2008). One-group t-tests showed these differences were significant (see Table 7). Higher scores indicate more difficulties within this

construct (range= 0-6). The highest means were for shape and weight concern. The scores were slightly lower than those obtained from other treatment-seeking obese samples (Franks, 2011), suggesting fewer problems.

Table 7. A comparison of sample means with population means for EDE-Q subscales

Variable	Mean	Mean Non-Clinical	T Score t_{52}	Mean Comparable
Global	2.74 (1.16)	1.74 (1.30	6.28*	3.67 (1.05)
Eating Conc.	1.75 (1.36)	1.11 (1.11)	3.43*	2.17 (1.67)
Shape Conc.	3.57 (1.58)	2.27 (1.54)	5.99*	4.61 (1.23)
Weight Conc.	3.20 (1.26)	1.97 (1.56)	7.10*	3.85 (1.22)
Restraint	2.44 (1.55)	1.62 (1.54)	3.85*	3.47 (1.37)

Comparable means (Franks, 2011) used participants from a treatment seeking obese population. Non-clinical sample means (Luce, Crowther & Pole, 2008) used an undergraduate population.

The mean scores for TFEQ-18 subscales are shown in Table 8. Emotional eating and uncontrolled eating were higher than those shown in other non-clinical groups (e.g. Lauzon et al., 2004) indicating higher levels of emotional eating. One-group t-tests showed these differences were statistically significant for males from the non-clinical sample (see Table 8). Cognitive restraint was greater when compared to males in a non-clinical population. This difference was statistically significant. Cognitive restraint was no greater than females in a non-clinical population.

When compared to similar populations, mean scores for emotional eating and uncontrolled eating (TFEQ) were similar, however the mean for cognitive restraint was lower, suggesting lower levels of cognitive restraint.

Table 8. Mean scores on TFEQ-R18 and norms from similar and non-clinical groups

Variable	Mean	Non-Clinical Sample Mean	T Score t_{52}	Comparable Mean
Emotional Eating	45.8 (25.5)	Males: 22 (25) Females: 43 (31)	-6.79* 0.80	46.6 (28.7)
Uncontrolled Eating	32.0 (17)	Males: 26 (18) Females: 27 (19)	2.57* 2.14*	35.4 (15.8)
Cognitive Restraint	35.4 (17.8)	Males: 22 (18) Females: 39 (21)	5.48* -1.47	42.6 (15.2)

Comparable means (Angle et. al., 2009) used a non-clinical obese population. Non-clinical sample means (Lauzon et. al., 2004) used a non-clinical adult population.

4.2.2 Comparing eating behaviours with levels of shame: T Test

This study examined a range of eating behaviours including 'comfort-eating' and 'over-eating'. Their relationship with shame was examined. The sample was divided between *'overeating'* (n=20) (those that reported they overeat) and *'non-overeating'* participants (n=21) (those that reported they did not overeat). The sample was also divided between *'comfort-eating'* (n=21) (those that reported in the food diary they comfort ate) and *'non-comfort eating'* participants (n=20) (those that reported they did not comfort eat).

Overeating and shame

An independent samples t-test was conducted to compare *internal shame* scores for *'overeating'* and *'non-overeating'* participants. There was no significant difference in internal shame scores for overeating (M=46.1, SD=19.3) and no-overeating (M=41.6, SD=26.6) t=-.621, p=0.539, two tailed test. This indicated that

participants that disclosed overeating behaviour did not have significantly different internal shame scores to those that stated they did not overeat.

A further independent samples t-test was conducted to compare *external* shames scores for *overeating* and *non-overeating* participants. There was also no significant difference in external shame scores for overeating (M=1.67, SD=0.11) and non-overeating participants (M=1.63, SD=0.17) t=-0.88, p=0.39, two tailed test. This indicated that participants that disclosed overeating behaviour did not have significantly different external shame scores to those that stated they did not overeat.

Comfort eating and shame

An independent samples t-test was conducted to compare *internal shame* scores for 'comfort-eating' and 'non-comfort-eating' participants. There was a significant difference in internal shame scores between comfort-eating (M= 50.8, SD=19.4) and non-comfort-eating participants (M= 36.5, SD=24.9) t=-2.07, p= 0.045, two tailed test. Therefore participants that comfort-ate had significantly higher levels of internal shame than those that did not comfort eat.

An independent samples t-test was conducted to compare *external shame* scores for comfort-eating and non-comfort-eating participants. There was no significant difference in scores for comfort-eating participants (M=1.66, SD=0.14) and non-comfort-eating participants (M=1.63, SD=0.14) t=--0.78, p= 0.44, two tailed test. This indicated that participants that disclosed comfort-eating behaviour did not have significantly different external shame scores to those that did not.

4.2.3 Eating disordered behaviour and thoughts

The research aimed to explore levels of eating disorder psychopathology in an obese population. The proportion of subjects with purging behaviour in eating disorder populations has been reported to be up to 24% (Stoing, Andries, Brixen, Bilenberg, Lichtenstein & Horder, 2012). In the present sample, only 2% of participants had made themselves sick, used laxatives or taken diuretics as a means of controlling their shape or weight over the past four weeks. However, when rating the extent to which they were dissatisfied about their weight, 56.6% of participants rated *markedly dissatisfied*, 22.7% *moderately*, 16.9% *slightly*, and 1.9% *not at all*.

4.2.4 Dietary change and physical activity

Dietary change and physical activity are key aspects involved in weight management. This research aimed to understand eating behaviours in this sample, including dietary change. It also aimed to understand what levels of physical activity are demonstrated in a treatment-seeking obese population.

Previous research has found that in a community sample, minor dietary change occurred frequently in the lives of 99% of participants (Chapman & Ogden, 2010). The results of this study supported this finding. The majority of participants reported having made efforts to change their dietary intake; 16 participants (30%) reported deliberately trying to limit the amount of food they ate *everyday* to influence their shape or weight, 27 participants (51%) had spent some days (between 1- 27 day) within the last month, and 10 participants (19%) had not spent any days trying to limit their food intake to influence their shape or weight.

The majority of participants (n=31, 59%) identified themselves as being inactive. The remaining participants were reasonably spread across groups; 6 (11%) were moderately inactive, 8 (15%) moderately active and 8 participants were active (15%). These results are similar to other findings in overweight and obese populations. Smith, Griffin and Fitzpatrick (2009) reported that 60% of participants in a similar sample did not exercise or exercised infrequently, and 40% exercised regularly.

4.2.5 Gender differences

Another research question aimed to examine gender differences in the variables being studied. Mean scores comparing gender differences for primary outcome measures were reasonably similar across genders. Independent-samples t-tests were conducted however no significant differences were found (see Table 9).

Table 9. T-test comparing males and females on primary outcome variables

Variable	Male (n=33) Mean Score (SD)	Female (n=20) Mean Score (SD)	t	df
GPPAQ	1.6 (1.1)	2.3 (1.3)	-1.9	51
ISS	42.3 (25.9)	42.2 (21.9)	.008	51
OAS	44.4 (16.8)	48.9 (13.8)	-1.0	51
TFEQ Uncontrolled	31.0 (16.5)	33.0 (2.9)	-.47	51
TFEQ Cog. Restraint	34.7 (17.9)	36.7 (18.0)	-.38	51
TFEQ Emotional	48.0 (26.4)	42.1 (24.0)	.82	51
Global EDE-Q	2.9 (1.2)	2.5 (1.1)	1.0	51
Total SCS	2.7 (0.9)	3.1 (0.7)	-1.7	51
Total Core	38.6 (18)	42.5 (22.0)	-.70	51

*Correlation is significant at the 0.05 level (2 tailed), **. Correlation is significant at the 0.01 level.
***. Correlation is significant at the 0.001 level.

Part 2: Correlational Analyses

A summary of Pearson-product moment correlations is shown in a correlational matrix in Appendix N. Correlations that are significant at the 0.05 level (2 tailed) are marked *, those significant at 0.01 level are marked**, and correlations significant at the 0.001 level are marked ***. Cohen's (1998)(Cited in Pallant, 2007) conventions were used to interpret effect size (ie. small, medium, large).

4.3.1 Correlations: Shame, compassion and distress

Associations between shame, self-compassion and distress were examined (see Table 10). There was a strong, significant negative correlation between self-compassion and internal shame ($r=-.75$, $p< 0.001$) and external shame ($r=-.62$, $p<0.001$). This indicated greater self-compassion was associated with lower levels of shame. There was also a strong, significant positive correlation between self-compassion and self-esteem, ($r=0.72$, $p<0.001$). This indicated higher levels of self-compassion were associated with higher levels of self-esteem.

There was also a strong, significant positive correlation between distress and internal shame ($r=0.76$, $p<0.001$) and external shame ($r=0.66$, $p<0.001$) suggesting higher levels of shame are associated with higher levels of distress. There was also a strong, significant negative correlation between distress and self-esteem ($r=-.55$, $p<0.001$) indicating high levels of self-esteem are associated with low levels of distress.

Table 10. Pearson's correlation coefficient for SCS, CORE-OM with the ISS, OAS and ISSE

Pearson-product moment correlations between variables			
	Internal Shame	**External Shame**	**Self-Esteem**
Self Compassion	-.75***	-.62***	.72***
Distress	.76***	.66***	-.55***

4.3.2 Correlations: Cognitive restraint, emotional eating and uncontrolled eating

Associations between eating patterns (TFEQ-R18) and shame, compassion and distress were examined. None of the variables (shame, self-compassion and distress) correlated significantly with *cognitive restraint*. However a number of medium strength significant correlations were found with *emotional eating* (see Table 11). There were positive associations with internal shame and distress. This indicated higher levels of emotional eating were associated with greater internalized shame and distress. A negative association was found between emotional eating and self-esteem, indicating higher levels of emotional eating were associated with lower levels of self-esteem.

Negative associations were also found with self-kindness and common humanity, therefore higher levels of self-compassionate traits were associated with lower levels of emotional eating. Negative associations were also shown with self-judgment, isolation and over-identification (scores reversed), therefore more self-compassion within these domains was also related to lower levels of emotional eating.

Table 11. Significant Pearson's correlation for TFEQ Emotional Eating and Uncontrolled Eating

Pearson-product moment correlations between variables		
	Emotional Eating	**Uncontrolled Eating**
ISS	.44***	.40**
ISSE – Self-esteem	-.39**	-.34**
SCS	-.43***	
CORE-OM Total	.40**	.52***
CORE-OM Wellbeing	.40**	.46***
CORE-OM Functioning	.42**	.57***
CORE-OM Problems	.32*	.40**
SCS- Self Kindness	-.34**	
SCS- Common Humanity	-.31*	
SCS- Self-Judgment	-.46***	-.28*
SCS- Isolation	-.45***	
SCS- Over-identification	-.48***	
Global EDE-Q	.41**	.31*
EDE-Q Eating Concern	.43***	.51***
EDE-Q Shape Concern	.39**	

There were also numerous significant correlations with *uncontrolled eating* (TFEQ) (see Table 11). There were strong, positive correlations with distress (CORE-OM Total) and *functioning*. This indicated that higher levels of distress

(particularly functioning) were associated with greater levels of uncontrolled eating. There was also a strong correlation with *eating concern* (EDE-Q) indicating higher levels of uncontrolled eating were associated with higher levels of eating concern. The remaining variables presented within the table demonstrated medium correlations.

4.3.3 Correlations: Eating disorder psychopathology (EDE-Q)

Eating disordered symptoms have been shown to be associated with high levels of shame in an eating disordered population (Troop, Allan, Serpell & Treasure, 2008). Therefore eating disorder psychopathology, shame, self-compassion and distress were examined.

Numerous significant correlations were found with eating disorder psychopathology (*EDE-Q Global Score)* (see Table 12). There were strong, positive correlations with distress (CORE-OM Total) and internal shame (ISS) indicating a greater level of eating disorder psychopathology is associated with more distress and greater internalized shame. There were strong negative correlations with self-compassion and *self-judgment*. This indicated that higher levels of self-compassion (and less self-judgment) were associated with lower levels of eating disorder pathology.

The remaining variables presented in the table demonstrated medium correlations. Positive correlations were found with distress subscales, external shame and emotional and uncontrolled eating (TFEQ). Negative correlations were found with self-compassion subscales.

Table 12. Significant Pearson's correlations for Global EDE-Q

Pearson-product moment correlations between variables	EDE-Q Global
ISSE- Self Esteem	-.47***
CORE-OM Total	.51***
CORE Wellbeing	.48***
CORE Functioning	.48***
CORE Problems	.47***
TFEQ Emotional E	.41**
TFEQ Uncontrolled E	.31*
SCS Self Compassion	-.50***
SCS- Self Kindness	-.39**
SCS- Common Humanity	-.37**
SCS- Self-judgment	-.57***
SCS- Isolation	-.48***
SCS- Over-identification	-.48***
ISS Internal Shame	.62***
OAS External Shame	.49***

4.3.4 Correlations: Physical activity (GPPAQ)

To help understand what psychological mechanisms may be associated with physical activity levels, correlations were examined between physical activity, shame, self-compassion and distress.

Significant correlations for physical activity are presented in Table 13. There was a significant positive medium correlation between physical activity and self-esteem, indicating greater self-esteem is associated with higher levels of physical activity. There were also medium strength positive correlations between self-compassion and its subscales (common humanity, self-judgment and isolation) indicating an association between greater levels of self-compassion and higher levels of physical activity. There were no correlations between physical activity and shame and distress.

Table 13. Significant Pearson's correlations for GPPAQ

Pearson-product moment correlations between variables	**GPPAQ**
ISSE- Self Esteem	.42**
SCS Self Compassion	.33**
SCS- Common Humanity	.39**
SCS- Self-judgment	.36**
SCS- Isolation	.36**

4.3.5 Correlations: BMI

Correlations were examined to investigate any significant associations with BMI (see Table 14). There was a significant medium strength correlation between the *problems* subscale (CORE-OM) and BMI, r=.34, p<0.01, with greater distress on this subscale associated with higher BMI. There was a small significant positive correlation between BMI and distress, r=.29, p<0.05 with higher BMI associated with higher levels of (total) distress. There was a small positive correlation between eating concern (EDE-Q) and BMI, r=.27, p<0.05, with higher levels of eating concern psychopathology associated with higher BMI. There were no significant correlations between BMI, shame and self-compassion.

Table 14. Significant Pearson's correlations for BMI

Pearson-product moment correlations between variables	**BMI**
EDE-Q Eating Concern	.27*
CORE-OM Total	.29*
CORE-OM Problems	.34*

Part 3: Hierarchical multiple regressions

4.4 Hierarchical multiple regressions

Another research question was to explore whether shame contributed to types of eating behaviour and eating disordered psychopathology over and above the contribution of psychological distress. The data were assessed for their suitability for multiple regressions. Different approaches are taken on appropriate sample sizes, with different formulae being suggested. For this analysis the multiple regression consisted of three independent variables, therefore it has been recommended 45 participants would be an adequate sample (Stevens, 1996). However, 74 participants would also be recommended using different calculation methods (Tachnick & Fidell, 2007).

As the sample size fell within these two values, the sample size was considered to be adequate, whilst being cautious with interpretations. Preliminary analyses were performed to confirm no violation of the assumptions of normality, linearity, multi-collinearity and homoscedasticity.

4.4.1 Emotional eating (TFEQ) – dependent variable

Hierarchical multiple regressions were used to assess the ability of *internal* and *external* shame (ISS and OAS) to predict levels of *emotional eating* (TFEQ), after controlling for the influence of psychological distress (CORE-OM). Results are presented in Table 15. Distress was entered at Step 1, explaining 16% of the variance of emotional eating. After entry of internal and external shame at Step 2, the total

variance explained by the model as a whole was 26%, F(3, 49) = 5.60, p<0.01). The two shame measures explained an additional 10% of the variance of emotional eating, after controlling for distress, R squared change= .095, F change (2,49)= 3.11, p<0.05. In the final model, only internal shame was statistically significant, (beta= .68, p<0.05).

Table 15. Hierarchical multiple regression predicting emotional eating

	Betas	
	Step 1	*Step 2*
Distress	*.40**	*.172*
Internal Shame		*.68**
External Shame		*-.44*
Total R^2 (adjusted R^2)	*.16 (.14)*	*.26 (.21)*
R^2 change	*.16*	*.095*
F for R^2 change	*9.77**	*3.11**
Total F	*9.77**	*5.60**

4.4.2 Uncontrolled eating (TFEQ) – dependent variable

Hierarchical multiple regressions were used to assess the ability of internal and external shame (ISS and OAS) to predict levels of uncontrolled eating (TFEQ), after controlling for the influence of psychological distress (CORE-OM). Results are

presented in Table 16. Distress was entered at Step 1, explaining 27% of the variance of uncontrolled eating. After entry of internal and external shame at Step 2, the total variance explained by the model as a whole was 27%, F (3,49) =6.10, p<0.001). The two shame measures did not explain any additional (0%) variance of uncontrolled eating, after controlling for distress and was not significant, R squared change= 0.003, F change (2,49)= 0.11, p>0.05. In the final model, only distress was statistically significant, (beta= 0.50, p<0.01).

Table 16. Hierarchical multiple regression predicting uncontrolled eating

	Betas	
	Step 1	*Step 2*
Distress	*.518****	*.50***
Internal Shame		*-.07*
External Shame		*.11*
Total R^2 (adjusted R^2)	*.27 (.25)*	*.27 (.23)*
R^2 change	*.27*	*.003*
F for R^2 change	*18.66****	*0.11*
Total F	*18.66****	*6.08***

4.4.3 EDE-Q global score- dependent variable

Hierarchical multiple regressions were used to assess the ability of internal and external shame (ISS and OAS) to predict levels of eating disorder psychopathology (EDE-Q), after controlling for the influence of psychological distress (CORE-OM). Results are presented in Table 17. Distress was entered at Step 1, explaining 26% of the variance of eating disorder psychopathology. After entry of internal and external shame at Step 2, the total variance explained by the model as a whole was 40%, F (3,49) =10.6, p<0.001). The two shame measures explained an additional 13% of the variance of eating disorder psychopathology, after controlling for distress. R squared change=0.13, F change (2,49)= 5.20, p>0.01. In the final model, only internal shame was statistically significant, (beta=0.65, p<0.01).

Table 17. Hierarchical multiple regression predicting eating disorder psychopathology

	Betas	
	Step 1	*Step 2*
Distress	*.51****	*.10*
Internal Shame		*.65***
External Shame		*-.12*
Total R^2 (adjusted R^2)	*.264 (.250)*	*.393 (.355)*
R^2 change	*.264*	*.128*
F for R^2 change	*18.33****	*5.18***
Total F	*18.33****	*10.56****

5. Discussion

5.1 Overview

Due to the treatment resistant nature of obesity interventions need to be improved. For psychological approaches to be successful, individuals seeking treatment need to be better understood. This study examined a range of psychological variables in an obese treatment-seeking sample. Variables included shame, self-compassion, distress, eating behaviour and eating disorder psychopathology. The aims were to understand the extent to which these constructs were present and investigate the relationships between them. The wider intention was for this study to inform whether it would be useful to address these psychological factors.

The results of the study supported this principle. High levels of shame and psychological distress were experienced. Additionally high levels of eating disorder psychopathology, uncontrolled and emotional eating were also found. The main findings and comparative data will be discussed including results from correlations and hierarchical regressions. This will be followed by consideration of clinical implications and future research, and limitations of the study.

5.2 Summary and discussion of results

Participants in the study showed significantly higher levels of internal and external shame and psychological distress, compared with individuals from a non-clinical population. Moderate levels of self-compassion were experienced, similar to those demonstrated in non-clinical groups. These findings were expected as previous research showed obese individuals had similar levels of shame to eating disordered populations (Franks, 2011) and high levels of distress (Webb, 2000). These findings confirm research related to self-conscious negative emotions in obesity may be valuable when considering pathways for treatment.

When shame, compassion and distress were compared to other obese groups mixed findings emerged. Levels of self-compassion were consistent with previous findings. However, levels of external shame and *problems* on the distress scale were higher (CORE-OM), suggesting greater disturbance in these constructs. Internal shame and distress on wellbeing and functioning subscales were lower than previous research has reported, suggesting fewer problems.

Levels of shame were examined to see if there was any variance according to groups of individuals that comfort ate and those that did not. The former group (comfort-eaters) had significantly higher levels of internal shame that the latter (non-comfort eaters). This suggests that specific types of eating behaviour may be related to self-conscious emotions, such as shame. It has been suggested that understanding the meaning of emotional eating may be important in preventing weight gain

(Bennett, Greene, & Schwartz-Barcott, 2013) and therefore may be a worthwhile aspect of treatment.

Significantly higher levels of uncontrolled eating and eating disorder psychopathology were experienced compared to individuals from a non-clinical population. Greene et al. (2011) suggested that high levels of emotional eating and uncontrolled eating might be best addressed by behaviour strategies that include eating in response to internal cues (hunger and satiety) and managing emotional distress without using calorie-dense foods.

Results from this study demonstrated no significant gender differences across variables, however significantly higher levels of emotional eating and cognitive restraint were experienced only compared to *male* norms from a non-clinical population and not females (due to higher levels being found in females in a non-clinical population). This is an interesting finding, as it suggests that levels of emotional eating and cognitive restraint are similar for obese and non-obese females. However they are dissimilar between non-obese and obese males, the latter demonstrating greater cognitive restraint but higher levels of emotional eating.

Although these behaviours seem contradictory, restrained eaters have been described as holding an 'all or nothing' dietary rule that leads to disinhibition and overeating (Blechert, Feige, Hajcak, Tuschen-Caffier, 2010). Cognitive restraint has been defined as consciously trying to limit food intake, an eating behaviour governed by cognitive processes rather than physiological mechanism (e.g. hunger

and satiety) (McLean, Barr & Prior, 2001). Males having higher cognitive restraint may not be helped by weight management.

The restraint theory (Herman & Polivy, 1984) suggested that cognitive control of eating disrupts biological regulation processes. This makes restrained eaters more susceptible to losing control over their eating. The boundary model (Herman & Polivy, 1984) proposed that restrained eaters have a higher tolerance towards hunger and satiety and are therefore less responsive to these internal signs. However they are more vulnerable to the availability of external stimuli that trigger overeating.

With regards to eating disorder psychopathology, significantly higher levels were experienced compared to a non-clinical population. The majority of individuals were markedly-moderately distressed about weight. However only a small percentage of participants reported purging behaviour (2%). These results were expected as they were consistent with previous findings (Franks, 2011).

When compared to other obese groups, levels of emotional and uncontrolled eating were concordant with previous research. However cognitive restraint (TFEQ) was lower suggesting less restraint. Eating disorder psychopathology was lower than previous research has reported, suggesting fewer disturbances in eating behaviour. Nonetheless the overall findings still raise the importance of considering aspects of eating disorder pathology within obesity interventions.

One of the aims of the study was to examine associations between shame, self-compassion, distress and eating behaviours. This study demonstrated that higher

levels of internal and external shame were associated with higher levels of distress, eating disorder psychopathology and lower levels of self-compassion. This was concordant with previous findings that showed eating disorder beliefs and binge-eating behaviour and shame were associated with psychological distress. The applicability of cognitive models has been previously recommended to develop an understanding of distress in clinical obesity (Web, 2000). The results also indicate that targeting one of these aspects of negative affect may be useful in helping to improve others.

Research has suggested that psychological factors play a role in eating behaviour and food overconsumption (Kemp, Bui & Grier, 2013). Emotional eating is an important aspect of obesity as it has been found to mediate the relationship between overeating and body mass change (Strien, Herman, Verheljden, 2012) and has been shown to be related to higher levels of consumption of sweet, fatty foods (Oliver, Wardle & Gibson, 2000).

Kemp, Bui and Grier (2013) described emotional eating as a behaviour embedded in internal experience as well as in an external social context. They found that emotional eaters consistently cited how the experience of a specific or discrete negative emotion ignited eating behaviour. They found that virtually all informants indicated they were not eating to alleviate feelings of hunger but to assuage negative emotion. This study supported these findings; higher levels of emotional eating were associated with higher levels of internal shame, distress and eating disorder psychopathology, and lower levels of self-compassion and self-esteem.

Uncontrolled eating may also have a role in the maintenance of obesity as it has been considered a proximal predictor of food intake (Turner, Lusczynska, Warner & Schwarzer, 2009). Some findings have suggested uncontrolled eating is related to a number of cognitive processes (Ross & Wade, 2004). In this study significantly higher levels of uncontrolled eating were associated with higher levels of eating disorder psychopathology, internal and external shame, distress, and lower levels of self-compassion and self-esteem. However cognitive restraint did not correlate significantly with any of the primary variables.

These results suggest that emotional eating and uncontrolled eating may act as potential risk factors, and be more problematic in terms of their psychological impact, compared with cognitive restraint in this population. It also supports findings that highlight the role of cognitive processes in emotional and uncontrolled eating.

Interestingly the only significant correlations with physical activity were self-esteem and self-compassion. Lower self-esteem and low self-compassion were related to being less active. This is contrary to other findings that have not found a correlation between physical activity and self-esteem in a non-clinical population (Hubbs, Doyle, Bowden, & Doyle, 2012). This suggests that targeting self-conscious emotions in a clinically obese population may improve levels of physical activity, unlike other populations.

BMI showed small significant positive correlations with eating concern (EDE-Q) and distress. Thus, a higher BMI was related to a higher level eating concern

(preoccupation with food, and fear and guilt about eating). Other research has found that preoccupation with food is related to higher fat intake (Timmerman & Gregg, 2003). This study demonstrates similar findings. A higher BMI was also related to more distress; this is similar to another study that showed greater negative affect scores for increasing levels of BMI (Pasco, Williams, Jacka, Brennan & Berk, 2013).

Another aim was to understand whether shame uniquely contributed towards emotional eating, uncontrolled eating and eating disorder psychopathology. This was to establish if distress accounted for the significant positive relationships identified, or whether shame had a specific role. When distress was controlled for, results showed that *internal shame* had a unique contribution to emotional eating above and beyond the impact of distress.

When distress was controlled for, and *uncontrolled eating* was examined, the results suggested *distress* had a significant impact upon uncontrolled eating, rather than shame. When distress was controlled for, and eating *disorder psychopathology* was examined, the results suggested internal shame (and not external shame) contributed significantly to the explanation of eating disorder psychopathology. This suggests that *internal shame* has a unique contribution to eating disorder psychopathology beyond the impact of distress.

These results were interesting as internal shame rather than external shame had a significant impact upon eating disorder psychopathology and emotional eating. Internal shame relates to people's own/private self, self-appraisals and self-critical

styles (Gilbert, Clarke, Miles & Irons, 2004). Gilbert (2003) has acknowledged that individuals who are self-critical may not respond as well to standard cognitive or other therapies. He suggested individuals feel safer retaining their self-critical style, hoping that it will eventually direct them to success. However he proposed developing compassion was a powerful antidote to shaming and attacking self and others (Gilbert, 2003).

5.3 Clinical implications and future research

The findings suggest that there are new avenues for psychological interventions to pursue in the treatment of obesity. Identifying ways to reduce levels of shame may be important in aiding successful weight loss and preventing relapses. Research has shown that when individuals with a family history of obesity were given a consultation emphasising the role of genetic susceptibility, they showed a decrease in self-blame. Individuals who lost weight also reported the lowest means of disengagement coping, body shame and self-blame about eating (Conradt et al., 2009).

Another approach to reducing self-blame is through Compassion Focused Therapy (CFT). This has been proposed as a trans-diagnostic treatment for eating disorders (Goss & Allan, 2010). The approach targets self-conscious negative emotions such as shame and self-directed hostility. The model suggests that shame and self-criticism are forms of safety strategies that can be resistant to change.

However, a key focus for therapy includes increasing an individual's access to, and activation of the soothing, safeness and reassurance system (Gilbert, 2009). Shuman (2012) commented that CFT encouraged individuals to view their problems with over-eating from 'one of understanding, compassion, and motivation to change, rather than judgment, blame, and lack of discipline'. Other findings have also recommended training in self-compassion can reduce distress and facilitate behaviour change in individuals enduring a distressing health-related struggle (Kelly, 2012).

Recommended areas for further research include trialing weight-management interventions that help to reduce levels of shame and of distress in obese treatment seeking patients. As the literature highlights above, this may include consultations that are de-shaming, and interventions that encourage a compassionate approach. Due to the complexity of obesity, it is likely that this would be one part of a multi-faceted approach (nutritional guidance, physical activity, behavioural therapy such as goal setting). Additionally research trialing interventions that varied in intensity (e.g. self-help, group work) would also be useful in establishing the most effective approach.

Friedman and Brownell (1995) highlighted the need for further research to be conducted studying global aspects of psychological functioning in obesity. They disputed the notion that obesity had no psychological consequences. They described that *early studies* failed to explain the etiology of obesity with psychological factors, and that they focused primarily on the *physical consequences* of obesity. They also

criticised previous research for often using only a single measure to evaluate psychological correlates.

They suggested research should focus on identifying risk factors associated with psychological functioning and that a 'second generation' of research was needed to advance knowledge in this area. They stipulated measuring multiple variables and analysing these interactions, establishing psychological correlates for obesity. Their proposed model for research methods to adopt is presented in Appendix O. They highlighted the field was in the early stages of the second generation. Future research utilising this model would also be recommended to advance knowledge in this area.

5.4 Study limitations

The conclusions drawn must be interpreted in the context of the limitations of this research. One of the main criticisms was the relatively low sample size and the effect on the power of the statistical tests employed. To achieve a medium effect size (r=0.3) and power of 0.8 with alpha set at 0.05, it was estimated that 85 participants would be required (Clark-Carter, 2010), however only 53 participants were recruited. Particular caution must be taken at this stage in drawing conclusions. However data collection is currently ongoing until adequate numbers have been reached, at which point more reliable assertions can be made.

Another limitation to consider is that there is an increased cumulative risk of committing Type 1 errors (observing a difference when there is none) when multiple

T tests are conducted. Caution must therefore be taken when interpreting the results found from these statistical tests. Additional adjustments (e.g. Bonferroni correction) could be implemented, however power may then be lost to detect real differences, increasing the likelihood of Type 11 errors (failing to observe a difference when there is one).

Due to the study being part of a mixed methods project (randomised control trial and cross-sectional study), combining two different recruitment strategies made recruitment more complex; if this study was repeated, only the second recruitment procedure would be followed in order to make recruitment more efficient.

The sample used for the hierarchical multiple regressions (53) was also conservative; recommendations were between 45 (Stevens, 1996) and 74 (Tachnick & Fidell, 2007). Therefore conclusions drawn must be understood with this in mind.

Other limitations were that all measures were self-report. This included weight and height (used to calculate BMI). However, as participants were recruited from dietetic clinics, they would have been recently weighed; this may have improved the accuracy of data collected. Nevertheless participants may have responded in what may be considered a socially desirable way, particularly as the researcher was often present to receive the completed questionnaires.

During the assessment process in *Phase 1* of recruitment, it was also noticeable that some responses often seemed inline with dietetic guidance (e.g. when talking about their typical diet). Also as the questionnaires were completed near the time of

their dietetic appointment, this may have affected the types of answers participants gave, due to demand characteristics.

Another consideration is that *Phase two* of the recruitment strategy did not differentiate between participants that had or had not, received bariatric surgery. This could potentially be an extraneous variable as bariatric surgery is likely to affect eating behaviour. However, due to help from dieticians in identifying non-bariatric patients, it was judged the numbers of bariatric participants recruited to the study would have been very low.

Another limitation is that the sample was over-representative of white Caucasians and therefore caution must be taken when generalizing these findings to all populations. As the sample used a treatment-seeking obese population, care must also be taken when generalizing these results to all overweight and obese populations. There may be particular differences between individuals who seek treatment for weight-management, than those who do not access treatment. However the sample included both males and females and a wide age range.

Although there were some variations when results were compared with other obese groups, caution must be taken when making comparisons. Differences in participant characteristics (e.g. obese non-treatment seeking groups or overweight and not obese) or methodology used may account for variances in results.

Another important aspect of this study was its correlational nature. The findings discussed relate to associations between variables and do not imply causality. Thus, one cannot conclude for example that high levels of shame cause unhealthy eating

behaviours. Longitudinal data and randomised controlled trials can help to better specify these causal links.

5.5 Conclusion

Treatment seeking-obese individuals have been found to experience high levels of shame, distress, eating disorder psychopathology and uncontrolled eating. Additionally a number of variables were shown to be associated with high levels of shame (e.g. emotional and uncontrolled eating). Internal shame was shown to have a unique contribution in the explanation of emotional eating and eating disorder psychopathology. Identifying ways to reduce levels of shame may be important in aiding successful weight loss and preventing relapses.

Currently psychological approaches are not a main component of weight-loss treatment. The focus of previous psychological approaches has been primarily behavioural in nature. This study suggests that psychological interventions may have a beneficial role in the treatment of obesity due to the emerging profile of individuals within this group. Incorporating aspects of treatment that address levels of shame and distress, may help improve the effectiveness of weight-management interventions. The next stage for future research therefore includes trialing interventions, such as compassionate mind approaches that specifically target shame and self-criticism.

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Critical Appraisal

1. Project Selection

Selecting this project felt like a natural decision as I was immediately drawn to this area of interest. However, I did not have any previous experience working within a dietetic clinic or an eating-disordered environment at this stage. I was attracted to this area due to my interest in the combination of psychological factors and biological factors involved.

On meeting with my supervisor an outline of this study had already been established. I found this motivating as it enabled me to have a framework of the aims from the beginning. Another benefit was that the research could be combined with a placement at an eating disorders service. This would help to integrate theory and practice, facilitate data collection and enable clinical supervision to be easily accessed. This made me feel I would be well supported.

An important element of this project was that it was a joint piece of research. This was the first time a joint study for a D Clin Psych thesis at University of Leicester had been conducted. This was quite exciting; combining the resources of two trainees would enable us to achieve aims that would otherwise be very difficult due to the size of the project and time constraints. I felt that working with another researcher was often representative of how research is conducted (outside of a course context), and therefore I was looking forward to developing skills that could be

useful at another stage of my career. However, as we were treading into 'uncharted territory' I was slightly apprehensive.

2. Peer and ethical review

As the research progressed it became clear that there were certain ambiguities to overcome (due to the nature of doing a joint research project). One of the hurdles was that we had to adequately demonstrate that we were contributing equally to the project, and working independently where appropriate. As some of the guidelines required consultation with other course staff, this occasionally took time to confirm appropriate procedures. Some of these moments raised anxiety, however to reap the benefits of using this novel approach it was necessary to embrace the requirements that arose.

Initially the research was divided into a qualitative arm and a quantitative arm (of which mine was the former). However after our research proposals were submitted, it became clear that the methodology for the qualitative strand was not ideally suited. A series of meetings and discussions were had with the academic and field supervisor to clarify the aims of the two studies. It was decided that the most useful approach was to conduct two quantitative studies (cross-sectional and RCT). As this change was made early on in the project, it did not cause too much concern.

As I had previously worked as a clinical studies officer for the Mental Health Research Network (MHRN), I was prepared for the detailed ethics form that was

required to gain ethical approval. This was an arduous process but not unexpected. However, I found the Research Ethics Committee (REC) meeting daunting due to it being a new experience for me. Knowing the advantages of getting approved on the first occasion (be it with some minor amendments) added to the pressure. Although it initially felt intimidating, during the meeting I gained clarity of their role and purpose and this reduced the intensity of the experience. Fortunately applications for both ethical and research and development (R & D) approval were unproblematic following submission.

3. Data collection

Due to my previous experience in recruiting participants to mental health research, I felt my background was useful as I understood the importance of developing good links and relationships with clinicians, being present and 'hands on' with recruitment, recruiting at optimum times, and problem-solving issues that arose. However, due to my optimistic nature, it was very disappointing at times when recruitment was slow and below what we had hoped. The number of clinic non-attenders was higher than anticipated.

When using the recruitment procedure in *Phase 1*, there were a number of steps before a participant was recruited. This included initial contact and discussion at the clinic, agreement made by phone to attend the clinic for a 1-1 appointment, completion of the screening assessment, assessing the participant for suitability,

recruitment onto the study, randomization of participant, appropriate materials provided and phone-call intervention if appropriate. This at times felt very labour intensive, particularly as the research progressed and the number of participants to provide telephone support for increased.

This became even more acute when the placement at the eating disorder service ended. A specific day and time had been allocated while at the eating disorder clinic for myself and the other trainee to provide the telephone intervention. However, when this placement ended, it became more difficult; the telephone appointments became spread over a number of days and the times varied. With this change, the research felt more unwieldy.

When we reached adequate numbers for the RCT trial, this enabled different options to be explored to help increase recruitment for this present study. Through supervision sessions we agreed a plan of making an amendment to the Research Ethics Committee (REC) to halt recruitment for the RCT trial and simplify the procedure for the cross-sectional study. When this was approved the study felt more manageable with a less complex recruitment procedure in place. Also I felt this maintained our capacity to provide the telephone-support intervention at a manageable level.

4. Telephone Support Intervention

Providing the telephone support intervention was a rich learning experience whilst also raising challenges. I found the experience extremely rewarding, particularly developing rapport with participants, helping to impart knowledge of the model and seeing positive changes (in ways of thinking or behaving) that the individual was finding helpful. The dialogue was often thought-provoking and motivated me to increase my understanding of their experience.

Upholding boundaries with appointments was difficult at times, due to wanting to be accommodating to participants and not wanting to lose them to 'drop-out' (e.g. participants wanting to rearrange appointment times). Sometimes unexpected difficulties arose such as poor phone signals disrupting phone-calls. This meant more time was needed than was originally expected for this aspect of the study.

Often participants were interested in discussing other issues not related to the self-help book. However skills in managing these difficulties were developed as the research progressed. Often transferable skills used in daily clinical practice were drawn on and developed.

5. Data Analysis

As I had not engaged in data analysis since my undergraduate degree, I was apprehensive about my competencies in undertaking this task. However, I was reassured when starting to analyse the data that I was able recall my basic knowledge

of statistics. This provided a good basis for learning new techniques and grasping the statistical knowledge required for analysing this data set. It was slightly unnerving when there wasn't always a definitive answer to managing and analysing the data (for example, whether to use transformations). However it was helpful discussing these issues in supervision, and researching the area made me feel more confident in making such decisions. I noticed that my confidence and ability to handle data had significantly improved from undertaking this research.

6. Placement and Research

There were a number of advantages being based within a placement that was directly related to the research. Before starting the eating disorder placement, I had no experience and little understanding of the compassion-focused model. Providing the intervention arm for the RCT trial required familiarity and knowledge of the book's content and approach (The Compassionate Mind Guide to Beating Overeating, Goss, 2011). Fortunately working at the eating disorder service for more than six months prior to the intervention arm commencing enabled me to become immersed into a setting that used this model. Therefore I felt the necessary skills had been developed at an appropriate time to enable this intervention to be provided satisfactorily.

When conducting initial screenings in *Phase 1* of the recruitment, risk assessments were carried out. This was to identify participants that may have

required further support than what could be offered participating in the study. On three occasions further guidance was sought from either the research or academic supervisor due to risks being identified. One of these occasions required contacting the local Crisis Team. Due to the availability of both supervisors, and the team at the eating disorder service being aware of the research (the research supervisor was based here), these issues were dealt with quickly and effectively.

Recommendations for research using similar methodology would encourage this practice. Being based within a team that was fully aware and supportive of the research being undertaken was a significant advantage (particularly where it is necessary for risk assessments to be conducted).

7. Joint Working

This research required the dedication of two trainees and a commitment to work effectively together. This experience has encouraged me to do further joint projects in the future. It was easier than expected to divide up tasks and split responsibilities equally. One of the advantages of joint working was that it enhanced the ability to problem-solve due to having another person available to converse with, who was also as dedicated and knowledgeable about the study (other than your supervisor). Having a second person involved also helped maintain the momentum of the study, both practically and emotionally. It was useful to have another person to discuss any frustrations (e.g. slow recruitment) and use each other for motivation and

encouragement. Another benefit was that time could be used more effectively. For example, if one trainee was unable to attend a recruitment session, the other trainee could attend in their place.

Disadvantages were that inevitably the project was more complex. From the outset it seemed difficult to judge the predicted workload involved in the research, and to assess what was manageable within the time-constraints. Another personal difficulty I experienced was being able to 'detach' myself from the RCT trial when writing the research report. I felt a gravitational pull towards the RCT study due to my involvement; it felt incongruent not writing about this.

8. Supervision

Through the use of supervision I was able to develop skills in both academic and clinical practice. Academic supervision helped me become more proficient with aspects of research design and methodology, analyses of data, choosing statistical tests/techniques and presenting findings. Supervision also helped me to focus on the present study and compartmentalize the RCT trial. As with writing the research report, when discussing this study it was easy for my focus to gravitate back to the RCT trial. Therefore having someone to help separate out the different aims and considerations was essential. Clinical supervision enabled me to increase my understanding of Compassion Focused Therapy and it's use with eating difficulties.

This supervision gave me clarity with respects to links between theory and practice and the importance of the research aims.

9. Learning Points

Conducting this research was a rich learning experience. From a theoretical and clinical standpoint the research married these two aspects together. My theoretical knowledge of Compassion Focused Therapy has developed and it's clinical application. Before starting this research I had no direct experience of working in a therapeutic role with obese-treatment seeking patients. This research has enabled me to develop a greater understanding of the experiences of individuals in this population and psychological factors.

The often, complex combination of factors that contribute towards weight management problems, has stimulated my interest in this area further. Experiencing working with individuals with a desire to improve their health, but who are unable to achieve weight losses and adhere to healthy behaviours, has made me curious and inspired to pursue work in this field beyond this present piece of research.

My involvement in this research has increased my confidence in conducting research, particularly larger and more complex studies with which I would have previously felt daunted. It has furthered my understanding on the pragmatics of research, and that being realistic and continually problem solving is integral to the research process. An important learning experience for me was taking research from the beginning stages of the research question and following this through to the end

stages, analysing the results and collating these into a report. These skills I feel will be instrumental in continuing research within my role as a clinical psychologist.

APPENDIX A: Data Extraction Table for Individual CBT Trials

Study Id	Author Date and Country	Title and Journal	Method	Participants	Interventions	Outcomes	Results
1	**<u>Annesi (2010)</u>** United States of America	Relations of changes in self-regulatory efficacy and physical self-concept with improvements in body satisfaction in obese women initiating exercise with cognitive-behavioural support. Journal: Body Image	RCT, intention to treat analysis Intervention: 6months Attrition: 10% (16) dropouts *before* start of intervention. No further dropouts.	Volunteer sampling N=134 Age: 22yrs- 62yrs Gender: Females BMI:-30-45 kg/m2 Exclusion Criteria: Inadequate physical conditions for exercise, pregnant, taking medication for weight loss or psychological/psychiatric condition.	Condition 1 *Treatment* Exercise (3 sessions per week)+ Nutrition (6x 60min)+ CBT-wellness specialist & utilising computer program (6 x 45min) N= 68 Condition 2 *Control* Exercise (3 sessions per week)+ Nutrition (6x 60min)+ Wellness Specialist (physiology/exercise based) (6 x 45min) N=66 Follow-up: baseline and 24 weeks.	Weight loss (kg), body composition Body satisfaction, self-efficacy, physical self-concept, and attendance.	CBT was associated with improvements in weight, body composition, physical self-concept, exercise self-efficacy and body satisfaction beyond those associated with exercise supported by typical methods. For weight, and body composition, change was significant overall and only the CBT group demonstrated significant within-group improvements.

2	**<u>Cooper et al. (2010)</u>** United Kingdom	Testing a new cognitive behavioural treatment for obesity: A randomised controlled trial with three-year follow-up Journal: Behaviour Research and Therapy	RCT, stratified computer-generated randomisation Intervention: 24/44 weeks Attrition: 14% did not complete treatment (21 participants), two participants withdrawn on medical grounds.	Volunteer sampling N=150 participants Age: 20-60years Gender: Female BMI criteria: 30-39.9kg/m2 Exclusion Criteria >10% weight loss in last 6months, major medical/psychiatric illness, current psychiatric or psychological treatment, disorders known to affect eating, weight, metabolic rate or where calorie/fat content are contraindicated.	Condition 1:CBT 24 x 50min 'one-one' sessions over 44 weeks. N=49 Condition 2: Behaviour Therapy (BT) 24 X 50min 'one-one' sessions over 44 weeks. N=50 Condition 3: Guided Self-help (GSH) 24 week: - two initial face-to-face sessions with therapist followed by up to 15, 20min telephone sessions. N=51 Follow-up: Three years from end of treatment (week 44) or week 24 if GSH group. Baseline, end of treatment (24/44 week), then 6, 12,24,36,months after the 44 week assessment.	Weight-loss, EDE-Q, general psychiatric features, quality of life, mental and physical well-being.	At 24 and 44 weeks, those who received BT lost significantly more weight than those in GSH but no significant difference between BT and CBT. At 3 year follow-up participants had regained almost all the weight lost.

3	**Rodriguez-Hernandez et al. (2009)**	Adding cognitive behavioural treatment to either low-carbohydrate or low-fat diets: differential short-term effects. Journal: British Journal of Nutrition	RCT, intention to treat analysis. Intervention: 6months Attrition: 2.8% dropped out (all in CBT condition).	Volunteer Sampling N= 105 Age: adults, 25-61 years Gender: Females BMI Criteria : >30kg/m2 Exclusion Criteria: Pregnancy, hypothyroidism, heart failure, renal and hepatic disease.	Condition 1: CBT plus Low-carbohydrate diet (CBT-LC) Individual sessions – weekly psychological support and 1hr weekly diet and exercise advice over 6months. N=26 Condition 2:CBT plus Low-fat diet (CBT-LF) Individual sessions – weekly psychological support and 1hr weekly sessions for diet and exercise advice for 6months. N=21 Condition 3: Control group with Low-fat diet (C-LF) 1hr weekly sessions for diet and exercise advice for 6months. N=29 Condition 4 Control group with Low-carbohydrate diet (C-LC) 1hr weekly sessions for diet and exercise advice for 6months.N=29 Follow-up: Baseline & 6mnth	Body fat, waist circumference, weight, blood pressure, depression, anxiety, serum glucose and TAG levels.	Adding CBT to either the low fat or low-carbohydrate diet produced significantly greater short-term weight loss in obese women compared with diet alone. There were no significant differences in levels of anxiety and depression comparing treatment and control groups.

4	**<u>Grave et al. (2004)</u>** Italy	Cognitive-behavioural guided self-help for obesity: A preliminary research Eating and Weight Disorders	RCT (random permuted blocks). Intention to treat analysis. Intervention: 18 wks Attrition: 210 randomised, final sample 161. 72partic. dropped out at end of treatment (44.7%) (24 from GSH, 28 from M-GSH, and 20 from CC). At 6 month follow up 50% in GSH & 34% in M-GSH completed the evaluation.	Volunteer Sampling N=161 Age: Mean age 36-37yrs (SD 5-6).Gender: Mixed. BMI Criteria>30 kg/m^2, Absence of weight loss in last 4 months (>4kg) Exclusion Criteria: Conditions that contraindicate weight-loss, i.e. presence of substance abuse, excessive alcohol, severe renal, cardiac, hepatic gastrointestinal, neurological, psychiatric, endocrine disorders or concomitant use of medications or conditions that alter eating habits and weight.	Condition 1: Guided Self - Help (GSH) 9 x 20min sessions every two weeks where the therapist supported participants to use the self-help book. Program led rather than therapist led. N=58 Condition 2 Minimal guided self-help (M-GSH) 9 x 5 minute phone calls every two weeks. Self-help guidance, minimal reinforcement from therapist. N=53 Condition 3 Control Group (no treatment) N=50 Follow-up: Baseline, 18 weeks (after intervention), 6months (Control group no 6 month follow up)	Body weight, eating disorder features, self-esteem, quality of life, and content knowledge of self-help manual.	A significant reduction in body weight occurred in GSH and M-GSH but not in the control group. At 6-month follow-up, 32.7% of GSH and 15.1% of M-GSH were able to maintain at least a 5% weight loss. GSH and M-GSH: post-treatment and 6month follow up showed an improvement of body weight concern, and eating disorders attitudes but no improvement of self-esteem.

APPENDIX B: Data Extraction Table for Group CBT Trials

Study Id	Author Date and Country	Title and Journal	Method	Participants	Interventions	Outcomes	Results
5	**Ash et al. (2006)** Australia	A randomised control trial comparing lifestyle groups, individual counseling and written information in the management of weight and health outcomes over 12 months. Journal: International Journal of	RCT Intervention: 12months. Attrition: 191 randomised, 15 dropped out at baseline, 176 received intervention (15 dropped out during allocation stage). Of those who received	Volunteer Sampling N=176 Age: 18yrs+ (Mean age 48) Gender: Mixed BMI Criteria: 27kg/m2 and above Exclusion Criteria: BMI below 27kg/m2, < 18yrs, non English speaking or cognitive impairment	All required to purchase nutrition CBT based resource booklet. Condition 1 Group-based CBT (Fat Booters Incorporated, FBI)- 8 week lifestyle behaviour management group (1 ½ hour per week for 6 weeks with follow up at 8th week) then monthly follow up visits until 6 months N=57	Weight and body composition, BMI, waist circumference, physical activity, health status, self-efficacy, wellbeing, attendance.	The change in weight for the FBI group was significantly greater than the BO group at 3 and 12 months. Change in weight in the IDT group did not differ from the FBI group at any time point. For all groups, waist circumference was

		Obesity	allocation to an intervention, in the BO group 37% had complete data, IDT group, 67%, and for the CBT group, 45% had complete data.		Condition 2 Individualised dietetic treatment (IDT)- weekly contact with dietician for 8 weeks & exercise prescription the monthly follow up visits until 6 months. N=65 Condition 3 Nutrition Resource Booklet (BO) (Control Group)- follow up at 3,6 and 12 months. N=54 Follow-up: Baseline, 3 months, 6 months, 12 months.		significantly less than baseline at all time points. Both intervention groups had greater self-efficacy than the BO group. Significant dropouts occurred over time for all three groups.

6	**Christensen et al. (2011)** Denmark	Diet, physical exercise and cognitive behavioural training as a combined workplace based intervention to reduce body weight and increase physical capacity in health care workers- a randomised controlled trial. Journal: BMC Public Health	RCT Intervention: 12 months (3 months reported in this article) Attrition: 7.5% after three months.	Opportunity Sampling N= 98 Age: 18 year + (upper age not stated, however participants are from a working population)- Mean age 45.5 (SD 9.5) Gender: Female BMI Criteria: >25 or body fat % > 33 (18yr – 40yrs) or >34 (age>40yrs) Exclusion Criteria: Elevated blood pressure, angina pectoris, heart/lung medication, current or pervious illness and trauma, herniated disc, tennis elbow, golf elbow, Carpal Tunnel Syndrome, significant musculoskeletal pain and pregnancy.	Condition 1 Intervention group- 0-3 months interventions focused on weight loss, 3-12 months focused on weight maintenance. Intervention: Weekly sessions (1hr) including dietary recommendations and weight measurements, weight loss targets, initiating leisure time fitness exercise (30minutes). CBT (15mins), strengthening exercises (15mins). N=54 Condition 2 Reference group- Monthly oral lecture (2hours) based on	Body weight, Body Fat, Waist circumference, Blood pressure, Aerobic fitness.	Intention to treat analysis. Intervention group significantly reduced body weight with 3.6kg, BMI from 30.5 to 29.2, body fat percentage from 40.9 to 39.3, waist circumference from 99.7 to 95.5cm and a decrease in blood pressure. There was a significant difference between the intervention and control group on all measures.

					the Danish National Board of Health and the Ministry of Food. Agriculture and Fisheries public websites and concerned the Danish Dietary recommendations. N=44 Follow-up: Baseline, 3 months, 12 months (only 3 month data is reported)		
7	**<u>Gohner et al. (2012)</u>** Germany	Two-Year Follow-Up of an Interdisciplinary Cognitive-Behavioural Intervention Program for Obese Adults Journal: The	Quasi-experimental design. Duration: 12 months Attrition: 4.8% in the Intervention group	Volunteer Sampling N= 598 385 participants in Intervention group, 213 in Control Group. Age: >18 years Gender: Mixed BMI Criteria: 30-40 kg/m^2	Condition 1 Intervention Group- the standardised M.O.B.I.L.I.S program. Four components: medical examinations, exercise program, dietary advice, group sessions (psychological	Self-efficacy, Strength of goal intention, Implementation intentions, Physical Exercise, Diet, Weight, Body Mass Index.	At 24month follow-up, the intervention group showed weight loss of 5.57%, the Control group lost 1.12%. The results yielded significant interaction

		Journal of Psychology: Interdisciplinary and Applied	discontinued within the first half of the year and 3% of the Control Group. In the Intervention group, 97% returned the 1st questionnaire, 85% the 2nd, 82% the 3rd and 50% the 4th. In the Control group, 80% returned the 1st questionnaire, 76% the 2nd and 67% the 3rd.	Exclusion Criteria: Possession of at least one obesity-related risk factor, symptom-free physical power of at least 1 watt per kg of weight and sufficient motor skills. Generally accepted contraindications for physical stress, type 1 diabetes, liver and kidney damage with an indication of protein restriction psychiatric illnesses and eating disorders, intake of anorexigenic drugs, and the condition after a stomach stapling operation, or a malignant tumor disease with a subsequent illness-free interval of less than five years. Exclusion for the CG was participation in a systematic behavioural change program.	support based on elements of social cognition research, motivational aspects and elements of action control theories). N=385 Condition 2 Control Group (No weight reduction program). N=213 Follow-up: Baseline, 6, 12, 24 months, (Control Group questionnaires completed at 12months		terms, (group x time) the intervention had a substantial effect on food choice, and level of exercise. Two years after baseline the IG was still physically active 3.23hrs per week, compared to 1.75hrs reported for the CG. The IG group showed significantly enhanced self-efficacy, stronger goal intentions, and more detailed

							implementation intentions than the CG at follow-ups.
8	**Minniti et al. (2007)** Italy	Individual versus group therapy for obesity: comparison of dropout rate and treatment outcome. Journal: Eating and Weight Disorders	Quasi-Randomisation. Intervention: 6 months Attrition: After 6 months 37.2% had abandoned the treatment programme. (54.2% of initial sample were in the IT group and 15.8% of initial sample were in the GT group).	Opportunity Sampling N= 129 participants Age: 18-65 yrs. Gender: Female Weight Entry Criteria: BMI>25gk/m2 People seeking treatment for overweight and obesity from the outpatient department. Exclusion Criteria: Not stated.	Condition 1: Indiv. Nutritional Counselling (IT) 12 x individual meetings with a dietician- 20min. fortnightly (6month). One medical visit with physician at the 3rd month. N=72 Condition 2:Cognitive Behavioural Group Therapy (CG), 10 x weekly CBT group meetings (90minutes) conducted by a psychologist and a dietician. One medical visit with physician at the 3rd month.	Body weight, waist circumference, Dropout rates, Obesity Related Well-being, obesity related somatic symptoms and physical functioning, Psychosocial impact, Body Uneasiness Test. Psychopathological distress, Binge-eating Scale.	Dropout rates were higher in IT than GT. After 6 months of treatment completers lost 6.39% of initial weight and obtained improvements in all studied variables except section two of the Body Uneasiness Test and psychological distress. No significant difference between IT and

					Two booster sessions (4th and 6th month). N=57 Follow-up: Baseline and after 6months of treatment.		GT.
9	**<u>Munsch, Biedert and Keller (2003)</u>** Switzerland.	Evaluation of a lifestyle change programme for the treatment of obesity in general practice Swiss Medical Weekly	Quasi-RCT. Duration of intervention: 16 sessions group therapy. Attrition: Dropout rate until end of treatment (16 sessions) was 23% (GP setting), 37% in Clinical center and 29% in Control group. Dropout rate between end	Volunteer Sampling N=122 Age: Average age 45.2 (SD: 23.9) Gender: Males and females Ethnicity: Not stated. Weight Entry Criteria : BMI> 30KG/M2 Exclusion Criteria: Severe mental disorders, insulin-dependent diabetes, hypothyroidism or terminal diseases were excluded.	Condition 1 Group Treatment (CBT) 16 x 90 minutes sessions group therapy. A psychologist and a dietician trained practitioners. N=53 + N=52 Condition 2 Control group- non-specific comments about general measures to lose weigh were given. N=17	BMI, eating behaviour, general psychopathological symptoms, body image, quality of life.	Treatment groups reduced starting weight by 5% and stabilised it until FU after one year (stat. signif. in GP setting). Treatment groups showed an increased sense of control over eating behaviour and feelings of distractibility and hunger were reduced

			of treatment and 12month FU was 0% (GP location) 52% (clinic location) 33% Control group.		Follow-up: Baseline, After 16 sessions of group therapy, 12months.		after treatment and FU(p<05). Also showed increases in feelings of attractiveness regarding body and shape.
10	**Wylie-Rosett et al. (2001)** United States of America	Computerised weight loss intervention optimises staff time: the clinical and cost results of a controlled clinical trial conducted in a managed care setting. Journal: Journal of The American Dietetic Association.	RCT Duration of treatment: 12 months. Attrition: 81% completion rate at 12months.	Volunteer Sampling N=588 Age: Mean age 52 yrs. (SD: 11) Gender: Male and female Attrition: Between 81-86% white in each group. BMI>25 OR BMI 24> (plus 1 cardiovascular risk factor). Willingness to follow the study protocol, which included a refundable $100 deposit. Intention to move beyond commuting distance within the next 12 months, medical conditions that would interfere	Condition 1 CBT Workbook A standalone program. N=116 Condition 2 CBT Workbook and Computer Intervention Software program to guide participants in using the workbook and tailor goals based on their prior computer use and the answers they provided on baseline	Body weight, waist circumference, diabetes, cardiovascular risk, medication usage, dietary and exercise habits and quality of life, cost of interventions, satisfaction.	All the groups achieved a statistically significant weight loss. The most intensive intervention group lost significantly more weight than the least intensive group. The mean weight loss in the intermediate group was not

				with study participation and unwillingness to follow the study protocol.	questionnaires. Computer sessions intended to be approx. 20-30 minutes in length. N=236 Condition 3 CBT Workbook, Computer Intervention and Staff consultation 6 closed-group workshop sessions and up to 18 telephone or face-to-face consultations with a registered dietician and/or cognitive behavioural therapist. N=236 Follow-up: Baseline, 1 year.		significantly greater than the least intensive group. The most frequent usage of the computer program resulted in greater weight loss. Mean energy intake and % of energy from fat decreased from baseline in all 3 intervention groups ($p<0.1$). Satisfaction with the program increased as intervention intensity increased.

APPENDIX C: Risk of Bias Table

Id	Author and Date	Intervention Defined and Standardised	Group Differences	External Validity	Equal Sized Groups	Random Sequence generation (selection bias)	Allocation Conceal-ment (selection bias)	Blinding (Performance bias and detection bias)	Incomplete Outcome data (attrition bias)	Notes
1	**Annesi (2010)**	Defined- Yes Standardised- Wellness specialists completed 1 day training by a Masters-level educator and a minimum of 10hours of supervised practice. Fidelity of study processes was monitored.	No significant group differences (participant characteristics)	Yes	Low Risk	Unclear	Unclear	Wellness specialists were unaware of the goals of the study.	Unclear	No data after 6 months (intervention). Body composition was significantly lower at baseline for the Treatment group- however adjusting for this had a minimal effect on results therefore only results from non-adjusted scores are reported. Expectation effects

2	**Cooper et al. (2010)**	Defined- Yes Treatments fully manualised.	Low Risk	Yes	Low Risk	Randomised by HAD (who had no involvement in participant recruitment) using a stratified computer-generated randomisation scheme with random permuted blocks of varying size within two strata.	Low Risk	Assessments conducted by independent assessors blind to the conditions.	GSH Group- 51 completers at baseline, 44 by the last 36month follow-up. BT Group- 50 completers at baseline, 44 by the last 36month follow-up. CBT Group- 49 completers at baseline, 46 by the last 36month follow-up. Low Risk	Therapists were two clinical psychologists and one dietician. Compliance with the assessment protocol was high. 4% met criteria for BED (a subsidiary aim of the study was to explore the relationship between binge eating and weight loss).

3	**Rodriguez-Hernandez et al. (2009)**	Defined- Yes Standardisation-Unclear	Low risk	Yes	Low risk	Unclear	Unclear	Unclear	3 women dropped out from the treatment group. (2.8%). Low risk	Only female participants. No longer term follow up results.
4	**Grave et al. (2004)**	Defined: yes Standardisation: Therapists received training explaining the content of the therapist's manual. Low risk	Low risk	Yes	Low risk	Random permuted blocks and a random numbers table.	Neither the participants nor the assessor knew to which treatment were assigned until after the initial assessment had been completed. Low risk.	Unclear (regarding follow up assessments)	At 18 weeks, 44.7% dropped out (24 from GSH, 28,M-GSH and 20, CC). At 6month FU 50% subjects in the GSH group and 34% in the MGSH group completed the evaluation.	Results are for initial weight-loss and not longer-term weight loss. High drop out rate reduces the predictive value of the results. The design of the study doesn't allow for identifying whether the weight loss obtained is due to the manual or contact with the therapist. No control was made for the adherence to the treatment manual by the therapists.

5	**Ash et al. (2006)**	Defined- Yes Yes (standard protocol and manual provided).	Baseline-no differences. Representativeness of sample decreased due to significant difference in gender, age, BMI and body-fat percentage between participants with complete data, missing data and dropouts.	Yes	Low Risk	Random number table. Allocation ratio for the two hospital sites (public and private) was 2:1.	Unclear	Unclear	FBI number of completes includes n=57,n=38,n=32,n=28 at baseline, 3 months, 6months and 12 months respectively. IDT number of completers includes n=65,n=51,n=46,n=48) at baseline, 3 months, 6months and 12 months. BO number of completers includes	Dieticians and nutrition staff collected patient data and provided group facilitation. Large attrition rate, particularly from the control group. Levels of physical activity at baseline were considerably greater than the general population, which could be due to over-reporting or over estimation using the IPAQ.

									n=54,n=31,n=24,n=24 at baseline, 3 months, 6months and 12 months. Of those who received allocation to an intervention, in the BO group 37% had complete data, IDT group, 67%, and for the CBT group, 45% had complete data. High Risk	

6	**Christensen et al. (2011)**	Defined- yes Standardisation: Trainers provided literature describing the therapy, and met before each phase to discuss the content and materials for the next sessions. Two hour weekly meetings were held with instructors and the project manager. Low risk.	At baseline there was no significant differences between the intervention and the control group. Low Risk.	Yes	Low Risk	Cluster randomisation.	Randomisation done by external research group and done using sealed envelopes from a bag. Low Risk	Single blind study.	98 participants at baseline, 91 completers at 3 months follow-up. Low Risk	This was a workplace health promotion intervention. Low attrition rate and successful adherence. Only 3-month follow up data is reported. The importance of each of the components of the intervention cannot be evaluated individually.

7	**Gohner et al. (2012)**	Defined: yes Standardised and theory driven interdisciplinary training program. Low risk.	Low risk	Yes	Unclear	Medium Risk	Quasi-experimental design. n/a	N/a	N/a	Intervention group: 97%, 85%, 82% returned the first, second and third questionnaires respectively. Control group: 94%, 80% and 76% returned the first, second and third questionnaires respectively. Low Risk
8	**Minniti et al. (2007)**	Defined- yes. Standardisation- unclear.	Low risk	Yes	Low risk	Quasi-Randomisation. Participants could decline group therapy, be excluded from the condition and given individual counseling.	Unclear	Unclear	54% of the IT group and 15.8% of the CG group dropped out by the 6months evaluation, total of 48 of 129 subjects (37.2%).	Only female participants. Only quasi-randomisation. No follow up results.

9.	**Munsch, Biedert and Keller (2003)**	Defined? - Yes Standardised manual-based procedure. Low risk.	Low Risk	Yes	High Risk	Unclear	Unclear	Unclear	GP Treatment: Dropout rates 23%, 0% at end of treatment (16 sess) and 12 mnth respectively. GP Control: dropout rates 29%, 33% at end of treatment (16 sess) and 12 months. Clinic Treatment: drop-out rates were, 37%, 52% at the end of treatment (16 sess) and 12 mnth	Distorted ratio between treated and control participants due to dropout rate. Only comparison between the treatments groups at the time of the 1-year follow up reached statistical significance. No randomisation of the participants into the two treatment settings (GP and clinical setting). High dropout rate- this differed between settings/conditions.

10	**10. Wylie-Rosett et al. (2001)**	Defined- yes Standardisation: Two conditions- low risk One condition- unclear.	The intervention groups were similar with respect to baseline characteristics. The Control group had a higher mean fat intake and a larger mean wait measurement.	Yes	Unequal sized groups between the treatment groups and the control group.	Unclear	Unclear	Unclear	81% completed the 12months study with dropout rates of 16%, 22%, and 17% for the least, intermediate and most intensive intervention groups respectively.	Those randomised had a greater proportion of people with diabetes (10.9% vs. 4.8%, P=0.04) and a greater proportion of people who felt comfortable using the computer (77.7% vs. 71.49%, p=0.02) compared with the initial sample (before consent was gained).

APPENDIX D: Table of Range of Measures

Type of Measure	Specific area of measurement	Number of Trials That Included Measurement
Physical/Health Related Measures	Aerobic fitness	1
	Body Weight	9
	BMI	3
	Blood Pressure	2
	Body Fat Composition	4
	Cardiovascular Risk	1
	Diet/Eating behaviour	3
	Diabetes	1
	Health Status	1
	Medication Usage	1
	Obesity related somatic symptoms & Physical Functioning	1
	Physical Activity	3
	Serum glucose and TAG levels	1
	Waist Circumference	5
	Weight Change	2
	Binge-eating	1
	Body image	1
	Body Satisfaction	1
	Body Uneasiness	1

	Eating Behaviour	1
	General Psychiatric features	5
	Implementation intentions	1
	Obesity related Wellbeing	1
	Physical Self-concept	1
	Psychosocial Impact	1
	Satisfaction	1
	Self efficacy	3
	Self-esteem	1
	Strength of goal intention	1
	Quality of Life/Life Satisfaction	4
	Wellbeing	2
Other Measures	Attendance	2
	Cost of Interventions	1
	Drop-out rates	1
	Knowledge of Self-help Manual	1

APPENDIX E: Comparisons of Mean Weight Change Post Treatment

Figure 2: Mean Weight Change at the End of Treatment (six months) (Annesi, 2010)

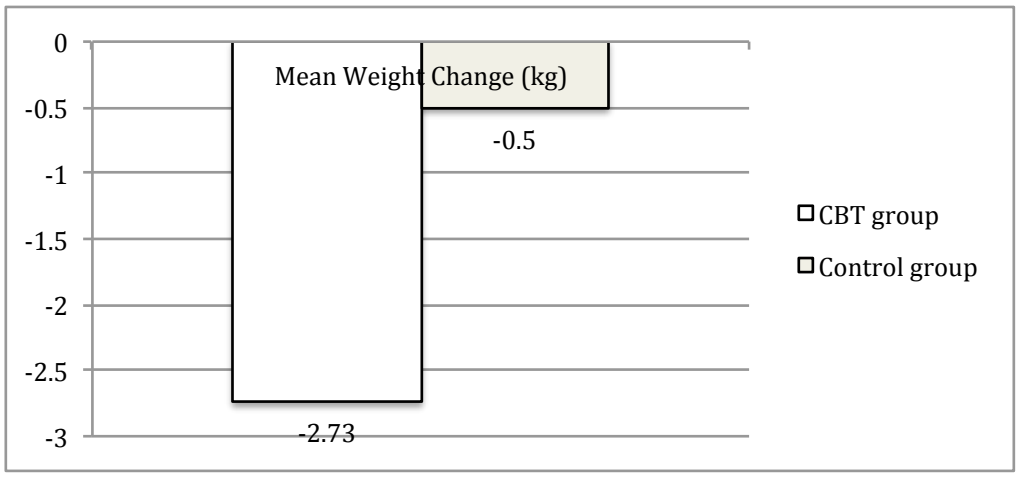


Figure 3: Mean Weight Change 36 Months After the End of Treatment (Cooper et al., 2010)

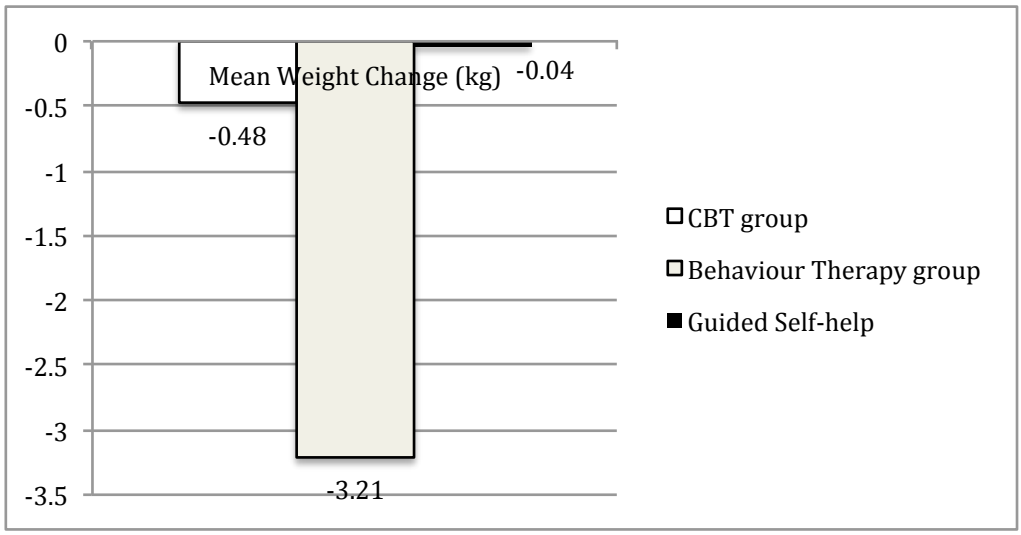


Figure 4: Mean Weight Change Six Months Post-Treatment and at 18 weeks for the Control Group (Grave et al., 2004)

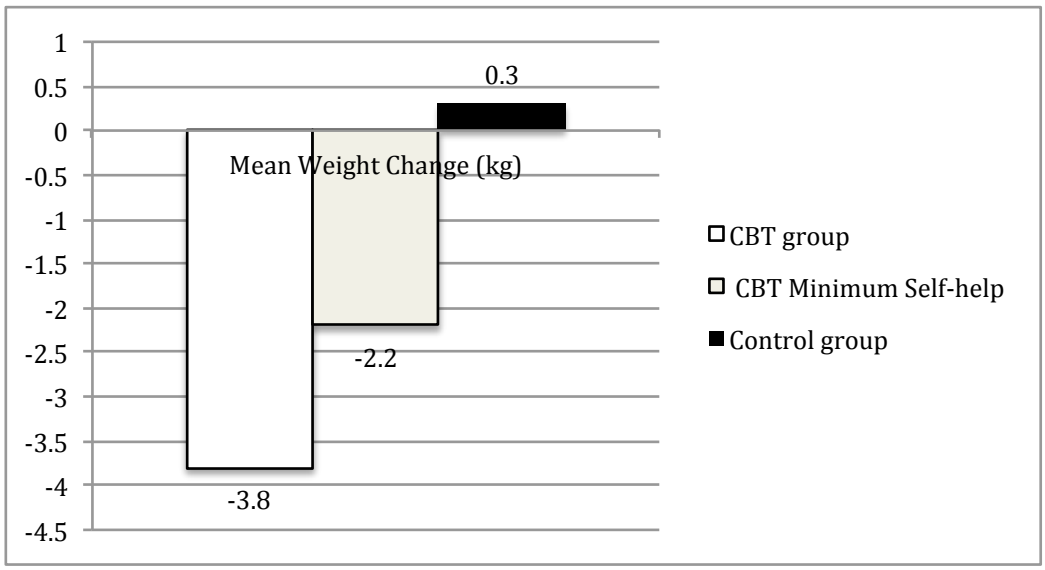


Figure 5: Mean Weight and BMI Change at the End of Treatment (Six months) (Rodriguez-Hernandez et al., 2009)

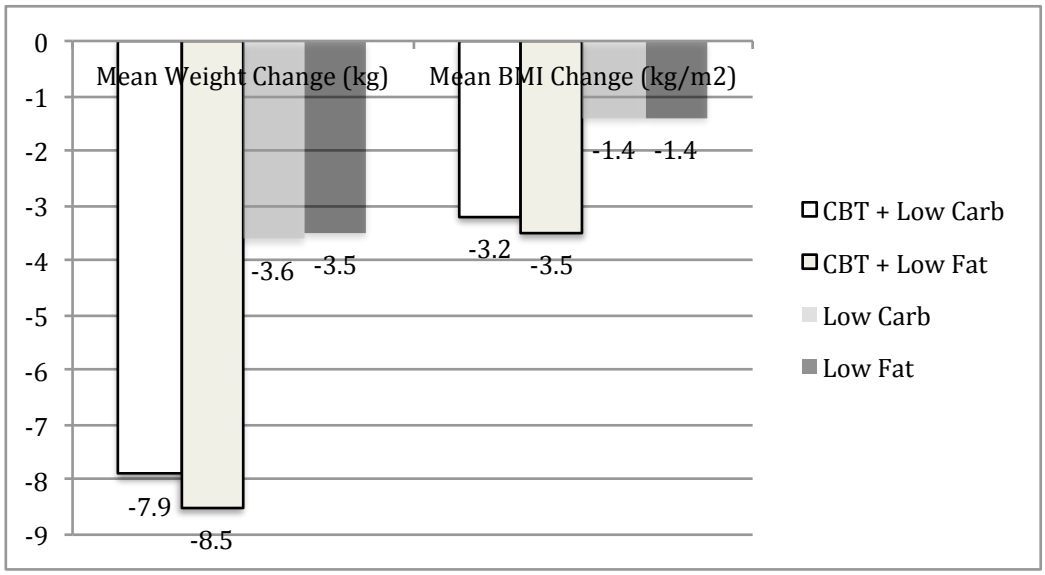


Figure 6: Mean Weight and BMI Change at the End of Treatment (three months duration) (Christensen et al. 2011)

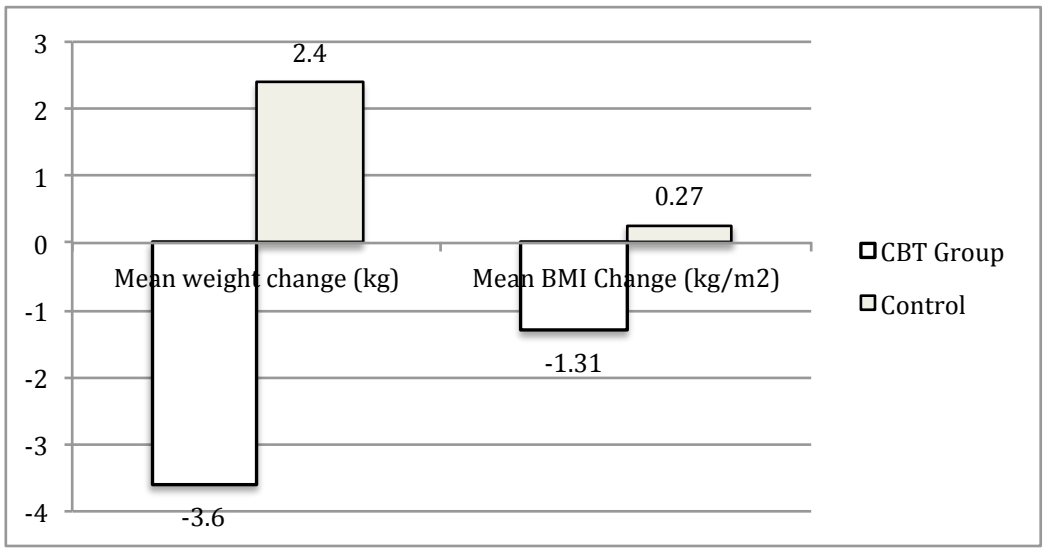


Figure 7: Mean Weight and BMI Change 12 months Post-treatment (24 month follow-up) (Gohner et al. 2012)

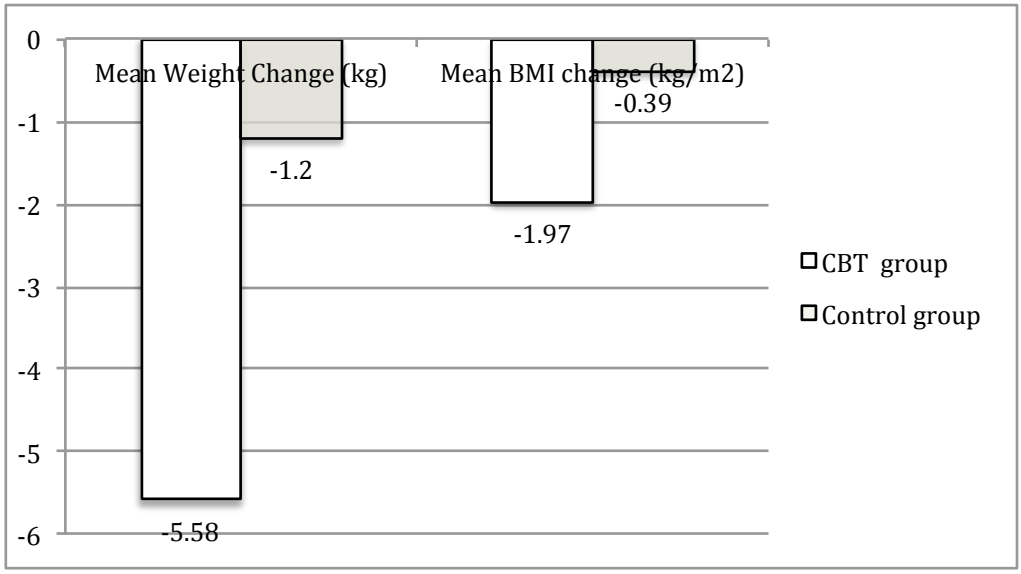


Figure 8: Mean Weight and BMI Change at the End of Treatment (six months duration) (Minniti et al., 2007)

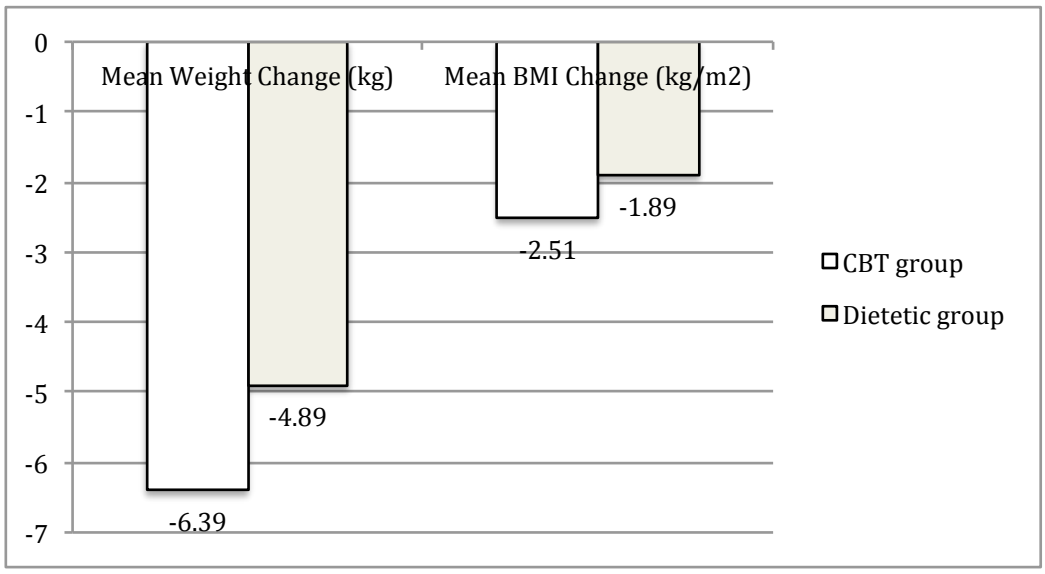


Figure 9: Mean Weight and BMI Change Six Months Post-Treatment (12 month follow-up) (Ash et al., 2006)

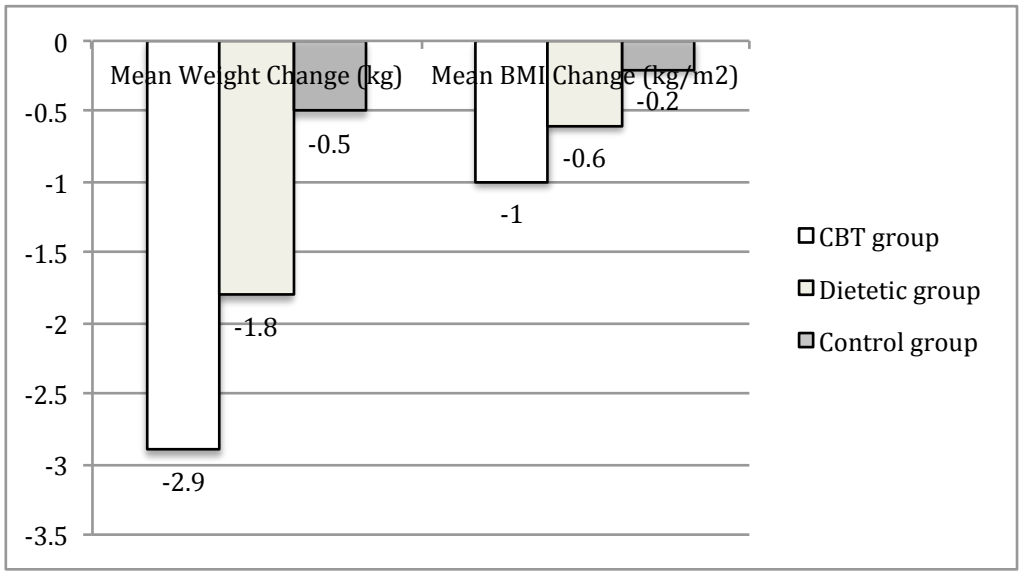


Figure 10: Mean Weight and BMI Change 12 months Post-Treatment (Munsch, Biedert & Keller, 2003)

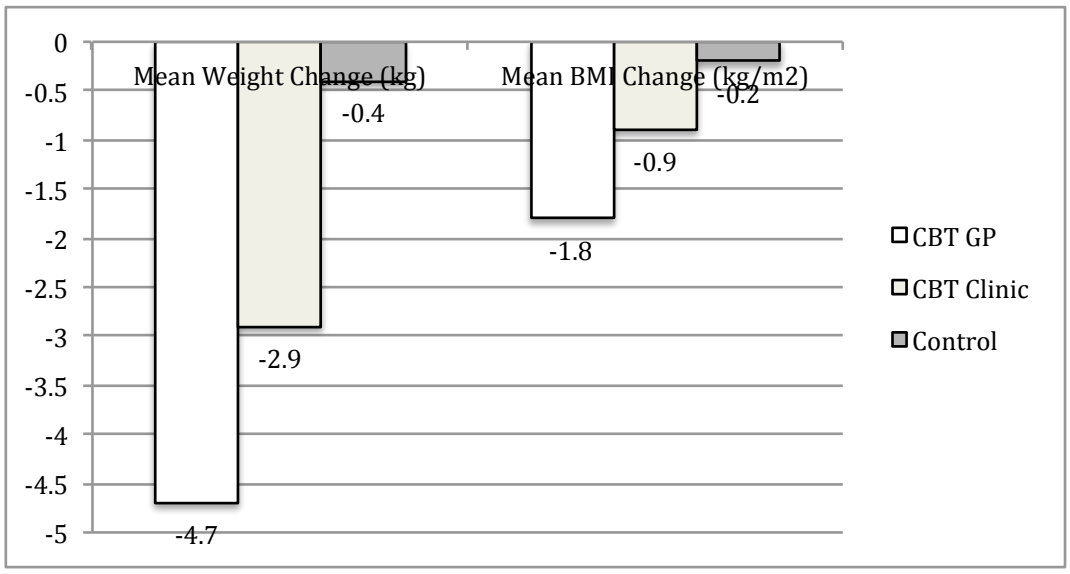
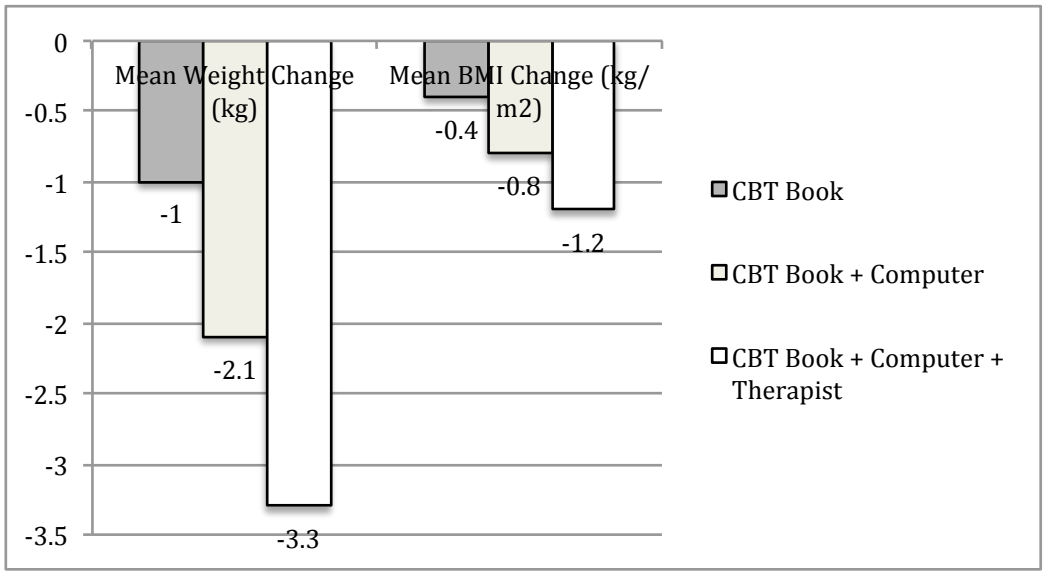


Figure 11: Mean Weight and BMI Change 12 months After the Start of Treatment (Wylie-Rosett et al., 2001)



APPENDIX F: REC Approval Letter

NRES Committee West Midlands - Coventry & Warwickshire
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Telephone: 0115 8839368
Facsimile: 0115 8839294

03 April 2012

Dr Kenneth Goss

RECEIVED 04 APR 2012

Dear Dr Goss

Study title: **Does a Compassionate Mind Self Help Approach Effect Psychosocial Factors in Treatment Seeking Obese Adults: A mixed study design.**

REC reference: **12/WM/0069**

The Research Ethics Committee reviewed the above application at the meeting held on 28 March 2012. Thank you for attending with Sarah Lockley and Kerrie Loader to discuss the study.

Ethical opinion

1. The Committee informed you that they found the study interesting, sympathetic and useful.
2. The Committee asked what bibliotherapy is. You explained it will involve utilising a self help book with exercises in addition to clinical support.
3. The Committee asked what the 20 minute telephone conversations will involve. You explained participants will be given the book and given homework tasks every week. The phone call will help to encourage the participant, provide support and to focus what the next stage of the therapy will involve.
4. The Committee pointed out that a lot of work is involved and asked if it will be achievable. Ms Lockley and Ms Loader clarified the research is structured to be part of clinical placement and more time, supervision and extra study days will be available to the student researchers.
5. The Committee pointed out there are some typographical and grammatical errors on the Participant Information Sheet. The Committee also pointed out that under the heading 'What will happen to me if I participate?' the second paragraph states "The non-treatment group will receive treatment as usual". You agreed to amend the documentation.
6. The Committee suggested that the study title on participant documentation should be clearer and simplified.

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Ethical review of research sites

NHS Sites

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

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

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

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

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

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

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

1. The titles on participant documentation should be simplified. The Committee suggests using the short title given on the application form.
2. The following additions/revisions are required on the Participant Information Sheet:
   a. The title should be simplified.
   b. State participants' GPs will be informed of their participation in the study.
   c. Typographical and grammatical errors should be corrected and the document should be proof read.
   d. Provide independent contact details for participants who wish to complain about the study.
   e. Under the heading 'Who has reviewed the study?' state the study has been reviewed by NRES Committee West Midlands - Coventry & Warwickshire.
3. On the Consent Form include a point seeking consent for participants' GPs to be informed of their participation in the study.

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

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. Confirmation should also be provided to host organisations together with relevant documentation

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Covering Letter		20 February 2012
Investigator CV	Dr Kenneth Goss	15 February 2012
Investigator CV	Dr Steven Allan	01 January 2012
Investigator CV	Sarah Lockley	26 January 2012
Investigator CV	Kerrie Loader	30 January 2012
Letter of invitation to participant	1	01 January 2012
Other: Welcome Letter	1	01 January 2012
Other: Eating Disorders Initial Screening Assessment	1	01 January 2012
Other: Food Diary	1	01 January 2012
Participant Consent Form	1	01 January 2012
Participant Information Sheet	1	01 January 2012
Protocol	1	01 January 2012
Questionnaire: Eating Questionnaire (EDE-Q)		
Questionnaire: Clinical Outcomes Routine Evaluation		
Questionnaire: General Practice Physical Activity		
Questionnaire: Self Compassion Scale		
Questionnaire: OAS Scale		
Questionnaire: ISS Scale		
Questionnaire: The Three Factor Eating Questionnaire - Revised 18-Item		
REC application	98923/295246/1/177	20 February 2012

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

Statement of compliance

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

After ethical review

Reporting requirements

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

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

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

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

12/WM/0069	Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

pp

Dr Helen Brittain
Chair

Email: lisa.gregory@nottspct.nhs.uk

Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments*
"After ethical review – guidance for researchers"

Copy to: *Miss Sarah Lockley*
Dr Kelly Spencer, West Midlands South Comprehensive Local Research Network

APPENDIX G: REC Acknowledgement of Response to the Conditions

NRES Committee West Midlands - Coventry & Warwickshire
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Telephone: 0115 8839368
Facsimile: 0115 8839294

23 April 2012

Miss Sarah Lockley

Dear Miss Lockley

Full title of study:	**Does a Compassionate Mind Self Help Approach Effect Psychosocial Factors in Treatment Seeking Obese Adults: A mixed study design.**
REC reference number:	**12/WM/0069**

Thank you for your letter of 18 April 2012. I can confirm the REC has received the documents listed below as evidence of compliance with the approval conditions detailed in our letter dated 28 March 2012. Please note these documents are for information only and have not been reviewed by the committee.

Documents received

The documents received were as follows:

Document	*Version*	*Date*
Covering Letter		18 April 2012
Letter of invitation to participant	2	18 April 2012
Other: Welcome Letter	2	18 April 2012
Participant Consent Form	2	18 April 2012
Participant Information Sheet	2	18 April 2012

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

12/WM/0069	**Please quote this number on all correspondence**

Yours sincerely

Mrs Lisa Gregory
Committee Co-ordinator

E-mail: lisa.gregory@nottspct.nhs.uk

APPENDIX H: Research Ethics Committee Acknowledgement of Substantial Amendment

NRES Committee West Midlands - Coventry & Warwickshire
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Tel: 0115 8839311
Fax: 0115 8839294

19 November 2012

Dr Kenneth Goss

Dear Dr Goss

Study title:	**Does a Compassionate Mind Self Help Approach Effect Psychosocial Factors in Treatment Seeking Obese Adults: A mixed study design.**
REC reference:	**12/WM/0069**
Amendment number:	**1**
Amendment date:	**01 November 2012**

Thank you for submitting the above amendment, which was received on 15 November 2012. I can confirm that this is a valid notice of a substantial amendment and will be reviewed by the Sub-Committee of the REC at its next meeting.

Documents received

The documents to be reviewed are as follows:

Document	Version	Date
changes to Protocol	1	November 2012
Participant Information Sheet	2	November 2012
Notice of Substantial Amendment (non-CTIMPs)	1	November 2012

Notification of the Committee's decision

The Committee will issue an ethical opinion on the amendment within a maximum of 35 days from the date of receipt.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval for the research.

12/WM/0069: Please quote this number on all correspondence

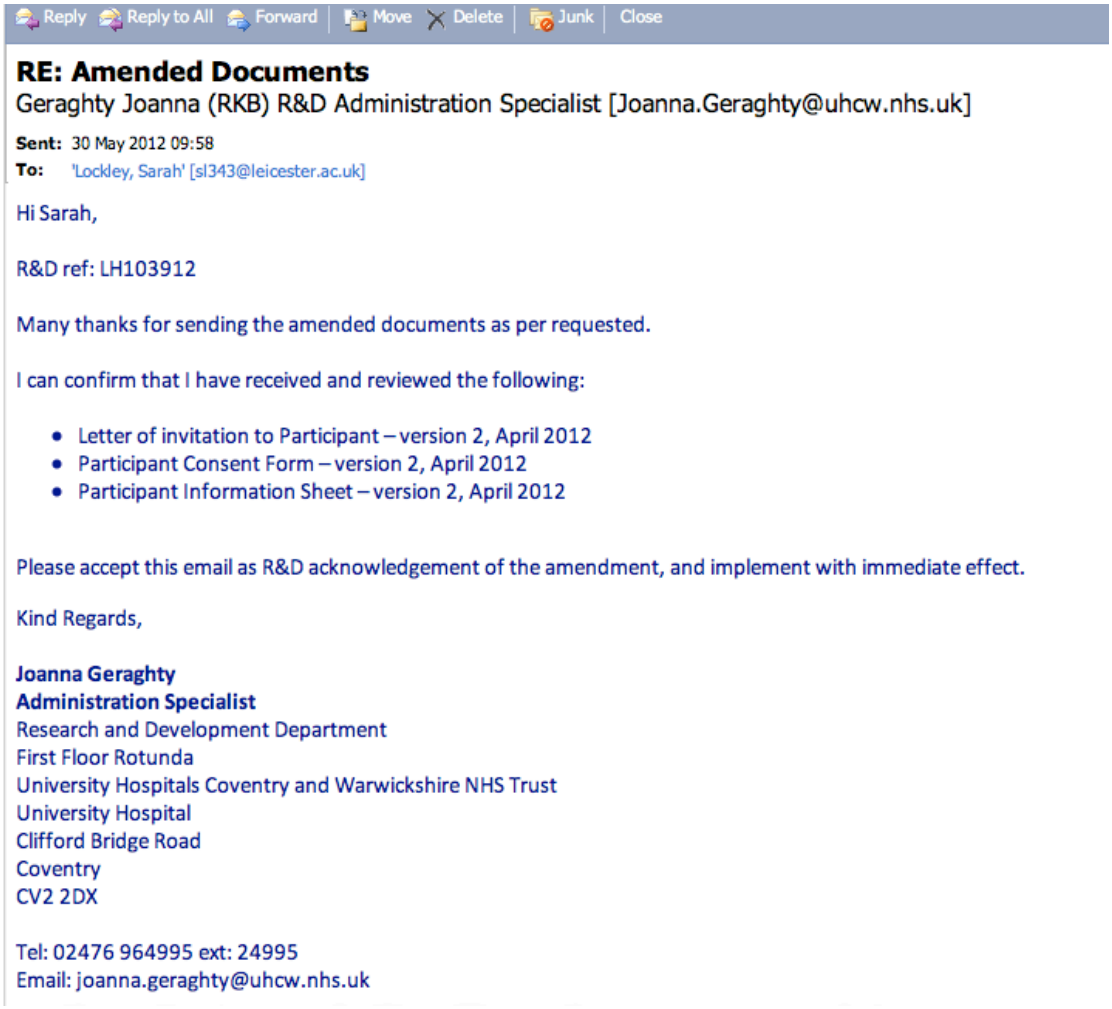
Yours sincerely

Andrea Graham
Committee Co-ordinator

E-mail: Andrea.Graham@nottspct.nhs.uk

Copy to:	*Dr Kelly Spencer, West Midlands South Comprehensive Local Research Network* *Miss Sarah Lockley*

APPENDIX I: Research and Development Confirmation Email



Reply | Reply to All | Forward | Move | Delete | Junk | Close

RE: Amended Documents

Geraghty Joanna (RKB) R&D Administration Specialist [Joanna.Geraghty@uhcw.nhs.uk]

Sent: 30 May 2012 09:58
To: 'Lockley, Sarah' [sl343@leicester.ac.uk]

Hi Sarah,

R&D ref: LH103912

Many thanks for sending the amended documents as per requested.

I can confirm that I have received and reviewed the following:

- Letter of invitation to Participant – version 2, April 2012
- Participant Consent Form – version 2, April 2012
- Participant Information Sheet – version 2, April 2012

Please accept this email as R&D acknowledgement of the amendment, and implement with immediate effect.

Kind Regards,

Joanna Geraghty
Administration Specialist
Research and Development Department
First Floor Rotunda
University Hospitals Coventry and Warwickshire NHS Trust
University Hospital
Clifford Bridge Road
Coventry
CV2 2DX

Tel: 02476 964995 ext: 24995
Email: joanna.geraghty@uhcw.nhs.uk

APPENDIX J: Participant information sheets and consent form

Participant Invitation Sheet

University of Leicester

School of Psychology
Doctorate in clinical Psychology
104 Regent Road
LEICESTER LE1 7LT
UK
Tel +44 (0)116 223 1639
Fax +44 (0)116 223 1650

Participation Invitation

Compassionate Mind Approach to Weight Management

Lead Researchers: Kerrie Loader, Clinical Psychologist Trainee, University of Leicester
Sarah Lockley, Clinical Psychologist Trainee, University of Leicester
Contact: E-mail. kal30@le.ac.uk, E-mail. sl343@le.ac.uk

Thank you for considering taking part in the study '**Compassionate Mind Approach to Weight Management'.**

Please find attached an information sheet which explains the study in detail.

If you would like to participate in the study or wish to discuss it further please fill in your details and sign the slip below and hand this to a member of staff. Alternatively you can contact the lead researchers directly on the telephone numbers below.

If you do not wish to participant then this will not affect your treatment within the weight management clinic.

Thank you for your interest.

Kind regards

Kerrie Loader
Sarah Lockley

Phase 1: Participant Information Sheet

University of Leicester

School of Psychology
Doctorate in clinical Psychology
104 Regent Road
LEICESTER LE1 7LT
UK
Tel +44 (0)116 223 1639
Fax +44 (0)116 223 1650

Participant Information Sheet

Compassionate Mind Approach to Weight Management

Lead Researchers: Kerrie Loader, Clinical Psychologist Trainee, University of Leicester
Sarah Lockley, Clinical Psychologist Trainee, University of Leicester
Contact: E-mail. kal30@le.ac.uk, E-mail. sl343@le.ac.uk

You are invited to take part in the research study '**Compassionate Mind Approach to Weight Management'**. Both lead researchers are undertaking training to become a Clinical Psychologist at Leicester University and this research forms part of the training. Before you decide to participate it is important for you to understand why the research is being done and what it will involve. One of our team will go through this information sheet with you and answer any questions you may have. This should take approximately five minutes.

1. What is the purpose of the study?

The study aims to:

1. To improve the scientific understanding of how psychological factors, including shame, self-compassion and self-criticism contribute towards eating difficulties. To determine if telephone guided self help treatment (using Compassion-focused Therapy) improves the effectiveness of the usual treatment offered at dietetic clinics in assisting and maintaining weight loss.

2. To find out if Compassionate Focused telephone guided self help therapy is an effective treatment for addressing self compassion, shame and self criticism and improving psychological wellbeing during treatment for weight management.

Compassionate Focused Therapy (CFT):

CFT is a relatively new development in Cognitive Behavioural interventions and in eating disorders. It has been successfully applied to a number of patient populations including depression.

Compassion Focused Therapy (CFT) is a form of therapy which helps work on self criticism and self attacking thoughts, both of which are very common with individuals suffering from

eating difficulties. CFT aims to enable patients to 'switch on' their self soothing thoughts and behaviours through use of taught skills, relaxation techniques and guided imagery.

2. Why have I been chosen?

You have been invited to take part because you are accessing services which are attempting to help you manage your weight. Everyone who attends this clinic will be invited to participate. We would like to understand more about what treatments work and how we can improve services.

3. Do I have to take part?

Whether you decide to take part in the study is entirely up to you. If you do decide to take part you can change your mind at any time and withdraw, the quality of your care will not be affected in any way by your decision to participate or not.

4. What will happen to me if I participate?

If you would like to participate you will be asked to attend an appointment at ANONYMOUS. A member of the team will discuss the study with you and gain your written consent to take part. Your GP will be informed of your participation in the study. At this time you will also be asked to answer some questions and fill in a questionnaire pack which will take approximately one hour. You will not be required to put your name on any of the questionnaires as they will remain anonymous and will only be identifiable by a participant number.

Following this appointment you will be allocated randomly to one of the two treatment options being evaluated by this study. Participants in the 'CFT Treatment' group will receive treatment as usual, a CFT self-help book and supportive phone-calls. The treatment will last for six months and will be fully explained to you before commencement. Alternatively, you will be allocated to the 'Treatment As Usual' group where your care will continue as usual, and at the end of the study you will receive a copy of the CFT self-help book.

After six months you will be asked to complete the questionnaire pack again (post treatment) and then to complete the same questionnaire pack three months after treatment has finished. This will be required whether you are allocated to the 'CFT Treatment' group or 'Treatment As Usual' group. These questionnaire packs can be sent and returned on completion through the post. However, should you prefer to complete these questionnaire packs with the support of a lead researcher, an appointment can be arranged for this. The purpose of these questionnaire packs is to allow us to evaluate what effects the treatment has had. As stated above, no questionnaires will contain personal information and will only be identifiable by your participant number.

Once your participation in the study has been completed, you will be given the opportunity to enquire about other treatment options and have access to this where possible.

5. What are the possible disadvantages of taking part?

This study will last for approximately nine months in total and will require engagement and motivation from you to take part. The treatment aspect of the study will last six months.

The questions and questionnaires that you will complete will ask questions related to your general wellbeing, eating behaviours and other emotional factors. It is possible that some of

these questions may cause you to think about things that make you emotional. However, you will be asked to complete these questionnaires with the support of a member of the team.

6. What are the possible advantages of taking part?

The questionnaires that you will complete at pre treatment, post treatment and at three month follow up will evaluate how effective the three types of treatment are for treatment seeking obese adults. This will allow us to shape services and provide evidence based therapy.

Although there may be no personal benefit in you participating by taking part you are providing unique and valuable information for this study which helps to contribute to the continual development of services.

7. What if something goes wrong?

If at any time during the study you feel that you do not wish to continue, you may withdraw without giving a reason and without your care being compromised at any time. Should you feel that you have questions or need emotional support at any time during the study, please contact one of the lead researchers on the number provided at the end of this information sheet. Should you wish to, you can call the Mental Health Matters Confidential, 24 hour helpline on 0800 616 717. This is a free and completely confidential service which you can access at any time. Contacting this service will not impact on your participation in the study or on your treatment with the dietetic service. This support is available whether you decide to continue with the study or not.

8. Confidentiality and Anonymity

Any information that you provide is protected by the Data Protection Act and will be kept confidential at all times. Any treatment you receive will be delivered by NHS professionals who adhere to strict rules of confidentiality. The questionnaires that you complete will only be identifiable by a participant number and all information pertaining to you will be stored using this number with no personal details. All data from the study will be stored in a locked filing cabinet when not in use.

9. What will happen with the results of the study?

The results will be written up as a report for submission to Leicester University as part of the assessment in training to become a Clinical Psychologist. The report may also be submitted for publication in a relevant journal. It is hoped that results from this study will be used to inform the direction of treatment programs offered to people seeking weight loss. If you would like a summary of the results of the study please inform either of the lead researchers who will be happy to provide this.

10. Who is organising and funding the research?

The study has been organised by the lead researchers in conjunction with the University of Leicester and ANONYMOUS.

11. Who has reviewed the study?

The study has been reviewed by NRES Committee West Midlands- Coventry & Warwickshire.

12. What will happen if I agree to take part?

If you decide to take part, please complete your details and sign the slip on the invitation letter and hand to a member of staff. Alternatively you can contact one of the lead researchers directly and an appointment will be arranged.

13. Making a complaint

If you would like to make a complaint about any issues related to the study please contact:

Dr Kelly Spencer

Research Management & Governance Manager

West Midlands South Comprehensive Local Research Network

CLRN Office

ANONYMOUS

Alternatively you can contact PALS (Patient Advice and Liaison Service for the NHS):

Patient Advice & Liaison Service

ANONYMOUS

14. Further Information

If you require any more information or support now or in the future you may contact one of the lead researchers:

Kerrie Loader

Sarah Lockley

Tel no.

E-mail: kal30@le.ac.uk.

E-mail: sl343@le.ac.uk

Mental Health Matters – Confidential Emotional Support and Guidance 24 hour helpline

Freephone 0800 616 171

E-mail: timeonline@mentalhealthmatters.co.uk

THANK YOU FOR TAKING THE TIME TO CONSIDER PARTICIPATING

Phase 2: Participant Information Sheet

University of Leicester

School of Psychology
Doctorate in clinical Psychology
104 Regent Road
LEICESTER LE1 7LT
UK
Tel +44 (0)116 223 1639
Fax +44 (0)116 223 1650

Participant Information Sheet

Examining The Relationship between Shame, Self-Compassion and Eating Behaviours In Adults Seeking Weight Management: A Cross Sectional Study

Lead Researchers: Kerrie Loader, Clinical Psychologist Trainee, University of Leicester
Sarah Lockley, Clinical Psychologist Trainee, University of Leicester
Contact: E-mail. kal30@le.ac.uk, E-mail. sl343@le.ac.uk

You are invited to take part in the research **Examining The Relationship between Shame, Self-Compassion and Eating Behaviours In Adults Seeking Weight Management: A Cross Sectional Study**. Both lead researchers are undertaking training to become a Clinical Psychologist at Leicester University and this research forms part of the training. Before you decide to participant it is important for you to understand why the research is being done and what it will involve. One of our team will go through this information sheet with you and answer any questions you may have. This should take approximately five minutes.

1. What is the purpose of the study?

The study aims to:

1. To improve the scientific understanding of how psychological factors, including shame, self-compassion and self-criticism contribute towards eating difficulties.

2. Why have I been chosen?

You have been invited to take part because you are accessing services which are attempting to help you manage your weight. Everyone who attends this clinic will be invited to participant. We would like to understand more about what treatments work and how we can improve services.

3. Do I have to take part?

Whether you decide to take part in the study is entirely up to you. If you do decide to take part you can change your mind at any time and withdraw, the quality of your care will not be affected in any way by you decision to participate or not.

4. What will happen to me if I participate?

If you would like to participate a member of the team will discuss the study with you. At this time you will also be offered a questionnaire pack to take home and complete at a time convenient to you. This should take approximately one hour and you will be supplied with a stamped self-addressed envelope to return these questionnaires to the lead researchers. You will not be required to put you name on any

of the questionnaires as they will remain anonymous and will only be identifiable by a participant number.

5. What are the possible disadvantages of taking part?

The questions and questionnaires that you will complete ask questions related to your general wellbeing, eating behaviours and other emotional factors. It is possible that some of these questions may cause you to think about things that make you emotional.

6. What are the possible advantages of taking part?

Although there may be no personal benefit in you participating by taking part you are providing unique and valuable information for this study which helps to contribute to the continual development of services.

7. What if something goes wrong?

If at any time during the study you feel that you do not wish to continue you may withdraw without giving a reason and without your care being compromised at any time. Should you feel that you have questions or need emotional support at any time during the study, please contact one of the lead researchers on the number provided at the end of this information sheet. Should you wish to you can call the Mental Health Matters Confidential 24 hour helpline on 0800 616 717. This is a free and completely confidential service which you can access at any time. Contacting this service will not impact on your participation in the study or on your treatment with the dietetic service. This support is available whether you decide to continue with the study or not.

8. Confidentiality and Anonymity

Any information that you provide is protected by the Data Protection Act and will be kept confidential at all times. Any treatment you receive will be delivered by NHS professionals who adhere to strict rules of confidentiality. The questionnaires that you complete will only be identifiable by a participant number and all information pertaining to you will be stored using this number with no personal details. All data from the study will be stored in a locked filing cabinet when not in use.

9. What will happen with the results of the study?

The results will be written up as a report for submission to Leicester University as part of the assessment in training to become a Clinical Psychologist. The report may also be submitted for publication in a relevant journal. It is hoped that results from this study will be used to inform the direction of treatment programs offered to people seeking weight loss. If you would like a summary of the results of the study please inform either of the lead researchers who will be happy to provide this.

10. Who is organising and funding the research?

The study has been organised by the lead researchers in conjunction with the University of Leicester and Coventry and Warwickshire Partnership Trust.

11. Who has reviewed the study?

The study has been reviewed by experienced academics at the University of Leicester and has been subject to rigorous scrutiny by West Midlands Research Ethics Committee.

12. What will happen if I agree to take part?

If you decide to take part please complete your details and sign the slip on the invitation letter and hand to a member of staff. Alternatively you can contact one of the lead researchers directly an appointment will be arranged.

13. Further Information

If you require any more information or support now or in the future you may contact one of the lead researchers.

Kerrie Loader

Sarah Lockley

Coventry Eating Disorder Service

E-mail: kal30@le.ac.uk.

E-mail: sl343@le.ac.uk

Mental Health Matters – Confidential Emotional Support and Guidance 24 hour helpline

Freephone 0800 616 171

E-mail: timeonline@mentalhealthmatters.co.uk

THANK YOU FOR TAKING THE TIME TO CONSIDER PARTICIPATING

Consent Form

Participant consent form version 2 April 2012

University of Leicester

School of Psychology
Doctorate in clinical Psychology
104 Regent Road
LEICESTER LE1 7LT
UK
Tel +44 (0)116 223 1639
Fax +44 (0)116 223 1650

Participant Identification Number:…..

CONSENT FORM

Compassionate Mind Approach to Weight Management

Lead Researchers: Kerrie Loader, Clinical Psychologist Trainee, University of Leicester
Sarah Lockley, Clinical Psychologist Trainee, University of Leicester

Thank you for agreeing to take part in this research project. Please read this consent form, and ask any further questions you would like to about what will be involved.

Please initial box

1. I confirm that I have read and understood the information sheet dated *(insert date)* for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. ☐
3. I understand that I will be randomly allocated to a treatment condition and this will last for 6 months with a 3 month follow up. I understand that any treatment I receive will be delivered or supervised by NHS professionals. ☐
4. I understand that my identity will remain anonymous on any questionnaires I complete throughout the study. ☐
5. I understand that data from the study will be kept securely on NHS premises. ☐
6. I understand that anonymous information I give will be included as part of assessment for the Doctorate in Clinical Psychology and that results may be published in academic journals. ☐
7. I agree that my GP can be informed of my involvement in the study. ☐
8. **I agree to take part in this study.** ☐

Name of Participant	Date	Signature
Researcher	Date	Signature

APPENDIX K: Kolomogorov-Smirnov Statistic and Significance Values

Those marked with * represent significant results indicating the data is not normally distributed.

Variable	Kolomogorov-Smirnov Test	Sig Value
BMI	0.11	0.06
SCS Total Score	0.09	0.20
EDE-Q Global Score	0.10	0.18
TFEQ Emotional Eating Score	0.17	$p<0.001$*
TFEQ Uncontrolled Eating Score	0.10	0.20
TFEQ Cognitive Restraint Score	0.12	0.02*
ISS Internal Shame Score	0.08	0.20
OAS External Shame Score	0.15	0.005*
GPPAQ Physical Activity Index	0.358	$p<0.001$*
CORE-OM Total Score	0.057	0.20
CORE-OM Wellbeing	0.10	0.20
CORE-OM Core Problems	0.10	0.17
CORE-OM Core Functioning	0.11	0.16

APPENDIX L: Kolomogorov-Smirnov Statistic and Significance Values Following Transformation of Variables

Variable	Kolomogorov-Smirnov Test	Sig Value	Kolomogorov-Smirnov Test After Transformation	Sig Value After Transformation
Physical Activity (GPPAQ)	0.358	0.00	0.378	.000
Emotional Eating (TFEQ)	0.17	0.00	0.15	.002
Cognitive Retraint (TFEQ)	0.13	0.03	0.09	0.20
External Shame (Other as Shamer)	0.15	0.005	0.10	0.20

APPENDIX M: Cronbach Alpha Statistics Measuring Internal Consistency

Scale	**Cronbach Alpha**	**Comparable Cronbach Alpha (Franks, 2011)**
SCS- Self-Kindness	0.83	0.76
SCS-Common Humanity	0.90	0.79
SCS-Mindfulness	0.31	0.79
SCS-Self-Judgment	0.85	0.83
SCS-Over Identification	0.85	0.87
SCS-Isolation	0.82	0.82
SCS-Total Self-Compassion	0.92	0.92
EDE-Q Global Score	0.82	0.85
EDE-Q Restraint	0.73	0.60
EDE-Q Eating Concern	0.68	0.77
EDE-Q Shape Concern	0.86	0.78
EDE-Q Weight Concern	0.65	0.56
ISS- Internal Shame Score	0.97	0.97
ISS- Self-esteem	0.88	0.89
OAS- External Shame Score	0.88	0.95
Scale	Cronbach Alpha	Comparable Cronbach Alpha (Konttinen et. al. 2009)
TFEQ- Emotional Eating Score	0.93	0.87
TFEQ- Uncontrolled Eating Score	0.89	0.87
TFEQ- Cognitive Restraint Score	0.76	0.72
Scale	Cronbach Alpha	Comparable Cronbach Alpha (Meekums et. al. 2012)
CORE-OM- Total Score	0.92	0.7- 0.88
CORE-OM- Wellbeing	0.67	
CORE-OM- Core Problems/Symptoms	0.83	
CORE-OM- Core Functioning	0.84	

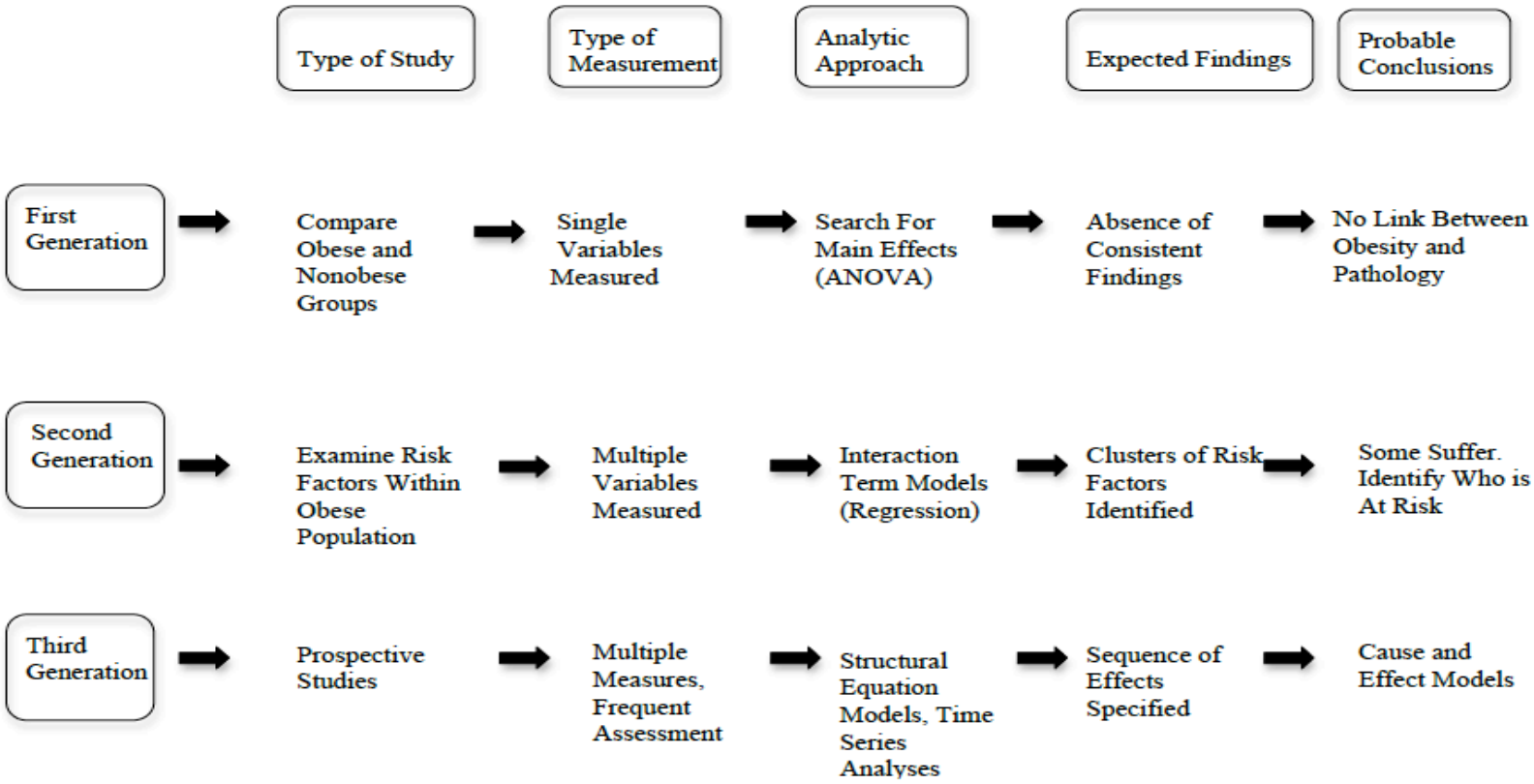
Franks (2011) research participants used those from a treatment seeking obese population. Konttinen, Haukkala, Lahteenkorva, Silventoinen & Jousilahti (2009) used participants who were normal weight, overweight and obese. Meekums, Vaverniece, Majore-Dusele & Rasnacs (2012) used participants who were over-weight and obese taking part in a commercial weight-loss programme.

APPENDIX N: Correlational matrix of Pearson product-moment correlations between measures

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.SCS (Total)	1	-.50***	-.32*	-.31*	-.55***	-.43***	-.43***	-.26	-.05	-.76***	.72***	-.62**	-.58***	-.59***	-.51***	-.54***	-.10	.33*
2. EDEQ G	-.50***	1	.68***	.79***	.90***	.87***	.41**	.31*	.16	.62***	-.47***	.49**	.51***	.48***	.47***	.41**	.21	-.23
3. EDEQ Rest.	-.32*	.68***	1	.30*	.40**	.46***	.26	.09	.44***	.31*	-.14	.33*	.22	.22	.15	.25	.05	-.23
4. EDEQ EC	-.30*	.79***	.30*	1	.71***	.60***	.43***	.51***	-.09	.50***	-.41**	.37**	.51***	.44***	.46***	.48***	.30*	-.13
5. EDEQ S	.90***	-.55***	.40**	.70**	1	.81***	.39**	.24	.03	.68***	-.53***	.50***	.53***	.50***	.53***	.50***	.20	-.16
6. EDE-Q W	-.43***	.87***	.46***	.59***	.81***	1	.26	.18	.10	.51***	-.45***	.39***	.42**	.40**	.28*	.39**	.18	-.23
7. TFEQ EE.	-.43***	.41**	.26	.43***	.39**	.255	1	.58***	-.02	.44***	-.39**	.25	.40**	.40**	.32*	.42**	.12	-.19
8. TFEQ UE	-.26	.31*	.09	.51***	.24	.18	.58***	1	-.14	.40**	-.34*	.38**	.52***	.46***	.40**	.57***	.25	-.01
9. TFEQ CR	-.05	.16	.44***	-.09	.03	.10	-.02	-.14	1	-.08	-.07	.04	-.07	-.14	-.10	.01	-.16	.02
10. ISS	-.75***	.62***	.31*	.50***	.68***	.52***	.44***	.40**	-.08	1	-.57***	.85***	.76***	.72***	.69***	.72***	.23	-.223
11. ISSE	.72***	-.47***	-.14	-.42**	-.54***	-.45***	-.39**	-.34*	-.07	-.57***	1	-.42**	-.55***	-.61***	-.47***	-.51***	-.18	.42**
12. OAS	-.62***	.49***	.33*	.37**	.50***	.39**	.25	.38**	.04	.85***	-.42**	1	.66***	.56***	.56***	.66***	.21	-.07
13. CORE T	-.58***	.51***	.22	.50***	.53***	.42**	.40**	.52***	-.07	.76***	-.55***	.66***	1	.85***	.94***	.93***	.29*	-.12
14. CORE (W)	-.59***	.48***	.22	.44***	.50***	.40**	.40**	.46***	-.14	.72***	-.61***	.56***	.85***	1	.77***	.72***	.27	-.26
15. CORE (P)	-.51***	.47***	.15	.46***	.53***	.40***	.32*	.40**	-.10	.69***	-.47***	.56***	.94***	.77***	1	.78***	.34*	-.08
16. CORE (F)	-.54***	.48***	.25	.48***	.46***	.39**	.42**	.57***	.01	.72***	-.51***	.66***	.93***	.72***	.78***	1	.20	-.09
17. BMI	-.09	.22	.05	.27*	.20	.18	.13	.25	-.16	.23	-.18	.21	.29*	.27	.34*	.20	1	-.26
18. GPPAQ	.33*	-.23	-.23	-.13	-.16	-.23	-.34*	-.01	-.05	-.22	.42**	-.07	-.12	-.26	-.08	-.09	-.26	1

APPENDIX O: Stages of Research (Friedman & Brownell, 1995)

Schematic conceptualisation showing three generations of research on the psychological correlates of obesity (Friedman & Brownell, 1995).



APPENDIX P: EDE-Q Questionnaire

EATING QUESTIONNAIRE

Instructions

The following questions are concerned with the PAST FOUR WEEKS ONLY (28 days). Please read each question carefully and circle the appropriate number on the right. Please answer all the questions.

ON HOW MANY DAYS OUT 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?	0	1	2	3	4	5	6
2.	Have you gone for long periods of time (8 hours or more) without eating anything in order to influence your shape weight?	0	1	2	3	4	5	6
3.	Have you tried to avoid eating any foods which you like in order to influence your shape or weight?	0	1	2	3	4	5	6
4.	Have you tried to follow definite rules regarding your eating in order to influence your shape or weight; for example, a calorie limit, a set amount of food, or rules about what or when you should eat?	0	1	2	3	4	5	6
5.	Have you wanted your stomach to be empty?	0	1	2	3	4	5	6
6.	Has thinking about food or its calorie content made it much more difficult to concentrate on things you are interested in; for example, read, watch TV, or follow a conversation?	0	1	2	3	4	5	6

7.	Have you been afraid of losing control over eating?	0	1	2	3	4	5	6
ON HOW MANY DAYS OUT OF THE PAST 28 DAYS …….		**No days**	**1-5 days**	**6-12 days**	**13-15 days**	**16-22 days**	**23-27 days**	**Every Day**
8.	Have you had episodes of binge eating?	0	1	2	3	4	5	6
9.	Have you eaten in secret? (Do not count binges)	0	1	2	3	4	5	6
10.	Have you definitely wanted your stomach to be flat?	0	1	2	3	4	5	6
11.	Has thinking about shape or weight made it more difficult to concentrate on things you are interested in; for example read, watch TV or follow a conversation?	0	1	2	3	4	5	6
12.	Have you had a definite fear that you might gain weight or become fat?	0	1	2	3	4	5	6
13.	Have you felt fat?	0	1	2	3	4	5	6
14.	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6
OVER THE PAST FOUR WEEKS (28 DAYS)								
15.	On what proportion of times that you have eaten have you felt guilty because the effect on your shape or weight? (Do not count binges) (Circle the number which applies)	0 – None of the times 1 – A few of the times 2 – Less than half the times 3 – Half the times 4 – More than half the times 5 – Most of the time 6 – Every time						

16.	Over the past four weeks (28 days), have there been any times when you have felt that you have eaten what other people would regard as an unusually large amount of food given the circumstances? (Please put appropriate number in box)	0 – No 1 – Yes [ ]
17.	How many such episodes have you had over the past four weeks?	[ ] [ ] [ ]
18.	During how many of these episodes of overeating did you have a sense of having lost control over your eating?	[ ] [ ] [ ]
19.	Have you had other episodes of eating in which you have had a sense of having lost control and eaten too much, but have <u>not</u> eaten an unusually large amount of food given the circumstances?	0 – No 1 – Yes [ ]
20.	How many such episodes have you had over the past four weeks?	[ ] [ ] [ ]
21.	Over the past four weeks have you made yourself sick (vomit) as a means of controlling your shape or weight?	0 – No 1 – Yes [ ]
22.	How many times have you done this over the past four weeks?	[ ] [ ] [ ]
23.	Have you taken laxatives as a means of controlling your shape or weight?	0 – No 1 – Yes [ ]
24.	How many times have you done this over the past four weeks?	[ ] [ ] [ ]

25.	Have you taken diuretics (water tablets) as a means of controlling your shape or weight?	0 – No 1 – Yes [ ]						
26.	How many times have you done this over the past four weeks?	[ ][ ][ ]						

27.	Have you exercised <u>hard</u> as a means of controlling your shape or weight?	0 – No 1 – Yes [ ]						
28.	How many times have you done this over the past four weeks?	[ ][ ][ ]						

OVER THE PAST FOUR WEEKS (28 DAYS) (Please circle the number which best describes your behaviour)		**NOT AT ALL**		**SLIGHTLY**		**MODERATELY**		**MARKEDLY**
29.	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
30.	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
31.	How much would it upset you if you had to weigh yourself once a week for the next four weeks?	0	1	2	3	4	5	6
32.	How dissatisfied have you felt about your weight?	0	1	2	3	4	5	6
33.	How dissatisfied have you felt about your shape?	0	1	2	3	4	5	6
34.	How concerned have you been about other people seeing you eat?	0	1	2	3	4	5	6

35.	How uncomfortable have you felt seeing your body; for example, in the mirror, in shop window reflections, while undressing or taking a bath or shower?	0	1	2	3	4	5	6
36.	How uncomfortable have you felt about others seeing your body; for example, in communal changing rooms, when swimming or wearing tight clothes?	0	1	2	3	4	5	6

APPENDIX Q: TFEQ-R18 Questionnaire

The Three-Factor Eating Questionnaire—Revised 18-Item

1. When I smell a sizzling steak or juicy piece of meat, I find it very difficult to keep from eating, even if I have just finished a meal.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
2. I deliberately take small helpings as a means of controlling my weight.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
3. When I feel anxious, I find myself eating.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
4. Sometimes when I start eating, I just can't seem to stop.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
5. Being with someone who is eating often makes me hungry enough to eat also.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
6. When I feel blue, I often overeat.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
7. When I see a real delicacy, I often get so hungry that I have to eat right away.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
8. I get so hungry that my stomach often seems like a bottomless pit.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
9. I am always hungry so it is hard for me to stop eating before I finish the food on my plate.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
10. When I feel lonely, I console myself by eating.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
11. I consciously hold back at meals in order not to weight gain.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

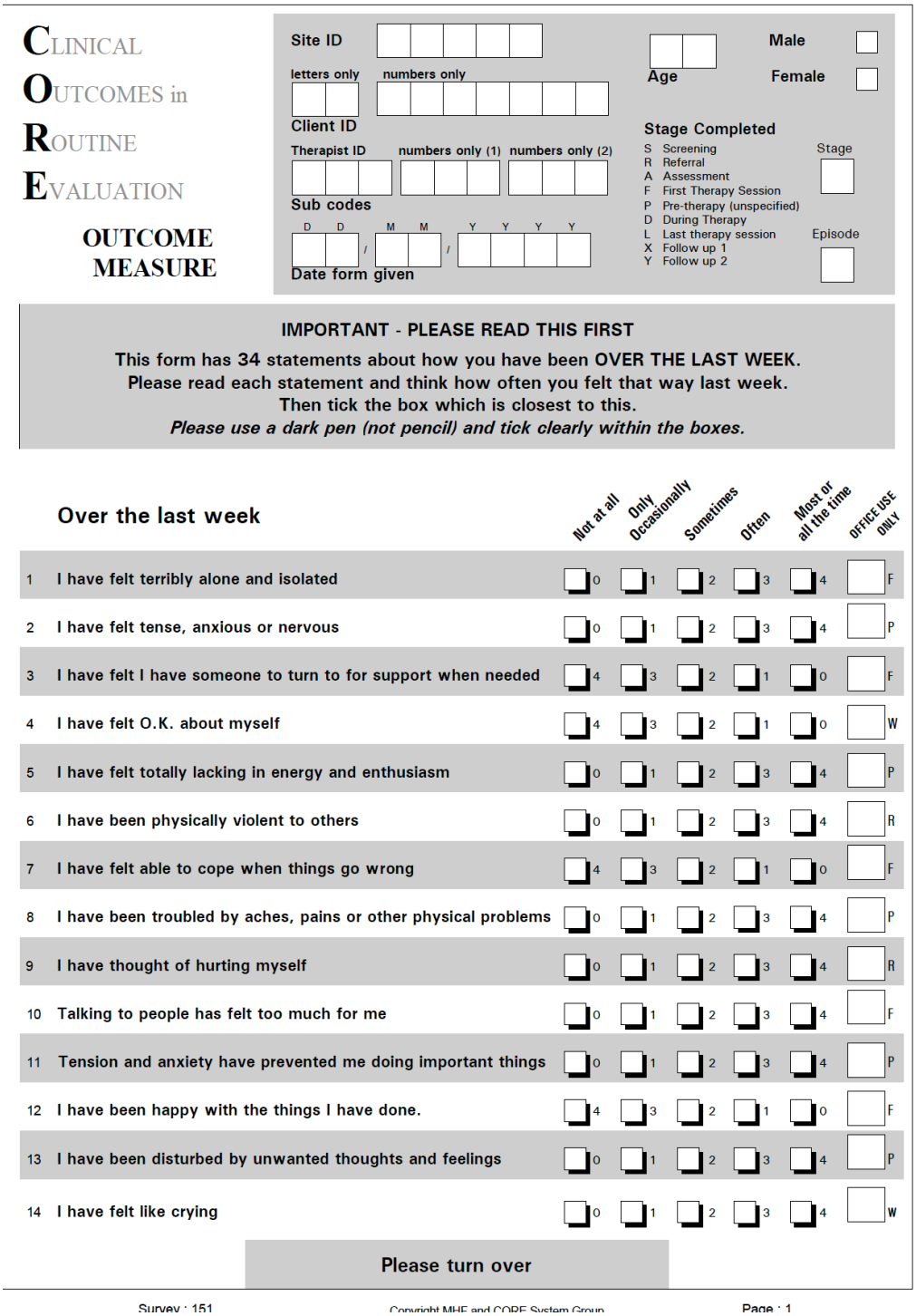
12. I do not eat some foods because they make me fat.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
13. I am always hungry enough to eat at any time.Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
14. How often do you feel hungry?Only at meal times (1)/ sometimes between meals (2)/ often between meals (3)/ almost always (4)
15. How frequently do you avoid "stocking up" on tempting foods?Almost never (1)/ seldom (2)/ usually (3)/ almost always (4)
16. How likely are you to consciously eat less than you want?Unlikely (1)/ slightly likely (2)/ moderately likely (3)/ very likely (4)
17. Do you go on eating binges though you are not hungry?Never (1)/ rarely (2)/ sometimes (3)/ at least once a week (4)
18. On a scale of 1 to 8, where 1 means no restraint in eating (eating whatever you want, whenever you want it) and 8 means total restraint (constantly limiting food intake and never "giving in"), what number would you give yourself?The 1–2 scores were coded 1; 3–4 scores were coded 2; 5–6 scores were coded 3; 7–8 scores were coded 4.

The cognitive restraint scale was composed of items 2, 11, 12, 15, 16, and 18. The uncontrolled eating scale was composed of items 1, 4, 5, 7, 8, 9, 13, 14, and 17. The emotional eating scale was composed of items 3, 6, and 10.

APPENDIX R: Food diary

Situation Date\Time\Place Who were you with? How were you feeling? What were you thinking before you ate?	**Food eaten\drinks** **Type and amount**	**Overeating** Yes\ No	**Dieting Mind or Comfort food mind active when eating** Yes\No	**Thoughts & Feelings** These can be thoughts and feeling during or after eating, about doing the diary, or anything else that you think is important.

APPENDIX S: CORE-OM



CLINICAL OUTCOMES in ROUTINE EVALUATION

OUTCOME MEASURE

Site ID

letters only | numbers only

Client ID

Therapist ID | numbers only (1) | numbers only (2)

Sub codes

Date form given: D D / M M / Y Y Y Y

Age

Male

Female

Stage Completed

S Screening
R Referral
A Assessment
F First Therapy Session
P Pre-therapy (unspecified)
D During Therapy
L Last therapy session
X Follow up 1
Y Follow up 2

Stage

Episode

IMPORTANT - PLEASE READ THIS FIRST

This form has 34 statements about how you have been OVER THE LAST WEEK.
Please read each statement and think how often you felt that way last week.
Then tick the box which is closest to this.
Please use a dark pen (not pencil) and tick clearly within the boxes.

	Over the last week	Not at all	Only Occasionally	Sometimes	Often	Most or all the time	OFFICE USE ONLY
1	I have felt terribly alone and isolated	0	1	2	3	4	F
2	I have felt tense, anxious or nervous	0	1	2	3	4	P
3	I have felt I have someone to turn to for support when needed	4	3	2	1	0	F
4	I have felt O.K. about myself	4	3	2	1	0	W
5	I have felt totally lacking in energy and enthusiasm	0	1	2	3	4	P
6	I have been physically violent to others	0	1	2	3	4	R
7	I have felt able to cope when things go wrong	4	3	2	1	0	F
8	I have been troubled by aches, pains or other physical problems	0	1	2	3	4	P
9	I have thought of hurting myself	0	1	2	3	4	R
10	Talking to people has felt too much for me	0	1	2	3	4	F
11	Tension and anxiety have prevented me doing important things	0	1	2	3	4	P
12	I have been happy with the things I have done.	4	3	2	1	0	F
13	I have been disturbed by unwanted thoughts and feelings	0	1	2	3	4	P
14	I have felt like crying	0	1	2	3	4	W

Please turn over

Survey : 151 Copyright MHE and CORE System Group Page : 1

Over the last week	Not at all	Only Occasionally	Sometimes	Often	Most or all the time	OFFICE USE ONLY
15 I have felt panic or terror	0	1	2	3	4	P
16 I made plans to end my life	0	1	2	3	4	R
17 I have felt overwhelmed by my problems	0	1	2	3	4	W
18 I have had difficulty getting to sleep or staying asleep	0	1	2	3	4	P
19 I have felt warmth or affection for someone	4	3	2	1	0	F
20 My problems have been impossible to put to one side	0	1	2	3	4	P
21 I have been able to do most things I needed to	4	3	2	1	0	F
22 I have threatened or intimidated another person	0	1	2	3	4	R
23 I have felt despairing or hopeless	0	1	2	3	4	P
24 I have thought it would be better if I were dead	0	1	2	3	4	R
25 I have felt criticised by other people	0	1	2	3	4	F
26 I have thought I have no friends	0	1	2	3	4	F
27 I have felt unhappy	0	1	2	3	4	P
28 Unwanted images or memories have been distressing me	0	1	2	3	4	P
29 I have been irritable when with other people	0	1	2	3	4	F
30 I have thought I am to blame for my problems and difficulties	0	1	2	3	4	P
31 I have felt optimistic about my future	4	3	2	1	0	W
32 I have achieved the things I wanted to	4	3	2	1	0	F
33 I have felt humiliated or shamed by other people	0	1	2	3	4	F
34 I have hurt myself physically or taken dangerous risks with my health	0	1	2	3	4	R

THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE

Total Scores

Mean Scores
(Total score for each dimension divided by

APPENDIX T: Internalized Shame Scale

I.S.S. SCALE

DIRECTIONS: Below is a list of statements describing feelings or experiences that you may have from time to time or that are familiar to you because you have had them for a long time. Most of these statements describe feelings and experiences that are generally painful or negative in some way. Some people will seldom or never have many of these feelings. Everyone has had some of these feelings at some time, but if you find that these statements describe the way that you feel a good deal of the time, it can be painful just reading them. Try to be as honest as you can in responding.

Read each statement carefully and circle the number to the left of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement. Use the scale below.
DO NOT OMIT ANY ITEM.

SCALE

0 = NEVER 1 = SELDOM 2 = SOMETIMES 3 = FREQUENTLY 4 = ALMOST ALWAYS

SCALE

0 1 2 3 4	1. I feel like I am never quite good enough
0 1 2 3 4	2. I feel somehow left out
0 1 2 3 4	3. I think other people look down on me
0 1 2 3 4	4. All in all, I am inclined to feel that I am a success
0 1 2 3 4	5. I scold myself and put myself down
0 1 2 3 4	6. I feel insecure about others opinions of me
0 1 2 3 4	7. Compared to other people, I feel like I somehow never measure up
0 1 2 3 4	8. I see myself as being very small and insignificant
0 1 2 3 4	9. I feel I have much to be proud of
0 1 2 3 4	10. I feel intensely inadequate and full of self-doubt
0 1 2 3 4	11. I feel as if I am somehow defective as a person, like there is something basically wrong with me
0 1 2 3 4	12. When I compare myself to others I am just not as important
0 1 2 3 4	13. I have an overpowering dread that my faults will be

revealed in front of others

0 = NEVER 1 = SELDOM 2 = SOMETIMES 3 = FREQUENTLY 4 = ALMOST ALWAYS

Scale

0 1 2 3 4	14. I have a number of good qualities
0 1 2 3 4	15. I see myself striving for perfection only to continually fall short
0 1 2 3 4	16. I think others are able to see my defects
0 1 2 3 4	17. I could beat myself over the head with a club when I make a mistake
0 1 2 3 4	18. On the whole, I am satisfied with myself
0 1 2 3 4	19. I would like to shrink away when I make a mistake
0 1 2 3 4	20. I replay painful events over and over in my mind until I am overwhelmed
0 1 2 3 4	21. I feel I am a person of worth at least on an equal plane with others
0 1 2 3 4	22. At times I feel like I will break into a thousand pieces
0 1 2 3 4	23. I feel as if I have lost control over my body functions and feelings
0 1 2 3 4	24. Sometimes I feel no bigger than a pea
0 1 2 3 4	25. At times I feel so exposed that I wish the earth would open up and swallow me
0 1 2 3 4	26. I have this painful gap within me that I have not been able to fill
0 1 2 3 4	27. I feel empty and unfulfilled
0 1 2 3 4	28. I take a positive attitude toward myself
0 1 2 3 4	29. My loneliness is more like emptiness
0 1 2 3 4	30. I always feel there is something missing

APPENDIX U: Other As Shamer Scale

OAS SCALE

DIRECTIONS: Below is a list of statements describing feelings or experiences that you may have from time to time or that are familiar to you because you have had them for a long time. Most of these statements describe feelings and experiences that are generally painful or negative in some way. Some people will seldom or never have many of these feelings. Everyone has had some of these feelings at some time, but if you find that these statements describe the way that you feel a good deal of the time, it can be painful just reading them. Try to be as honest as you can in responding.

Read each statement carefully and circle the number to the left of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement. Use the scale below. **DO NOT OMIT ANY ITEM**.

SCALE

0 = NEVER 1 = SELDOM 2 = SOMETIMES 3 = FREQUENTLY 4= ALMOST ALWAYS

SCALE

0 1 2 3 4	1. I feel other people see me as not good enough
0 1 2 3 4	2. I think that other people look down on me
0 1 2 3 4	3. Other people put me down a lot
0 1 2 3 4	4. I feel insecure about others opinions of me
0 1 2 3 4	5. Other people see me as not measuring up to them
0 1 2 3 4	6. Other people see me as small and insignificant
0 1 2 3 4	7. Other people see me as somehow defective as a person
0 1 2 3 4	8. People see me as unimportant compared to others
0 1 2 3 4	9. Other people look for my faults
0 1 2 3 4	10. People see me as striving for perfection but being unable to reach my own standards
0 1 2 3 4	11. I think others are able to see my defects
0 1 2 3 4	12. Others are critical or punishing when I make a mistake
0 1 2 3 4	13. People distance themselves from me when I make mistakes

0= NEVER 1 = SELDOM 2 = SOMETIMES 3 = FREQUENTLY 4 = ALMOST ALWAYS

0 1 2 3 4 14. Other people always remember my mistakes

0 1 2 3 4 15. Others see me as fragile

0 1 2 3 4 16. Others see me as empty and unfulfilled

0 1 2 3 4 17. Others think there is something missing in me

0 1 2 3 4 18. Other people think I have lost control over my body and feelings

APPENDIX V: Self-compassion Scale

SCS

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

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

Almost Never	**Seldom**	**Sometimes**	**Often**	**Almost Always**
1	**2**	**3**	**4**	**5**

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

18.	When I'm really struggling, I tend to feel like other people must be having an easier time of it.	1	2	3	4	5
19.	I'm kind to myself when I'm experiencing suffering.	1	2	3	4	5
20.	When something upsets me I get carried away with my feelings.	1	2	3	4	5
21.	I can be cold-hearted towards myself when I'm experiencing suffering.	1	2	3	4	5
22.	When I'm feeling down I try to approach my feelings with curiosity and openness.	1	2	3	4	5
23.	I'm tolerant of my own flaws and inadequacies.	1	2	3	4	5
24.	When something painful happens I tend to blow the incident out of proportion.	1	2	3	4	5
25.	When I fail at something that's important to me, I tend to feel alone in my failure.	1	2	3	4	5
26.	I try to be understanding and patient towards those aspects of my personality I don't like.	1	2	3	4	5

APPENDIX W: GPPAQ

General Practice Physical Activity Questionnaire

Date……

Name……..

1. Please tell us the type and amount of physical activity involved in your work.

		Please mark one box only
a	I am not in employment (e.g. retired, retired for health reasons, unemployed, full-time carer etc.)	
b	I spend most of my time at work sitting (such as in an office)	
c	I spend most of my time at work standing or walking. However, my work does not require much intense physical effort (e.g. shop assistant, hairdresser, security guard, childminder, etc.)	
d	My work involves definite physical effort including handling of heavy objects and use of tools (e.g. plumber, electrician, carpenter, cleaner, hospital nurse, gardener, postal delivery workers etc.)	
e	My work involves vigorous physical activity including handling of very heavy objects (e.g. scaffolder, construction worker, refuse collector, etc.)	

2. During the *last week*, how many hours did you spend on each of the following activities? *Please answer whether you are in employment or not*

Please mark one box only on each row

		None	Some but less than 1 hour	1 hour but less than 3 hours	3 hours or more
a	Physical exercise such as swimming, jogging, aerobics, football, tennis, gym workout etc.				
b	Cycling, including cycling to work and during leisure time				
c	Walking, including walking to work, shopping, for pleasure etc.				
d	Housework/Childcare				
e	Gardening/DIY				

3. How would you describe your usual walking pace? Please mark one box only.

Slow pace (i.e. less than 3 mph)		Steady average pace	
Brisk pace		Fast pace (i.e. over 4mph)	

APPENDIX X: Screening assessment

Compassionate Mind Approach to Obesity Version 1
January 2012

EATING DISORDERS
INITIAL SCREENING ASSESSMENT

Name:
Date:
Assessor:

Key tasks of interview:

- ☐ **Assess for potential suitability for research program (note any exclusion criteria).**
- ☐ **Symptom Assessment.**
- ☐ **Risk Assessment \ Risk Management Plan.**
- ☐ **Engage client with the lead researcher.**
- ☐ **If not suitable for our research, find appropriate help.**

Questionnaires (read through these to check they have been completed and to note any specific items for further discussion):

- **EDE-Q**
- **CORE**
- **GPPAQ**
- **SCS**
- **OAS**
- **ISS**
- **TFEQ - 18**

Introduction:

- ☐ **Introduce yourself.**
- ☐ **Ask client what they would like you to call them.**

Explain the research and process for this appointment- need to cover:

- ☐ **Appointment likely to last for 60 minutes.**
- ☐ **Aim of this appointment: to get a broad picture of their difficulties and see if we feel our research may be appropriate for them (and if not, who can).**
- ☐ **Confidentiality (NHS and ED Team).**
- ☐ **Likely that there will be a time gap between assessment and treatment (this can be up to three months).**

Orientation and Motivation

☐ **How do you feel about being here today?**

Current Disordered Eating and Mental Health Symptoms

☐ **Please describe the things that you (or the person who wanted you to come) are finding difficult at the moment.**

(Use questionnaires to prompt for any disordered eating symptoms they do not mention)

Current Pattern

☐ **Could you tell me something about your current eating and activity pattern? (Ask them to describe a typical day from waking to bed; including any night time eating).**

(PROMPT: ask about restriction, exercise, laxative abuse, purging, medication)

Weight History

☐ **Highest adult weight=** **Age of highest adult weight=**

☐ **Lowest adult weight=** **Age of lowest adult weight=**

☐ **How many previous attempts at weight loss:**

☐ **Explore weight change history**

(PROMPT: Ask about any episodes of hospital re-feeding: times & dates and any subsequent weight loss; attempts at weight loss; unintentional weight loss & reasons, periods of weight gain; levels of physical activity)

☐ **Client weight today:**
Take height from screening assessment to ensure consistency.

Height: **Weight:** **BMI:**

Disordered eating Symptoms

Eating Disorder Symptom	Duration & Frequency	Details
Food restriction Calories Foods excluded		
Fluid overload to avoid eating		
Fluid restriction Amount drunk		
Vomiting Voluntary Involuntary		
Exercise Type		
Drugs for weight loss Laxative Cigarettes Other		
Eating speed & other rituals		
Bingeing Objective Subjective Binge foods		
Chewing and spitting out food \ regurgitation		
Mirror/body checking		
Weighing		
Problems with buying food \ preparing & cooking food		
Social difficulties related to food \ size shape		
Foods avoided Fear, intolerance Moral choice		

Personal History

(Check APPS; if there are notable difficulties explore these. Otherwise take history using prompts below).

THIS INFORMATION IS OPTIONAL ***(i.e. no need to complete if time is short/If you feel client may not be suitable for the service).***

Ask questions around:

☐ **Current circumstances**

Psychiatric Risk Assessment

☐ **Explore current Psychiatric Co-Morbidity** ***(e.g. depression, anxiety etc- Check APPS & CORE).***

☐ **Current drug \ alcohol intake**

☐ **Risk of harm to self**

(PROMPT: Including self-harm, reckless behaviours, suicidal ideation, planning, intent, previous suicide attempts, protective factors)

☐ **Risk of harm to others**

(PROMPT: Physical or verbal aggression to others; eating disorder behaviours in presence of children; difficulty caring for children due to co-morbid depression, substance use etc)

☐ **Current Risk Management**

(PROMPT: How does the person typically respond to stressful events, are any stressful events foreseeable in the near future, what plans (if any) do they have to cope with these? Does the person have insight into risk? Who supports them in managing current risks?)

Medical Risk Assessment (from Weight & Symptoms)

(PROMPT: Potential risks include; high vomit frequency (x3per week), rapid weight loss (or gain in low weight patients), blood in vomit, excessive exercise, any disruption to ritualized eating habits, increase in purging behaviours, illness leading to weight loss. Does the person have insight into the medical risk?)

Have you ever received any treatment under the Mental Health Act?

	Yes	**No**	**Unknown**
If yes, which section?	**S2**	**S3**	**Other/unknown**
Subject to S17 Aftercare? Yes	**No**	**Unknown**	
Subject to S17a CTO?	**Yes**	**No**	**Unknown**

Additional Information

☐ **Is there anything else in your life that you are finding upsetting or difficult to manage in addition to your difficulties around eating that you feel it is important we know about?**

☐ **Does anything need to be explicitly raised from the questionnaires?** ***(e.g. co-morbid Axis I/Axis II disorders/symptoms or physical health/medical problems; recent or current self-harm, suicidal ideation, planning or intent; issues around alcohol or drug use)***

☐ **Anything that would stop them accessing treatment (e.g. going away to University, taking a year out)?**

☐ **Is there anything they want to ask us (or anything they want to tell us that they expected us to ask about)?**

Risk Management Plan

(To be reviewed and agreed at team meeting)

Specify Psychiatric &\ or Medical Identified Risks

Short Term (24-48 hours) Risks =

Longer Term Risks =

Action plan

What will be done to manage immediate risk (24-48 hours)?

What will be done to manage longer term risk?

Responsibilities for managing & monitoring risk

Who will do what & when?

	OUTCOME	
Research	**YES**	**NO**
CEDS	**YES**	**NO**
Other	**YES**	**NO**

APPENDIX Y: Epistemological Position

A positivist epistemological position was taken when conducting this research. This assumed that the constructs being examined, including shame, distress, eating behaviours and eating disorder psychopathology are observable, quantifiable measurable concepts. This position led to the use of quantitative methodology in this research.

APPENDIX Z: Chronology of Research Process

Start of eating disorder placement	Oct 2011
Submission of research proposal to Leicester University	Nov 2011
Revised research proposal submitted	Jan 2012
REC meeting and approval	April 2012
R & D approval	May 2012
Recruitment	May 2012
Amendment to REC approval	Nov 2012
Change to recruitment strategy implemented	Jan 2013
Write-up	Jan - Apr 2013
Submission	End April 2013

APPENDIX AA: Guidelines to authors for targeted journal

Target journal for literature review: British Journal of Clinical Psychology

http://authorservices.wiley.com/bauthor/Author_guide.asp?ref=0144-6657

(Accessed 22 April 2013)

Guidelines to Author:

British Journal of Clinical Psychology

British Journal of Clinical Psychology
Published on behalf of the British Psychological Society

Edited by: Julie Henry and Mike Startup

Print ISSN: 0144-6657 **Online ISSN:** 2044-8260 **Frequency:** Four issues a year **Current Volume:** 51 / 2012 **ISI Journal Citation Reports® Ranking:** 2010: Psychology, Clinical: 43 / 102 **Impact Factor:** 1.9

The British Journal of Clinical Psychology publishes original contributions to scientific knowledge in clinical psychology. This includes descriptive comparisons, as well as studies of the assessment, aetiology and treatment of people with a wide range of psychological problems in all age groups and settings. The level of analysis of studies ranges from biological influences on individual behaviour through to studies of psychological interventions and treatments on individuals, dyads, families and groups, to investigations of the relationships between explicitly social and psychological levels of analysis.

The following types of paper are invited:

• Papers reporting original empirical investigations

• Theoretical papers, provided that these are sufficiently related to the empirical data

• Review articles which need not be exhaustive but which should give an interpretation of the state of the research in a given field and, where appropriate, identify its clinical implications

• Brief reports and comments

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Papers should normally be no more than 5000 words (excluding abstract, reference list, tables and figures), although the Editor retains discretion to publish papers beyond this length in cases where the clear and concise expression of the scientific content requires greater length.

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4. Manuscript requirements

• Contributions must be typed in double spacing with wide margins. All sheets must be numbered.

• Manuscripts should be preceded by a title page which includes a full list of

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• Tables should be typed in double spacing, each on a separate page with a self-explanatory title. Tables should be comprehensible without reference to the text. They should be placed at the end of the manuscript with their approximate locations indicated in the text.

• Figures can be included at the end of the document or attached as separate files, carefully labelled in initial capital/lower case lettering with symbols in a form consistent with text use. Unnecessary background patterns, lines and shading should be avoided. Captions should be listed on a separate sheet. The resolution of digital images must be at least 300 dpi.

• All papers must include a structured abstract of up to 250 words under the headings: Objectives, Methods, Results, Conclusions. Articles which report original scientific research should also include a heading 'Design' before 'Methods'. The 'Methods' section for systematic reviews and theoretical papers should include, as a minimum, a description of the methods the author(s) used to access the literature they drew upon. That is, the abstract should summarize the databases that were consulted and the search terms that were used.

• All Articles must include Practitioner Points - these are 2-4 bullet points to detail the positive clinical implications of the work, with a further 2-4 bullet points outlining cautions or limitations of the study. They should be placed below the abstract, with the heading 'Practitioner Points'.

• For reference citations, please use APA style. Particular care should be taken to ensure that references are accurate and complete. Give all journal titles in full and provide DOI numbers where possible for journal articles.

• SI units must be used for all measurements, rounded off to practical values if appropriate, with the imperial equivalent in parentheses.

• In normal circumstances, effect size should be incorporated.

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5. Brief reports and comments

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