Research report

Emotionally focused group therapy and dietary counseling in binge eating disorder. Effect on eating disorder psychopathology and quality of life

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ABSTRACT

Objective: To test the effect on psychopathology and quality of life of Emotionally Focused Therapy (EFT), Dietary Counseling (DC), and Combined Treatment (CT) in treatment-seeking patients with Binge Eating Disorder (BED) and obesity. Methods: Utilizing an observational study design, 189 obese adult patients with BED were treated by manualized therapy protocols. An independent assessment of health-related quality of life (Obesity-Related Well-Being questionnaire – ORWELL-97), attitudes toward eating (Eating Inventory – EI), binge eating (Binge Eating Scale – BES) and body uneasiness (Body Uneasiness Test – BUT) was performed at baseline, end-of-treatment, and six-month follow-up. These data are the secondary outcomes of a previously published treatment study. Results: A higher dropout rate was observed in the DC compared to the EFT and CT groups, while body weight decreased significantly in all three groups. Pre–post scores on the BES, BUT Global Severity Index, and EI Hunger subscale significantly decreased in the CT and EFT groups (but not the DC group). At six-month follow-up, 71% of participants in CT and 46% of participants in EFT had a BES score below the threshold of attention for BED (<16), whereas no participants in the DC group reached this target. Finally the ORWELL-97 score decreased significantly in all groups, but significantly more so in the CT and EFT groups. Conclusion: Results support the utility of combining EFT and DC in the treatment of patients with BED and obesity, emphasizing the usefulness of techniques focused on cognitive emotional processing for changing eating disorder psychopathology and quality of life.

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Introduction

Binge Eating Disorder (BED) is a complex and multifaceted eating disorder that requires a comprehensive treatment approach. Multiple outcomes may be targeted in the treatment of obese individuals but BED remission and weight loss are mandatory. Antidepressant medications (Agras et al., 1994), cognitive-behavioral therapy (CBT) (Latner et al., 2000; Wilson, Fairburn, Agras, Walsh, & Kraemer, 2002), guided self-help based on CBT (Carter & Fairburn, 1998), interpersonal psychotherapy (IPT) (Agras et al., 1994; Wilfley et al., 2002), and behavioral weight loss treatment (BWL) (Marcus, Wing, & Fairburn, 1995) have all been investigated as therapeutic options. Controlled studies have shown that these therapies are effective in reducing binge eating and associated psychopathology in the short and long-term (Wilfley et al., 2002; Wilson, Grilo, & Vitousek, 2007), but have a limited effect on body weight. This finding was recently replicated in a study showing that IPT, CBT, and guided self-help were all significantly more effective than BWL in eliminating binge eating at 2 years, but not in effectuating any long-term reductions in weight loss (Wilson, Wilfley, Agras, & Bryson, 2010).

Recent research supports a model of binge eating that also includes emotional vulnerability and a deficit of skills that functionally modulate negative emotions, a mechanism not directly addressed by either CBT or IPT. For example, data suggest that difficulties in emotion regulation (Whiteside et al., 2007) and emotional eating (Ricca et al., 2009) are strongly associated with binge eating, independently of sex, food restriction, and/or

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over-evaluation of weight and shape. Other findings show that binge eating may be triggered by an immediate break-down of emotion regulation (Munsch, Meyer, Quartier, & Wilhelm, 2011; Whiteside et al., 2007). Two randomized controlled trials (Safer, Robinson, & Jo, 2010; Tchel, Agras, & Linehan, 2001) with dialectical behavior therapy adapted for BED (DBT-BED) (Wiser & Telch, 1999) showed that DBT-BED (a treatment specifically addressing events and mood changes associated with binge eating) was more effective than a wait-list control in eliminating binge eating. However, therapeutic gains were not maintained at 12-month follow-up, indicating the absence of any specific effect of the experimental treatment on long-term outcomes. An enhanced form of CBT for eating disorder (CBT-E) introduced a DBT-derived mood intolerance module for addressing eating-inducing events and associated mood changes, but its efficacy has not been empirically assessed in individuals with BED (Fairburn, Cooper, & Shafran, 2003).

Emotionally Focused Therapy (EFT) is a promising intervention for binge eating. Unlike DBT-BED, which encourages patients to observe and describe their emotions in a nonjudgmental way, EFT focuses more on the cognitive and interpersonal experiential perspective. Within the EFT framework, once recognition of the emotional experience occurs, clients must cognitively orient to that experience as a source of information in order to explore, reflect on, and make sense of it. This is achieved by examining the beliefs associated with the experienced emotion, and by identifying factors that can motivate a change in personal meanings and beliefs. EFT recognizes the adaptive function of emotion as well as the potential for learning and formation of new neural organizations known as “emotion schemes”. Such schemes are automatic and invariably occur ‘out-of-awareness’, yet hold a tremendous influence over an individual’s emotional processing (Greenberg, 2011). A recent review of empirically supported psychological therapies for mood disorders in adults showed promising results for EFT (Hollon & Ponniah, 2010). These results related to both acute response and subsequent prevention of depressive symptoms (Ellison, Greenberg, Goldman, & Angus, 2009; Watson, Gordon, Stermac, Kalogerakos, & Steckley, 2003). However, to date, research examining EFT in a group setting has been limited to a small number of studies (e.g., Pascual-Leone, Bierman, Arnold, & Stasiak, 2011).

The limited effect on body weight of available treatments prompted us to devise new approaches for the management of BED-associated obesity. A potentially useful strategy might be the combination of psychotherapy for BED with dietary Counseling (DC) for weight loss, based on a reduction of energy dense foods. The rationale for this hypothesis comes from the observation that obese individuals with BED have increased gastric capacity compared to those without BED (Geliebter & Hashim, 2001). Furthermore, a lower consumption of energy-dense meals has been shown to reduce energy intake in individuals with BED (Latner, Rosewall, & Chisholm, 2008). This combined interventional approach has recently been tested in obese patients with BED where DC for weight loss was administered in conjunction with CBT for binge eating, and compared against CBT with integrated general nutrition counseling (Masheb, Grilo, & Rolls, 2011). The two treatments did not produce any differences in weight losses or binge remission. However, based on dietary outcomes of energy-dense food, and fruit and vegetable consumption, patients allocated to CBT plus DC responded better than those allocated to CBT plus general counseling. Thus, low-energy-density dietary counseling might be an effective method for enhancing the effect of psychotherapy for obese individuals with BED.

Utilizing an observational design, the purpose of the current study was to assess the effects of DC, EFT, and Combined Treatment (CT) in treatment-seeking patients with BED and obesity. Primary outcomes were: (a) remission from binge eating and (b) proportion of participants with ≥5% weight loss at the end of treatment and at six-month follow-up. In the planning of the study, we considered that the limited utilization of EFT in empirical studies was difficult to reconcile with a properly randomized trial. In particular, it was difficult to make a reliable estimate of the dropout rate. Thus, in conjunction with our previous experience with propensity score adjustment, a non-randomized design was employed.

In a previous study, we showed that EFT and CT were both highly effective in improving the desirable targets compared with DC in the short-term and at six-month follow-up (Compare, Calugi, Marchesini, Molinari, & Dalle Grave, 2013). The current study reports on secondary outcomes that relate to eating disorder and body image-related psychopathology and quality of life.

**Materials and methods**

**Participants**

The general flow of participants through the study is summarized in Fig. 1 and has been presented in a previous report (Compare et al., 2013). The study involved adult patients (n = 189) meeting DSM-IV research criteria for BED (American Psychiatric Association, 1994) who were referred to our outpatient department for the treatment of eating disorders by family doctors or other clinicians. To be eligible for the study, patients were required to: (i) be aged between 35 and 60 years, (ii) have a body mass index (BMI) of 30 or greater, and (iii) meet DSM-IV criteria for BED. Exclusion criteria were: (i) concurrent treatment for eating, weight, or psychiatric illness, (ii) active medical condition that might have influenced weight or eating (e.g., diabetes or thyroid problems – as determined by laboratory testing), (iii) severe current psychiatric conditions requiring different treatments (e.g., psychosis, bipolar disorder), and (iv) pregnancy or lactation. Following receipt of written informed consent, patients meeting all of the eligibility requirements for the treatment of eating disorders by family doctors or other clinicians. To be eligible for the study, patients were required to:

**Fig. 1. Flow diagram of the study.**
criteria completed baseline assessment procedures and entered one of two treatment programs (described below). Group allocation was based on various criteria (also described below) including psychometric test-informed therapist judgment and personal acceptance.

Diagnostic assessment

The diagnostic assessment was completed by experienced clinical psychologists. The DSM-IV diagnosis of BED was based on the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I/P [First, Spitzer, Gibbon, & Williams, 1996]) which has excellent inter-rater reliability (kappa = 1.0) for BED.

Outcome measures

The effects of treatment on eating disorder-related psychopathology and quality of life were tested per protocol using the following questionnaires:

Binge eating scale

(BES [Gormally, Black, Daston, & Rardin, 1982]): The BES is a 16-item self-report measure of the presence and severity of behavioral and cognitive characteristics of binge eating. Individual items (graded from 0 to 3) examine both behavioral signs (e.g., eating large amounts of food) and feeling or cognition during a binge episode (e.g., loss of control, guilt, fear of being unable to stop eating). The sum of responses (i.e., the total BES score) provides a continuous measure of binge eating pathology from 0 to 48. A score > 27 conventionally serves as a cutoff value for identifying the presence of a severe eating disorder such as BED. Scores of ≤16 may be used as a screening values to exclude binge eating (Greeno, Marcus, & Wing, 1995). The BES is widely utilized in research on BED (Gladis, Wadden, Foster, Vogt, & Wingate, 1998) and has excellent internal consistency (Cronbach’s alpha: from 0.85 to 0.89) (Freitas, Lopes, Appolinario, & Coutinho, 2006; Gormally et al., 1982).

Body uneasiness test

(BUT [Cuzzolaro, Vetrone, Marano, & Garfinkel, 2006]). The BUT examines body shape and/or weight dissatisfaction, avoidance, compulsive control behaviors, feelings of detachment and estrangement toward one’s own body, and specific worries about particular body parts, shapes, or functions. The BUT consists of 34 items with scores ranging from 0 (never) to 5 (always). Scores are summed to form a Global Severity Index and higher scores indicate greater levels of body uneasiness (the BUT also comprises five subscales but these were not utilized in the present study). Test–retest correlation coefficients are highly significant (BUT-Global Severity Index, 0.89) and Cronbach’s alpha coefficients indicate good internal consistency (range, 0.64–0.89) (Cuzzolaro et al., 2006; Marano et al., 2007). Exploratory and confirmatory analyses has found the same statistical model in normal-weight individuals, in subjects without eating disorders (Cuzzolaro et al., 2006), and in patients with obesity (Marano et al., 2007).

Eating inventory

(EI [Stunkard & Messick, 1988]) (previously known as the Three-Factor Eating Questionnaire [Stunkard & Messick, 1985]): The EI is a 51-item self-report measure of eating attitudes with response scores on either a four-point (1 = rarely, 2 = sometimes, 3 = usually, 4 = always) or five-point Likert scale. Scores range from 1 (eat whatever and whenever you want) to 5 (constantly limiting food intake, never ‘giving in’) and are arranged into three domains: (i) dietary Restraint (the cognitive ability to restrain food intake), (ii) disinhibition (tendency to lose control over eating), and (iii) hunger (the perception of hunger/satiety). Higher scores indicate greater levels of restraint, disinhibition, and hunger. The Cronbach’s alpha coefficients of the three domains (range, 0.85–0.93) reflect a good level of internal consistency (Cappelleri et al., 2009; Karlsson, Persson, Sjostrom, & Sullivan, 2000; Stunkard & Messick, 1985). The scale exhibits good reliability and validity that has been established in numerous studies (e.g., Gorman & Allison, 1995).

Obesity-related well-being

(ORWELL-97 [Mannucci et al., 1999]). The ORWELL-97 is an 18-item questionnaire measuring obesity-related quality of life (Mannucci et al., 1999). For each item of the scale, patients are asked to score the intensity of the symptoms and the subjective relevance of these symptoms to their own lives. Scoring is based on a 4-point Likert scale and the final score reflects the intensity and subjective relevance of physical and psychological distress generated by overweight. Higher scores indicate higher levels of distress. The ORWELL-97 has been widely used in research involving obese individuals (e.g., Allegri, Russo, Roggi, & Cena, 2008; Mannucci et al., 2010; Minniti et al., 2007; Petroni et al., 2007), and has good levels of internal consistency (Cronbach’s alpha total score, 0.83) (Mannucci et al., 1999).

Treatment

Emotionally focused group therapy

EFT was administered as 20 group sessions (10–15 participants per group; weekly sessions of 60–90 min duration) over a five-month period. EFT adapted for BED is a focal treatment consisting of three overlapping phases (Greenberg, 2002). During the first phase, the therapist helps clients to: (i) reflect on and reevaluate emotion schemes linked with binge eating, (ii) describe their feelings in words in order to aid them in solving problems, and (iii) become aware of whether their emotional reactions are their primary feelings in this situation. During the second phase, therapists help clients to explore secondary reactive and primary maladaptive emotional responses. In the final phase, the client is helped to access subdominant adaptive emotional responses. In the current study, group sessions comprised: (i) a review of the past week and participant updates, (ii) one-to-one participant chair-work session1 (approximately 45 min duration), with a second therapist monitoring the group for reactions, (iii) analyses of the participant’s chair-work, and (iv) weekly end-of-session questionnaires. According to the manual guidelines (Elliott & Greenberg, 2007), the specific goals of EFT are: (a) the identification of interpersonal needs, past and current patterns of interpersonal behavior that attempt to satisfy those needs, and the corresponding underlying emotional experiences, (b) the development of effective interpersonal behavior to satisfy such needs in a more adaptive manner; and (c) the identification and processing of avoided emotions associated with all therapeutic engagement. Specific EFT techniques utilized in the group sessions included the ‘two-chair dialogue’, the ‘empty-chair dialogue’, and the ‘two-chair enactment’ for a self-interruptive split (wherein one part of the client’s self interrupts or constricts

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1 In this technique, the therapist uses an empty chair to help the client become more aware of their feelings and to develop a stronger ability to cope with daily living situations. This technique is based on three variations: (a) patients express one side of the conflict in each chair, and switch chairs as the conversation progresses, (b) patients express their feelings in one chair, then switch chairs and express the significant other’s imagined response, and (c) patients sit in one chair and speak to an imagined significant other in the empty chair, with no imagined response from the significant other.
emotional experience and expression) (Greenberg, 2011; Robinson, McCague, & Whissell, 2012). EFT proposes that helping clients change the way in which they access and use their emotions in an empathic and caring relationship leads to the modification of their emotion schemes as well as the self-organizational frameworks responsible for problematic psychological functioning (Elliott & Greenberg, 2007). Thus, according to the EFT framework, negative symptoms reflect the operation of implicit over-generalized emotion schemes developed through personal experience.

**Dietary counseling**

DC was administered as 12 one-hour weekly individual sessions during the first three-months of treatment, followed by eight weekly group sessions (30 min duration). During the last two months of treatment, DC was based on dietary counseling targeting the reduction of energy-dense food intake (Dalvit-McPhillips, 1984). During the first (i.e., the one-to-one) treatment phase, therapeutic themes included (i) obesity and its causes, (ii) evaluation of nutritional status, (iii) correct nutritional choices (e.g., alimentary pyramid, energy and nutritional requirements), and (iv) desirable body weight. During the second (i.e., the group) treatment phase, patients received instruction on (i) the preparation of meals with different energy density, (ii) the calculation of energy density using nutrition facts labels, and (iii) utilizing the energy–density formula and an energy–density value food chart. Patients were also informed about biological and social stimuli that regulate food intake and on strategies for practicing regular physical activity and for long term weight management. Clinicians reviewed the weekly topics and helped patients overcome obstacles preventing them from achieving energy density intake goals. Information was also provided on sample meals, menus, and recipes.

**Combined treatment**

In half of the participants in the EFT group, sessions were combined with DC. During the first three months of treatment, the DC sessions for participants receiving CT were programmed to take place on the same day (and one hour before) the EFT sessions. During the final two months of treatment, sessions were conducted on a group basis and comprised 60 min devoted to EFT and 30 min devoted to DC. Participants completed daily food diaries that were checked weekly by clinicians. Participants were also instructed to self-monitor and report episodes of binge eating and overeating.

**Treatment assignment**

Treatment condition assignment was conducted by an experienced clinical psychologist and was based on psychometric test results, clinical interview, and partly on patients’ preferences. EFT was preferred whenever binge eating was considered to be emotional in origin, whereas DC was preferred in subjects who required intense nutritional counseling. CT was favored where clinicians deemed that patients with emotion-derived binge eating would benefit from comprehensive nutritional counseling. However, other factors were also considered including: (i) time on the waiting list, (ii) participants being unable to attend at certain times of day, and (iii) the need to keep group sizes in each allocation condition (i.e., EFT, DC, and CT) as equal as possible.

**Six-month follow-up period**

No treatment was provided during the six-month follow-up period (i.e., after the end of the 20 week treatment phase). However, throughout the follow-up period, participants were encouraged to practice and apply the principles and techniques of the EFT and/or DC. Where possible, participants were encouraged to refrain from additional treatments or drug use before the six-month follow-up assessment but were provided with access to the study investigators for assistance with treatment planning or referrals.

**Sample size calculation**

The sample size was calculated on the primary outcome of BED remission. Based on a review and analysis of the literature, we hypothesized binge eating remission (DSM-IV diagnosis [First et al., 1996]) in 30% of participants at follow-up, and twice as many in at least one of the experimental arms. The total number of participants, allowing for a type 1 error of 0.05, a type 2 error of 0.10, and multiple comparisons summed up to 58 participants per group. The number was increased by 10% to account for attrition.

**Statistical analysis**

Statistical analysis was carried out on data for completers, comparing the effects of treatments on outcomes. Comparisons were performed using a propensity score approach in order to adjust treatment outcomes for baseline values. Utilizing logistic regression analysis, the propensity score was calculated as the probability to be assigned to a structured program (EFT with/without DC) based on clinical variables at baseline. The propensity score includes the conditional probability to be assigned to any specific treatment given individual characteristics, as well as the probability to accept the proposal suggested by physicians. The variables included in the logistic regression to calculate the score were age, sex, education, civil status, BMI, and BES value at baseline. Propensity scores were then used to adjust for baseline values in logistic regression analysis in different models, whereby treatment group was set as independent variable. DC was considered as the reference treatment. EFT with/without DC were also compared with each other (using EFT as the reference). Repeated-measures analysis of variance controlling for propensity score was performed in order to test significant changes from baseline to six-month follow-up in the three groups. In order to determine the possible confounding effects of binge remission on BUT and quality of life, the analyses was repeated after further adjustment for BES changes from baseline to six-month follow-up. Finally, linear regression analysis was carried out to test significant associations between outcome measures.

**Results**

Table 1 shows participants’ demographic and clinical characteristics. At baseline, sex, marital status, and educational level were significantly different among the three groups. Higher rates of males and lower educational level were found in EFT compared with both the CT and DC groups. A lower percentage of patients were reported living with a partner in the DC group. The DC group was characterized by lower BMI compared with the CT group, and by higher scores on the ORWELL-97 compared with both the CT and EFT groups. Finally, the EFT group had higher ORWELL-97 scores than CT group. All participants had severe BED (as confirmed by high scores on the BES).

**Attrition**

Although most participants missed a few sessions (EFT: median missed sessions = 1.3, min = 1, max = 3; DT: median = 1.5, min = 1, max = 3; CT: median = 1.4, min = 1, max = 3), dropout was defined by a complete discontinuation of attendance and failure to present at follow-up appointments. A total of 164 patients (86.8%) completed the treatment (continuers), whereas 25 patients (13.2%) left the program before conclusion (dropouts). A higher rate of dropout...
Table 1
Baseline psychometric testing in the three groups. Data are presented as mean ± SD, as median [interquartile rage] or as number of cases (%).

<table>
<thead>
<tr>
<th></th>
<th>EFT group (N = 63)</th>
<th>CT group (N = 63)</th>
<th>DC group (N = 63)</th>
<th>Test</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, N (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>21 (33.3%)</td>
<td>37 (58.7%)</td>
<td>37 (58.7%)</td>
<td>10.84</td>
<td>0.004</td>
</tr>
<tr>
<td>Female</td>
<td>42 (66.7%)</td>
<td>26 (41.3%)</td>
<td>26 (41.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status, N (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>17 (27.0%)</td>
<td>13 (20.6%)</td>
<td>13 (20.6%)</td>
<td>9.14</td>
<td>0.058</td>
</tr>
<tr>
<td>Living with partner</td>
<td>44 (69.8%)</td>
<td>49 (77.8%)</td>
<td>42 (66.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>2 (3.2%)</td>
<td>1 (1.6%)</td>
<td>8 (12.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational level, N (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary school</td>
<td>17 (27.0%)</td>
<td>8 (12.7%)</td>
<td>17 (27.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior high school</td>
<td>30 (47.6%)</td>
<td>22 (34.9%)</td>
<td>24 (38.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior high school</td>
<td>14 (22.2%)</td>
<td>24 (38.1%)</td>
<td>22 (34.9%)</td>
<td>20.23</td>
<td>0.010</td>
</tr>
<tr>
<td>Degree</td>
<td>1 (1.8%)</td>
<td>5 (7.9%)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1 (1.8%)</td>
<td>4 (6.3%)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current BMI (kg/m²)</td>
<td>33.0 ± 1.6</td>
<td>33.6 ± 2.6</td>
<td>32.3 ± 1.3a</td>
<td>7.32</td>
<td>0.001</td>
</tr>
<tr>
<td>Age (years)</td>
<td>50.8 ± 6.0</td>
<td>51.1 ± 4.1</td>
<td>50.4 ± 4.7</td>
<td>0.31</td>
<td>0.733</td>
</tr>
<tr>
<td>Objective bulimic episodes</td>
<td>17.5 [4.5]</td>
<td>17.5 [1.8]</td>
<td>16.9 [5.2]</td>
<td>0.34</td>
<td>0.845</td>
</tr>
<tr>
<td>Binge Eating Scale</td>
<td>34.2 ± 4.2</td>
<td>33.8 ± 4.6</td>
<td>32.9 ± 3.9</td>
<td>1.48</td>
<td>0.231</td>
</tr>
<tr>
<td>ORWELL-97</td>
<td>79.4 ± 3.6</td>
<td>76.4 ± 3.1a</td>
<td>84.5 ± 6.5ab</td>
<td>43.13</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>BUT-GSI</td>
<td>3.2 ± 1.3</td>
<td>3.3 ± 1.2</td>
<td>3.6 ± 1.3</td>
<td>1.42</td>
<td>0.243</td>
</tr>
<tr>
<td>Three Factor Eating Questionnaire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dietary restraint</td>
<td>10.5 ± 2.8</td>
<td>9.6 ± 1.8</td>
<td>11.1 ± 2.7d</td>
<td>6.04</td>
<td>0.003</td>
</tr>
<tr>
<td>Disinhibition</td>
<td>13.9 ± 1.2</td>
<td>13.8 ± 1.2</td>
<td>13.6 ± 1.6</td>
<td>0.65</td>
<td>0.523</td>
</tr>
<tr>
<td>Hunger</td>
<td>12.7 ± 0.7</td>
<td>12.9 ± 0.2</td>
<td>12.6 ± 0.9</td>
<td>2.84</td>
<td>0.061</td>
</tr>
</tbody>
</table>

* ANOVA with post hoc Bonferroni or Kruskall–Wallis with Bonferroni correction (p < 0.016) or Chi-Square test, as necessary.
  a p < 0.016 vs. EFT group.
  b p < 0.016 vs. CT group.

was reported in the DC group compared with the EFT and CT groups (27% vs. 12.7% vs. 0%, respectively; X² (2, N = 189) = 20.01, p < 0.001). A post hoc analysis showed that there were no significant differences in sex, age, and baseline BMI between participants who attended the follow-up assessment (164 of the 189 patients enrolled) and dropouts.

Body weight

The average body weight at baseline was 99.1 ± 6.8 kg (BMI, 32.3 ± 1.3 kg/m²) for the DC group, 99.9 ± 8.5 (BMI, 33.0 ± 1.6) for the EFT group, and 97.9 ± 5.2 (BMI, 33.6 ± 2.6) for the CT group. At the end of the treatment, body weight had decreased to 93.0 ± 0.5 (BMI, 30.3 ± 2.4) for the DC group, 90.0 ± 0.5 (BMI, 30.1 ± 2.1) for the EFT group, and 89.5 ± 3.2 (BMI, 30.3 ± 1.9) for the CT group (all groups, p < 0.001). At six-month follow-up, the average body weight was 93.7 ± 2.4 (BMI, 30.5 ± 2.6) for the DC group, 86.7 ± 0.6 (BMI, 29.3 ± 1.7) for the EFT group, and 86.9 ± 0.5 (BMI, 29.2 ± 1.8) for the CT group (p = 0.035, p < 0.001, and p < 0.001 respectively). The overall percentage change in body weight averaged −11.4 ± 5.4% for EFT group, −13.2 ± 8.6% for the CT group, and −5.4 ± 7.7% for DC group (all groups, p < 0.001).

Eating disorder-related psychopathology

Repeated analysis of variance, controlling for propensity score, indicated that pre–post scores on the BES, BUT-GSI and EI-Hunger had significantly decreased in the CT and EFT groups (but not the DC group). By the end of treatment, 63% of CT participants and 33% of EFT participants had a BES score that was below the threshold of attention for BED (≤16), whereas no participants in the DC group reached this target. At six-month follow-up, the same threshold was attained by 71% and 46% of participants in CT and EFT groups respectively – again with no participants in the DC group reaching this target. EI-Restraint increased significantly in the three groups from baseline to end of therapy, but these therapeutic gains were only maintained through to six-month follow-up by the DC group. EI-Disinhibition decreased significantly in the three groups (Table 2). After adjustment for changes in BES score, differences were no longer observed, indicating that changes on body image dissatisfaction were largely dependent on binge eating remission.

Health-related quality of life

After controlling for propensity score, pre–post scores on the ORWELL-97 decreased significantly in all groups, but more so in CT and EFT groups compared to the DC group (Table 2). More specifically, scores decreased by 22.7 ± 5.0 points for the EFT group, by 21.8 ± 3.4 points for the CT group, and by just 12.6 ± 7.4 points for the DC group (all groups, p < 0.001). Of particular note, changes in ORWELL-97 scores at follow-up were not only associated with changes in body weight (r = 0.296; p < 0.001), but to a greater extent were also associated with changes in BES scores (r = 0.695; p < 0.001) (Fig. 2). A repeated analysis controlled for changes in BES scores and confirmed the significant decrease in ORWELL-97 scores for all groups.

Discussion

This is the first study assessing the relative effectiveness of EFT, DC, and CT in treatment-seeking patients with BED and obesity. In the current study, the positive effects of EFT and CT on primary targets (Compare et al., 2013) were extended to secondary outcomes. Participants in both the CT and EFT groups demonstrated significantly better outcomes at therapy termination and follow-up than participants in the DT group. These outcomes related not only to reductions in weight, but also to improvements in psychopathology...
and quality of life. Of particular noteworthiness, CT resulted in the greatest improvements in binge eating and weight loss that were maintained through to six months following the end of treatment.

Clinically, our results, along with data from other groups (Chen, Matthews, Allen, Kuo, & Linehan, 2008; Clyne, Latner, Gleaves, & Blampied, 2010; Telch et al., 2001), stress the utility of structured therapeutic techniques focused on emotions to interrupt the dysfunctional pattern of emotional dependence on food in BED patients. The data also suggest that the combination of psychotherapy and DC might be a promising strategy to produce both an improvement of the eating disorder psychopathology and a healthy weight loss. A top-down approach of the group setting. By allowing the patient to experience “live” the relational dimensional of emotional dependence on food and binge eating, supports a role of binge eating remission as a possible driver of improved quality of life.

In general, our results indicate that improved processing of maladaptive emotional schemes helps to ameliorate the need to use food to modify emotional experience. The possible mechanisms of action of the EFT treatment may be attributed to the process-experiential therapeutic approach of the group setting. By allowing the patient to experience “live” the relational dimensional of emotional dependence on food and binge eating, supports a role of binge eating remission as a possible driver of improved quality of life.
maintained at 12-month follow-up. Although it is not possible to make direct comparisons, findings from the follow-up component of the present study suggest that the different approach to emotional experience employed by EFT might result in long-lasting benefits. However, further empirical investigation is required to evaluate this hypothesis.

The present study has two main strengths. First, it is the first report on the effect of EFT, either alone or combined with DC, in the treatment of patients with BED and obesity. Second, its observational design and the several questionnaires filled in by patients allowed for a comprehensive analysis of the effects of different treatments on a variety of outcomes—including eating disorder-related and quality of life-associated parameters in a “real world” obesity center setting. The study is also limited by a number of factors. First, despite a post hoc analysis showing that the group available at follow-up was not different from the total entry population, the subjects in the DC group had higher rates of dropout compared to those in both EFT and CT groups. Second, the analyses were based on a propensity score approach. The propensity method adjusts the effect of treatment for multiple known confounders, but it cannot control for residual unknown variables. Furthermore, the propensity score approach does not overcome a possible initial selection bias (Foster, 2003; Little & Rubin, 2006). Thus, this study’s findings are definitely less robust than those obtained by randomized controlled trials (Rubin, 2007), but adjusting by propensity produces valuable data reflecting the “real world” of disease treatment and the procedure is largely accepted in the study of chronic diseases. This is a limitation from the point of view of evidence-based medicine, but it is a point of strength in terms of external validity, provided that new data emerges to confirm the positive outcomes obtained with CT and EFT at longer follow-up.

In conclusion, despite the abovementioned limitations, our results reinforce the potential usefulness of EFT for the treatment of binge eating. Techniques focused on cognitive and interpersonal experiential perspective of the emotions, particularly when associated with DC produce positive results on binge-eating remission, weight loss, eating attitudes toward eating, body uneasiness, and health related quality of life in treatment-seeking BED patients with obesity.

References


