Self-Treatment of Bulimia nervosa

By

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University of Manitoba

A Thesis

Submitted to the Faculty of Graduate Studies in Partial Fulfillment of the Requirements of

DOCTOR OF PHILOSOPHY

Department of Psychology
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THE UNIVERSITY OF MANITOBA

FACULTY OF GRADUATE STUDIES

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A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of Manitoba in partial fulfillment of the requirements of the degree of

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LETTER OF ACKNOWLEDGEMENT

In completing an effort such as this, I am indebted to a number of people. First, I would like to thank my advisor, Dr. Michael LeBow, for being unwavering in his support of me throughout my graduate school years. He allowed me to pursue my own research and clinical interests within the confines of his area of expertise, was always pragmatic, and helped me to develop both my clinical and research skills. I am grateful for his time and effort. I would like to thank Dr. Joseph Rallo, who served on both my Master's and Doctoral thesis committees. His insight about the problem of eating disorders and his helpful suggestions throughout graduate school have greatly enhanced the quality of my work. His support of me and his supervision of my clinical internship were/are also appreciated. I want to acknowledge Dr. Edward Johnson who also served on both my Master's and Doctoral committees. I have learned much from his eye for detail and attention to issues of research design. I want to thank Dr. Gerry Sande who served on my Doctoral committee despite having a hectic work schedule. His input was valuable and appreciated. Lastly, I want to thank my partner Scott, for his great sense of humour throughout these interesting times and his love and support.

Norah Vincent

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Abstract

The efficacy of a 15-week self-treatment program for those with bulimia nervosa was investigated. Six females with a DSM-IV diagnosis of bulimia nervosa served as participants in two concurrent multiple-baseline designs. Treatment was self-administered via a therapeutic manual and compliance was measured by the submission of weekly review questionnaires and mail-in reports. Mail-in reports included Fairburn's (1995) self-monitoring sheet, a Time Log, an author-devised Compensatory questionnaire (ACQ), and the State Self-Esteem Scale (Heatherton & Polivy, 1991). Results were examined using visual inspection and interrupted time series analysis (ITSACORR: Crosbie, 1993). At post-treatment, using the method of visual inspection, results showed that treatment exerted a modest controlling influence on binge eating and purging frequencies for 5 of 6 subjects, and that one participant became abstinent (although data was highly variable which made interpretation difficult). Data from 6-month and 1-year follow-ups showed that some, but not all, of the treatment gains were maintained. Although the compensatory skills model proposes that improvements in cognitive and behavioral coping culminate in less frequent binge eating, there was not a close temporal association between skill improvement and binge eating frequency in the current study. Instead, results might be explained by conceptualizing eating self-efficacy as a mediator of compensatory skill (i.e., improved compensatory skill leads to enhanced self-efficacy which produces reduced eating disturbance).

Self-Treatment of Bulimia Nervosa

Bulimia nervosa is a significant mental and medical health care problem (Battle & Brownell, 1996; Kerr, Skok, & McLaughlin, 1991). Those with bulimia nervosa recurrently consume high calorie foods (i.e., binge eating), during which loss of control over eating is experienced. Following a binge, individuals with bulimia nervosa will often engage in inappropriate compensatory behaviors to prevent feared weight gain (i.e., vomiting, laxative or diuretic misuse, fasting, excessive exercise). Self-evaluations of those with bulimia nervosa tend to be strongly influenced by perceptions of body shape and size (American Psychiatric Association, 1994; Brownell & Foreyt, 1986). Although approximately 90% of individuals with eating disorders are female, similar problems have been documented in males (Crisp & Toms, 1972; Oyebode, Boodhoo, & Schapira, 1988).

Estimates of the prevalence of this problem vary across studies, dependent on sample and methodology. On average, reports indicate that anywhere between 3-5% of females in college or high school populations meet DSM-III-R criteria for bulimia nervosa (Heatherton, Nichols, Mahamedi, & Keel, 1995; Pyle, Neuman, Halvorson, & Mitchell, 1991), but that older, more heterogeneous populations tend to have lower rates (1-3%) (Hart & Ollendick, 1985; Langer, Warheit, & Zimmerman, 1991). It is estimated that approximately 1-2% of females meet criteria for DSM-IV bulimia nervosa (Fairburn, 1995).

Therapies for Bulimia Nervosa

Due to an increasing recognition that bulimia nervosa is prevalent, several treatment approaches have been developed. Some of these are behavioral, cognitive-behavioral, and interpersonal in nature. Although other forms of therapy are widely used (e.g., systemic), they have not had adequate research attention and so will not be discussed.

Interpersonal

The interpersonal model of eating disorders posits that disturbed eating behaviors (e.g., binge eating, fasting) arise from unsatisfactory interpersonal relationships in childhood and/or adulthood

(Fairburn, 1993; Fairburn et al., 1993; Fairburn et al., 1991). Gilligan, Rogers, and Tolman (1991) describe that dimensions of relatedness and connectedness are important in the formation of identity in young women. These authors argue that a disturbance in interpersonal relations during adolescence and young adulthood produces significant psycho-social stress. For example, relational problems such as difficulty managing conflict, adjusting to a change in a relationship, problems with a sexual relationship, the experience of loss, and the inability to form or maintain close intimate relationships have been reported by those with bulimia nervosa (Johnson, Corrigan, Crusco, & Schlundt, 1986; Johnson, Stuckey, Lewis, & Schwartz, 1983). According to advocates of the interpersonal conceptualization, eating disorders represent an attempt to cope with such stress. Consequently, interpersonal treatments emphasize enhancing current social relations, often through the examination of personal expectations and unsatisfying aspects of friendships. In this context, no references to eating, weight, or shape are made.

Behavioral

Unlike interpersonal conceptualizations of bulimia nervosa, behavioral formulations acknowledge the important role of learning, anxiety reduction, and habitual behavior in the development of bulimia nervosa. According to behavioral theory, those with bulimia nervosa experience powerful negative reinforcement (Hatsukami, 1985) which is maintained by escape conditioning. For example, individuals learn that the behavior of binge eating allows for the termination of aversive sensations such as fear,anxiety, and loneliness. Similarly, purging is viewed to increase the frequency of binge eating for the same reasons and to function as a delayed-acting reinforcer. According to this model, the withdrawal of the opportunity to binge and purge, or the insertion of a lengthy delay between the response and the reinforcer should produce a decrease in binge eating. The examination of alternative methods to cope with distressing sensations (e.g., anxiety) is also encouraged. In contrast, other behavioral conceptualizations stress the habitual nature of bulimia nervosa, which is the idea that such behaviors are linked to deficits in knowledge regarding appropriate eating and exercise behaviors

(Wardle & Beinart, 1981). According to this view, features characteristic of those with bulimia nervosa (i.e., anxiety, obsessiveness) are understood to be consequences of disturbed eating patterns (i.e., chronic dieting, binge eating) and not the reverse.

The behavioral treatment of bulimia nervosa is organized around (a) the assessment and modification of the contingencies of reinforcement surrounding disturbed eating behavior, (b) the reduction of phobic-like anxiety associated with eating and weight gain, and (c) education regarding appropriate eating and weight loss behaviors. Techniques in the treatment of bulimia nervosa include a form of counter-conditioning whereby the conditioned stimulus of forbidden food is paired with a new response (i.e., relaxation response) instead of the former conditioned response (i.e., fear/anxiety). This is sometimes accomplished using exposure plus response prevention strategies (ERP)(Rosen & Leitenberg, 1982). In ERP strategies, clients are exposed to feared stimuli (i.e., sight or ingestion of forbidden foods) with the planned prevention of the response (i.e., binge eating, purging). Instead of binge eating/vomiting, clients are encouraged to process the experience with the therapist (Johnson, Schlundt, & Jarrell, 1986). Finally, other behavioral techniques are advocated such as stimulus control (i.e., removal or restricted access to forbidden foods, suggestions to eat in public place to resist chance of binge eating), and psycho-education.

Cognitive-Behavioral

Unlike pure behavioral conceptualizations of bulimia nervosa, cognitive-behavioral formulations emphasize the idea that dysfunctional beliefs about shape and weight promote the development and maintenance of this condition (Fairburn, 1981). Many authors argue that Western culture espouses the view that happiness/personal success for women is synonymous with a thin figure and low weight (Garner & Garfinkel, 1985; Striegel-Moore, Silberstein, & Rodin, 1986). In contrast, men are encouraged to be more muscular and athletic, but not necessarily more slender (Wang et al., 1993). The equation of weight/shape with happiness/success is partly due to the repeated presentation of slender females in media broadcasts and advertisements

(Hatfield & Sprecher, 1986). Some contend that this implicitly suggests that a slender appearance is an important variable for women (Striegel-Moore et al., 1986), and in so doing, encourages unusual weight-control practices. Using equation modelling, Raphael and Lacey (1992) provided evidence of a direct effect of media exposure on eating disorder development; the more frequent media exposure, the more frequent problems with disturbed eating behaviors. For women, the desire to be thin is compounded by another factor. Research in social psychology examining gender differences in physical attractiveness shows that men value physical attractiveness and low weight in romantic partners significantly more than do women (Buss, 1989; Feingold, 1990). Whether this preference is biological or sociocultural in origin is currently debated. Regardless of etiology, many females in Western cultures come to believe that weight and shape are highly significant. Although this belief has been termed "maladaptive" in the literature, this is likely a misnomer. Pragmatically, it seems to be highly adaptive, if securing a romantic partner is any measure of successful development, as some argue (Erickson, 1982).

Belief in the centrality of thinness often leads to dietary restraint, or the deliberate reduction of caloric intake (Brownell, 1991). Such restraint often precedes the onset of bulimia nervosa (Fairburn et al., 1985; For another view see Wilson, Nonas, & Rosenblum, 1993) and may lead to weight gain (Brownell et al., 1986). Also, dieting is known to have a variety of biological, cognitive, and affective consequences including irritability, anxiety, depression, hypochondriasis, and preoccupation with food (Booth, Lewis, & Blair, 1990; Garner, Rockert, Olmsted, Johnson, & Coscina, 1985), thus beginning a dangerous cycle. Of course not everyone who diets will binge eat. Other factors such as genetic predisposition, familial influence, personality, and individual psychopathology interact with diet-induced mechanisms to lead to bulimia nervosa (Strober, 1991). Thus, cognitive conceptualizations emphasize that maladaptive attitudes lead to dietary restraint which subsequently leads to bulimia nervosa (in vulnerable individuals).

Therefore, the cognitive-behavioral treatment of bulimia nervosa includes psycho-education regarding this cycle, support to lessen dietary restraint, and behavioral techniques (e.g., self-

monitoring, stimulus control, phasing in of feared foods). Cognitive therapy normally ensues, emphasizing the control or replacement of so-called negative affect through the articulation and alteration of maladaptive thought patterns. This is often achieved by asking clients to conduct experiments to test the adequacy of their cognitions. Once maladaptive thinking is observed, disputation and/or the rehearsal of alternate thoughts are encouraged. Finally, a relapse prevention component is included.

Efficacy of Treatment

Interpersonal Therapy (IPT). Although clinical research into IPT is new, there have been several well-controlled investigations of efficacy. Results from this research show that IPT reduces disinhibition, dietary restraint, overeating, dissatisfaction with weight/shape, and increases social adjustment (Fairburn et al., 1993; Fairburn et al., 1991; Wilfley et al., 1993). A 30% abstinence rate for binge/purging at post-treatment has been reported (Fairburn et al., 1993) and follow-up data show that positive effects increase with time. For example, Fairburn et al. (1993) reported an abstinence rate of 43% for binge/purging at one-year post-treatment.

Behavior Therapy (BT). Short-term outcomes from the behavioral treatment of bulimia nervosa include a cessation of binge eating in 40% of clients, fewer binge eating sessions in 30%, less frequent vomiting in 70%, and no improvement in 30% (Nutzinger & de Zwaan, 1990; Rosen, 1987). Nutritional counselling alone has been shown to produce a significant improvement in the frequency of binge eating and purging in female outpatients (Laessle et al., 1991; O'Connor, Touyz, & Beumont, 1988), however drop-outs are considerable. Other combined packages of self-monitoring, psycho-education, prescribed regular eating, stimulus control, problem-solving training, and relapse prevention have produced reductions in disturbed eating behavior, attitudes to shape and weight, depressed mood, and general distress immediately post-treatment (Fairburn et al., 1991). Although exposure plus response prevention has produced significant short-term gains (comparable to CBT), one year follow-up data is very poor (i.e., 100% relapse)(Steere & Cooper, 1995). Research indicates that there is a 38% abstinence rate for

binge eating/purging at post-test using either group or individual formats (Fairburn et al., 1993; Laessle, Waadt, & Pirke, 1987), but that abstinence rates of 20% are found at one-year follow-ups (Fairburn et al., 1993). Thus, long-term outcomes for BT are less satisfactory than short-term ones.

Cognitive-Behavioral Therapy (CBT). Short-term CBT outcomes include reductions in the frequency of disturbed eating behaviour, distorted cognitions, phobic anxiety, hostility, obsessive-compulsive symptomatology, and depressed mood (Kirkley, Schneider, Agras, & Bachman, 1985; Agras, Schneider, & Arnow, 1989; Fairburn et al., 1993; Fairburn et al., 1991; Fairburn, Kirk, O'Connor, & Cooper, 1986; Fairburn et al., 1985; Jones, Peveler, Hope, & Fairburn, 1993; Wilson et al., 1985). The addition of exposure plus response prevention to CBT has not been found to significantly increase the efficacy of treatment (Agras et al., 1989; Cooper & Steere, 1995; Wilson et al., 1991). Research indicates that 11-71% of individuals achieve abstinence from binge eating at post-test using individual CBT (Fairburn et al., 1991; Garner, Rockert, Davis, Garner, & Eagle, 1993; Wilson, Eldredge, Smith, & Niles, 1991). The variability in abstinence rates may partly be explained by the inclusion of different treatment components included in the various CBT packages (Mitchell, Hoberman, Peterson, Mussell, & Pyle, 1996). In the long-term (one-year post-treatment), CBT is reported to produce positive changes in self-esteem, depression, general distress, social functioning, and disturbed beliefs regarding weight and shape (Agras et al., 1994; Fairburn et al., 1993). Research into CBT outcomes shows that approximately 45% of those with bulimia nervosa cease binge eating/purging at 6-month and one-year intervals following treatment (Garner et al., 1987).

Treatment Summary

From a review of the literature, it would appear that abstinence rates for binge eating in the short-term are most favourable for CBT, followed by BT, and then IPT. In contrast, abstinence rates for binge eating in the long-term are essentially equivalent for CBT and IPT, followed by BT. Compared to other forms of help, CBT appears to be the most efficacious intervention to date

for individuals suffering from bulimia nervosa nervosa (Wilson & Fairburn, 1993). A large research base now supports the idea that CBT techniques are effective in reducing binge eating/purging frequency, dietary restraint, negative attitudes about shape and weight, and general distress (Fairburn et al., 1993; Fairburn et al., 1991; Fairburn et al., 1985; Freeman, Barry, Dunkeld-Turnbull, & Henderson, 1988; Wilson et al., 1985; Yates & Sambrailo, 1984), with a modest number of drop-outs (i.e., 16-20%)(Agras, 1993; Fairburn et al., 1993).

Problems with In-Person Treatment

Many techniques in the treatment of bulimia nervosa are effective. These include self-monitoring, stimulus control, psycho-education, identifying and challenging maladaptive thoughts, nutritional planning, problem-solving, and preparation for relapse prevention (Freeman, Beach, Davis, & Solyom, 1985; Mitchell et al., 1985). Despite considerable investment in developing and evaluating treatments for those with bulimia nervosa, problems remain. Some of these relate to a reported pervasive sense of shame which precludes clients with bulimia nervosa from seeking health services (Enright, Butterfield, & Berkowitz, 1985). Once in treatment, difficulties creating a therapeutic alliance (Thompson & Sherman, 1989) and managing countertransference issues can occur (Hamburg & Herzog, 1990). Co-morbidity with chronic mental health problems such as Borderline Personality Disorder, Social Phobia, and Chemical Dependency can further complicate treatment (Mitchell, Specker, de Zwaan, 1991). Other obstacles pertain to the general inadequacy of long-term gains (Herzog, Keller, Lavori, & Sacks, 1991), premature attrition (Coker, Vize, Wade, & Cooper, 1993; Fairburn et al., 1993; Riebel, 1990), and relatively high relapse rates (i.e., 26-43%)(Keel & Mitchell, 1997). More pragmatic issues impacting on the effectiveness of in-person approaches include the availability of mental health programs in general and the cost of such services (Battle & Brownell, 1996; Gottlieb & Peters, 1991; Wedding, Ritchie, Kitchen, & Binner, 1993).

Self-Treatment

Partly in response to financial cut-backs, several researchers have advocated the development

of self-treatment programs for a variety of non-eating related problems such as insomnia (Morawetz, 1989), anxiety (Ghosh & Marks, 1987), and depression (Scogin, Jamison, & Gochneaur, 1989). Perhaps surprisingly, some investigations in this area have revealed that self-treatment is as effective as treatment involving therapist contact (Cuevas, 1984; Ghosh & Marks, 1987; Rucker, 1983; Yager et al., 1989). Recently, authors of two meta-analytic reviews (Gould & Clum, 1993; Scogin, Bynum, Stephens, & Calhoon, 1990) concluded that there are few differences in outcome between self-treatment and self-treatment plus minimal therapist contact for the problems of insomnia, anxiety, and depression. Findings suggest that variables such as the type of target problem (i.e., parenting, depression, eating)(Scogin et al., 1990), self-treatment medium (i.e., visual, audiovisual) and type of dependent measure (i.e., behavioral observation, physiological, self-report)(Gould & Clum, 1993) are not associated with particular outcomes. Results showed that a shorter duration of treatment impacts positively on outcome and that habit problems (i.e., obesity, smoking), more than other types of problems (i.e., depression, insomnia, parenting), show less change with self-treatment.

Advantages. Advantages of self-treatment need to be further delineated. Research indicates that relapse following treatment completion is a significant problem for those with bulimia nervosa (Keller et al., 1988). Thus, there is a need for long-term managed care. Self-treatment by definition is self-guided and thus ideal for allowing long-term self-assessment and treatment. It is also a potent means of empowerment in the long-run. Other major advantages of self-treatment relate to cost and accessibility. Limiting therapist contact hours is cost-effective for both the client, therapist, and institution, and treatment can be applied in virtually any setting (Green, 1985). Finally, self-treatment is also likely to be viewed favorably by the bulimic client due to the preservation of anonymity, the reported tendency of those with bulimia nervosa to favor psycho-educational interventions (Lemberg & May, 1991), and the immediacy with which these efforts can be applied (Green, 1985).

Disadvantages. Disadvantages of self-treatment programs need to be noted as well. The

growing disillusionment with the medical model and increased consumerism have allowed clients to be more active in meeting their health-care needs, however as Krantz, Baum, and Wildeman (1980) comment, questions still remain as to how much clients should be told about their treatment. There is a danger that allowing clients a choice concerning treatment modality might produce greater feelings of accountability concerning outcome. This is problematic in cases where treatment fails or in cases where clients are inclined to drop-out. In these instances, those who have chosen and self-applied treatments may blame themselves, making negative, stable, and internal attributions regarding such failure (Rosen, 1987). Some of the dangers associated with self-blame arising from failure attributions can and should be addressed before treatment is initiated so as to lessen their potential for harm. Alarming are accounts that self-help efforts can lead to the worsening of a problem (Matson & Ollendick, 1977; Starker, 1988), although indications of this trend are few. Others note that premature attrition is a serious problem for self-treatment (Glasgow & Rosen, 1978). Arguing against this finding is Gould and Clum's (1993) report of near equivalent drop-out rates for self-help (9.7%) and control conditions (8.6%). We would expect drop-out rates from the latter to be more extreme. A more global criticism of self-treatment is that it tends to imply that the individual is responsible for her/his situation because the focus of treatment is on the individual, rather than on the community at large. This acts to discourage the examination of important social issues which may be perpetuating certain clinical problems (Rubel, 1984) and contributes to the problem of victim-blaming (Green, 1985). This is particularly problematic as impoverished clients are frequently over-represented in self-help groups (Chang, 1980) and yet are often the least likely to enact significant personal change due to limited educational and financial opportunities. Rubel argues that encouraging self-help approaches in the treatment of eating disorders may preclude the assessment of physical conditions which may be causing or exacerbating the problem. Advocates of self-treatment approaches would counter-argue that theoretically and pragmatically self-care is meant to complement, rather than replace professional health care (Haug, Wykle, & Namazi, 1989; Starker,

1988). These authors may under-estimate clients' abilities to make good choices for themselves. Deeble, Crisp, Lacey, and Bhat (1990) note that relatively large numbers (i.e., 90%) of eating disordered self-help participants with an eating disorder report concurrent professional assistance.

Self-Help Groups and Eating Disorders

Various reports of the efficacy of self-help groups for bulimia nervosa and anorexia nervosa exist (Deeble et al., 1990; Enright et al., 1985; Franko, 1987; Mallenbaum, Herzog, Eisenthal, & Wyshak, 1988; Rathner, Bonsch, Maurer, Walter, & Sollner, 1993; Rubel, 1984). One study revealed a 100% cessation of bulimia nervosa in an Overeaters Anonymous Group (Malenbaum et al., 1988), but other authors report abstinence rates ranging from 32.2% (Huon, 1985) to 38.5% (Daum & Leszynska, 1989) following group completion. Although the long-term efficacy of self-help groups for eating disorders has yet to be systematically evaluated, there is some indication that peer-only self-help groups are less effective than those with a facilitator and that members report a preference for a therapeutic orientation rather than none (Rubel, 1984). Reasons for this choice include complaints that self-help groups lack structure and that memberships are excessively open.

Is there Interest in Self-Help? Yager et al. (1989) surveyed readers of a women's magazine regarding the prevalence of DSM-III-R bulimia nervosa and the type of help sought for this problem. Of respondents, 51% of those with bulimia nervosa used non-professional help. Of those, 27.7% participated in Overeaters Anonymous (average of 37 sessions), 17.1% attended a self-help group (average of 26.8 sessions), and 28.8% joined Weight Watchers (average of 27 meetings). These utilization rates compare with those for professional help-seeking. For example, of those with bulimia nervosa, 28.8% received professional behavior modification, 25.5% participated in group therapy, 15.4% took part in hypnosis, 16% entered into nutritional counseling, and 10.6% sought pharmacological treatment. Non-professional approaches were strongly endorsed by this sample.

Self-Treatment and Eating Disorders

Self-treatment differs from the self-help approaches discussed in that self-treatment packages are usually provided in an individual format, with significant attention devoted to program assessment and evaluation. Most self-treatment programs include behavioral interventions and measurements. In addition, self-treatment approaches usually emphasize the importance of techniques (i.e., behavioral, cognitive) in promoting personal change, as opposed to social support (although this can be an additional component).

Is Self-Treatment for those with Bulimia nervosa Effective? More recently, research into the self-treatment of bulimia nervosa has been conducted (Cooper, Coker, & Fleming, 1995, 1994; Huon, 1985; Schmidt, Tiller, & Treasure, 1993; Treasure et al., 1994; Treasure, Schmidt, Troop, Tiller, Todd, & Turnbull, 1996). Huon (1985) tested an eclectic 13-month self-treatment package with 120 magazine respondents. Subjects (90 DSM-III bulimics; 30 normal controls) were randomly assigned to one of four experimental conditions: (1) self-treatment plus offer of support from a recovered bulimic, (2) self-treatment plus offer of support from an improved bulimic (but still with symptoms), (3) self-treatment alone, (4) waiting list control. Included in the treatment package was behavioral monitoring, motivational enhancement, cognitive re-structuring, coping and assertiveness training, and response prevention. Treatment was divided into 7 phases, with each subsequent phase mailed to participants pending receipt of the previous section's exercises. Measured in outcome was frequency of binge eating and satisfaction with body image (measured using the Body Cathexis and Self-Cathexis scales)(Secord & Jourard, 1953). Overall, results showed that 20% of participants were symptom-free at 3 month follow-up, and 32% at 6-months. Negative predictors of outcome included marked weight fluctuation. Neither current age, duration of bulimia nervosa, or binge eating frequency were predictive of outcome. Results also indicated that time of measurement (i.e., immediate post-test, 3-month follow-up, 6-month follow-up) and type of condition (i.e., self-treatment plus recovered support, self-treatment plus non-recovered support, self-treatment alone, control) significantly influenced dependent measures. Compared to

the control group, those in the treatment groups were binge eating less at post-test, and binge eating frequency continued to decline with follow-up. Those in the support conditions continued to show improvement over time compared to those in the pure self-treatment condition. Compared to controls, those in the experimental groups reported more satisfaction with body image at post-test. Neither type of condition or time of follow-up influenced body image scores.

These results should be interpreted cautiously as significant confounding group differences in initial Body Cathexis scores were present. Houn's results are also limited by a reliance on binge eating frequency and Body Cathexis as sole measures of change. Important validated indices of recovery for this population include frequency, intensity, and controllability of maladaptive thoughts, frequency of purging, degree of dietary restraint, mood, and coping. None of these variables were tapped. Other disadvantages of Huon's approach include an overly lengthy treatment duration and the absence of an independent evaluation of self-reported data (including initial diagnosis). Also problematic was a failure to assess prior and/or current mental health problems and treatments. Both of which may have impacted on outcome.

Schmidt et al. (1993) conducted an investigation of self-treatment. Subjects were 28 ICD-10 (World Health Organization, 1992) female outpatients with bulimia nervosa. Subjects reporting CBT within the last year were excluded. The treatment consisted of a 4-6 week eclectic handbook made up of nutritional education, behavioral self-monitoring, assertiveness and problem-solving training, relapse prevention, and goal setting. Outcome was measured by the Bulimic Investigatory Test (BITE)(Henderson & Freeman, 1987), Eating Disorders Inventory (EDI)(Garner, Olmstead, & Polivy, 1983), Beck Depression Inventory (BDI)(Beck et al., 1961), the Self-Concept Questionnaire (Robson, 1989), an author-devised nutritional knowledge scale, and a post-treatment clinician-rated assessment of global improvement. Of variables rated by clinicians, significant changes were observed (in order of degree from most to least) in: (a) global distress and dietary restraint, (b) abnormal diet pattern and vomiting frequency, (c) binge eating frequency, (d) weight preoccupation, and (e) other weight control behaviors. Unaffected by

treatment was overconcern with body shape, mood, self-concept, and attitudes measured by the EDI (i.e., interpersonal distrust, perfectionism). Based on clinician-ratings of global improvement, 46% of subjects were `very much' or `much' improved, 30.7% were `somewhat' improved, 23% were `unchanged' at post-test. Schmidt et al. (1993) concluded that a minimal treatment intervention for bulimia nervosa is effective in reducing symptoms and increasing nutritional knowledge.

Although these authors employed a multi-modal assessment package, conclusions from this research are limited by a failure to measure compliance with treatment, to have a consistent treatment duration, and to employ a control group. Also problematic is the brief treatment length. One review of treatment research in this area concluded that a minimum of 15 sessions is required to produce clinically-relevant change (Hartmann, Herzog, & Drinkmann, 1992). In combination, these factors question the validity of these conclusions.

Some of these authors later conducted a controlled evaluation of a new self-treatment manual for bulimia nervosa (Treasure et al., 1994). Eighty-one ICD-10 bulimic outpatients were assigned to one of three conditions. Conditions included: (a) 16-week CBT self-treatment manual (n = 41), (b) 16-week CBT individual therapy (n = 21), (c) waiting list control group (n = 19). Those excluded from participation had either severe co-morbidity (i.e., diabetes, suicidal, chemically dependent) and/or transportation/locational problems. Twenty-nine participants dropped out of treatment after onset. Psycho-education, self-monitoring, goal setting, assertiveness, cognitive re-structuring, problem-solving, and relapse prevention strategies were included in the self-treatment manual. Outcome (i.e., frequency of disturbed eating behavior) was measured via clinical interview and questionnaire data (e.g., Eating Disorders Inventory, Bulimic Investigatory Test, Beck Depression Inventory, Self-Concept Questionnaire). Results showed that full remission was achieved by 24% of those in the individual CBT condition, by 22% of those in the self-treatment manual condition, and by 11% of those in the control group. Overall, those in the individual and self-treatment conditions improved significantly and there was no difference between the two.

Concluded was that a self-directed treatment manual is a useful first intervention.

Although Treasure and colleagues used a multi-modal assessment package, randomized treatment, necessary controls, and adequate sample sizes, they neglected to assess compliance. Other issues impacting on the statistical validity of the project should be mentioned. These pertain to the measurement of outcome and type of statistical approach employed. First, it was unclear whether blind raters conducted clinical interviews. If not, derived ratings may have been biased. Second, although an attempt was made to evaluate pre- and post-test changes, the confidence interval method does not control for the effect of multiple testing and is likely to produce spurious results (unless effects due to autocorrelation are removed prior to conducting tests).

Cooper et al. (1995, 1994) have investigated the self-treatment of bulimia nervosa. The first effort consisted of a descriptive study detailing results using an eclectic self-treatment manual (Cooper, 1993) plus minimal therapist contact package. Participants were 22 outpatients with bulimia nervosa. Psycho-educational information, self-monitoring, nutritional planning, problem-solving, and cognitive re-structuring were included in the self-treatment manual. Individual supervision by a non-experienced social worker was also provided (modal number of 8, 20-30 minute sessions). Participants were self-treated for 4-6 months (varied according to participant) and were assessed at pre- and post-test intervals. Outcomes were measured using the Eating Disorders Examination and the Body Shape Questionnaire. Results showed that the mean frequency of binge eating declined by 85% and that the mean frequency of vomiting decreased by 88%, although abstinence rates were not reported. Other improvements in body shape and dietary restraint were noted.

Cooper et al. (1995) then replicated this study using a larger sample with more numerous measures. A 16-24 week, eclectic, self-treatment plus minimal therapist contact package (Cooper, 1993) was provided to 82 DSM-III-R outpatients with bulimia nervosa. Approximately 20% of subjects approached declined treatment using a self-help manual. Outcome was measured using the Eating Disorder Examination, Body Shape Questionnaire, restraint sub-scale of the Dutch

Eating Behaviour Questionnaire, the Beck Depression Inventory, and a clinical interview. At post-treatment, 33.3% were in complete remission, 45.5% had ceased vomiting, and 51.5% had ceased binge eating. Results indicated a decrease in the frequency of disturbed eating behaviors, and an increase in satisfaction with body shape and weight. Problems with mood and dietary restraint improved with treatment. Those with favourable clinical outcomes were contrasted to those with less favourable ones. Compared to those with a favourable outcome, those who did poorly were more than twice as likely to have a prior history of anorexia and/or a personality disorder. Concluded from this research was that self-treatment plus non-expert supervision is maximally effective for those free from anorexia nervosa and disturbing characterological patterns.

Problems with these investigations (Cooper et al., 1994 1995) include an inconsistent treatment duration, failure to measure compliance, lack of clarity regarding rater characteristics (i.e., blind, expert), and overly sophisticated treatment presentation. The manual includes considerable amounts of jargon. Lastly, the failure to include a control group in these studies (in the form of waiting list or self-monitoring condition) did not allow for the assessment of treatment effects independent from spontaneous remission or placebo.

More recently, Treasure et al. (1996) compared the effect of an 8-week self-treatment manual (Schmidt & Treasure, 1993) followed by 8 sessions of in-person CBT (sequential treatment) to 16-weeks of in-person CBT. Participants were 110 outpatients with ICD-10 bulimia nervosa nervosa or atypical bulimia nervosa nervosa who were randomly assigned to one of the two treatments. Individuals with severe comorbidity (i.e., diabetes, suicidal, alcohol dependence) or pregnancy were excluded from treatment. Outcome was measured using an author-devised rating scale which graded symptoms of bulimia nervosa (i.e., binge eating, purging, exercising) on a scale from "0" (symptom-free) to "16" (extreme disturbance). Pre-treatment, mid-treatment (8-weeks), post-treatment (16 weeks), and follow-up (18 month) assessments were conducted by an investigator not involved in providing the therapy. Those that were abstinent after 8-weeks of the

manual were not required to complete an additional 8 sessions of CBT. Instead, these individuals were contacted at 16-weeks for a post-treatment assessment. Results showed that drop-out rates were not significantly different between treatment conditions (e.g., 27% dropped out of in-person CBT group, 16% dropped out of sequential group), and that drop-outs were not distinguishable from completers on demographic variables sampled. Results revealed identical median symptom change scores for the sequential group and for the CBT group at post-treatment (decreased from a median of 6 to a median of 2), and identical abstinence rates at post-treatment (i.e., 30%) and at follow-up (i.e., approximately 40%). Although several subjects could not be reached for follow-up, there were no differences in post-treatment symptom scores for those who were followed-up versus those who were not. This supports the idea that follow-up symptom profiles were not artificially elevated. These authors concluded that a self-treatment manual alone is useful for symptom relief (in approximately 20%) and, when combined with a brief dose of therapy, can produce further treatment gains which are comparable to those obtained using a full 16-weeks of CBT (i.e., 30% abstinence). Problems with this research included a failure to measure compliance with self-treatment, lack of clarity regarding rater characteristics (i.e., blindness), and failure to have a consistent treatment duration across conditions. For example, some of those in the "sequential treatment" reduced their bulimic symptoms after 8 weeks, but waited for another 8 weeks to be assessed post-treatment. Thus, at the 16-week assessment, the outcomes of those who completed self-treatment early (i.e., at 8 weeks) may have deteriorated.

Although these authors did not report on the degree to which individuals complied with the manual, Troop, Schmidt, Tiller, Todd, Keilen, and Treasure (1996) focused on this in a separate publication. Compliance was assessed for those assigned (n = 55) to the sequential condition in Treasure et al. (1996). Subjects were verbally asked to indicate how much of the manual had been read (1, 25, 50, 75, or 100%), as well as the degree to which individuals shared the manual with another person, and the number of set exercises completed. Results showed that only 57% of participants read more than half the manual, that 43% completed at least two of a possible four

exercises, and that only 26% shared the manual with another person. Results indicated that a cessation in binging and vomiting was associated with amount read (with greater amounts read associated with less eating disturbance), however results barely achieved statistical significance ($p = .05$). In a standard multiple regression analysis, compliance as measured using a composite score, was the best predictor of full remission. It was of interest that no single exercise was more effective in predicting remission than any other. Predictors of compliance were assessed by examining correlations between composite compliance scores and other variables. Using a stepwise regression analytic approach, it was found that those who were more distressed read less of the manual, those who were more concerned about their weight completed fewer exercises, and that those who were less concerned about their weight and those who had a longer duration of illness were more likely to comply. When the sample was divided into "high" and "low" compliers based on a median split, 40% of the "highly compliant" group achieved full remission. The authors noted that this number is similar to that obtained using in-person approaches. One conclusion from the study was that those who have elevated weight concern have difficulty relinquishing control to a self-help manual and so should be prepped or coached before beginning such an endeavour so as to maximize compliance. Another interesting finding of the study was that duration of illness is positively related to compliance. This study was the first of its kind to examine compliance issues using a self-treatment manual, however, several aspects of the methodology bear comment. First, there may have been a response bias created by a) having clients report compliance directly to clinicians, b) assessing compliance at the end of treatment only and not all the way along, and c) forcing participant into responding to a limited number of categories (e.g., 0%, 25%).

Summary of Self-Treatment in Bulimia nervosa

Results from this review of studies evaluating self-treatment in bulimia nervosa suggests that this form of help may be efficacious and beneficial for at least a sub-set of individuals with this clinical problem. Results indicate that those with past or current anorexia and those with

personality disorders are least likely to benefit from self-treatment. The review also outlines persistent omission and methodological problems in the area. First, a fine-grained analysis of change in self-treatment is missing. An account of a mechanism or theory of change in self-treatment and the role of potential moderating variables (e.g., presence/extent of reading difficulties) in relation to outcome is nearly always absent. Next, the issue of internal validity (of the presented materials) is often not addressed (See Troop et al., 1996 for an exception). It is unknown to what extent subjects comply with treatment readings and/or suggestions, and to what degree they engage in psychological processes. There is as yet no agreement on a good measure of the latter (engagement in psychological processes), but Barlow, Hayes, and Nelson (1983) discuss strategies to enhance the former (compliance). These consist of acquiring an agreement (oral and written) from clients to self-monitor binge eating and purging, giving some initial instruction on self-monitoring, collecting a participation fee, informing subjects that the accuracy of their self-observations will be closely monitored, and showing interest in self-monitored data. Another technique to maximize compliance is to enlist the help of a third party (i.e., spouse or roommate of client) to provide confirmation of client's work. Barlow et al. (1983) discuss that this third party observation need be only intermittent to have its effect.

Other limitations to internal validity in these studies pertain to the potential for statistical regression of dependent measures from pre- to post-test and differential attrition from groups. For an example of the latter, results in Treasure et al. (1994) show that approximately twice as many individuals dropped out of the self-treatment condition (n = 14), compared to the individual CBT (n = 7) and control conditions (n = 8). Differential attrition impacts on research conclusions from group research if those who drop out do so for differing reasons (Flick, 1988). This can bias results in favour of positive treatment outcomes. Problems with external validity in the studies reviewed pertain to a possible pre-test sensitization effect. The completion of obtrusive pre-test measures may have focused subjects more on thoughts, behaviors, and feelings about self. This increased self-awareness may have resulted in changes along these dimensions irrespective of

treatment. This is more problematic for studies failing to use control groups (Cooper et al., 1995; Schmidt et al., 1994). Other limitations relate to inadequate construct validity. Amounts and types of experimenter/clinician attention and contact may have influenced outcome, but were not evaluated. Also, group differences (i.e., control vs. treatment) regarding expectations of improvement might have impacted on outcome but were not measured.

Despite limitations, results from these few self-treatment studies suggest that self-treatment for bulimia nervosa is effective. What is now needed is a carefully conducted research trial which includes a measure of compliance, the inclusion of maximally effective treatment components (based on existing literature), and a micro-analysis of the change process in self-treatment.

Successfully Implementing Self-Treatment

To address some of the weaknesses of self-help manuals, several recommendations have been offered (Glasgow & Rosen, 1978; Rosen, 1987). Some of these include regulating claims accompanying self-treatment materials and providing recommendations for use of the program (Rosen, 1987). Another common prescription is the explicit statement of the reading level of the materials (Rosen, 1987). Also, the clarification and discussion of known predictors of success as well as the extent to which program evaluation has been conducted is warranted (Glasgow & Rosen, 1978; Rosen, 1987). Although techniques successfully applied by a therapist do not always generalize to a self-help modality (Lowe & Mikulas, 1975; Zeiss, 1978), this is often prescribed as ethically appropriate (Rosen, 1987; Starker, 1988).

Model of Self-Change: Compensatory Skills

Having provided some justification for the use of self-help and more specifically self-treatment for the problem of eating disorders, a model of self-change needs to addressed. Many theories of personal change exist (Bandura, 1977; Brownell & Cohen, 1995; Hollon, Evans, & DeRubeis, 1988; Kanfer, 1971; Leventhal, Diefenbach, & Leventhal, 1992; Norcross, Ratzin, & Payne, 1989; Prochaska, DiClemente, & Norcross, 1992; Schwartz & Garamoni, 1986) yet there is little consensus on which is most accurate for which type of problem. One theory specific to

cognitive-behavioral therapies will be examined. This theory is the Compensatory Skills Model (DeRubeis et al., 1988; Barber & DeRubeis, 1989).

The Compensatory Skills Model posits that individuals acquire a set of cognitive and behavioral skills in CBT to cope with difficult emotional experiences. Some examples of such skills in coping with bulimia nervosa are the critical examination of evidence to test personal thoughts in situations regarding weight and eating, the scheduling of regular meals, concentrating on eating when eating, limiting the amount of "forbidden" food in the home, and engaging in activities incompatible with binge eating (e.g., exercising, talking with supportive person). According to the compensatory skills model, if these skills are used, problems (such as binge eating and purging) will be appraised as more controllable and as less emotionally intense (Teasdale, 1985), and a decline in reported binge/purge frequency will follow. If the model accurately describes change in cognitive-behavioral self-treatment, it would follow that: a) individuals who participate in CBT will report more frequent use of compensatory skills in the treatment phase (compared to the pre-treatment phase), b) improvements in the reported use of compensatory skills will lead to personal improvements in the controllability and intensity of thoughts regarding eating, weight, and shape, and, c) more frequent use of compensatory skills and improvements in the controllability and intensity of eating-related thoughts will precede (and not follow from) changes in binge/purge frequency. In the current study, the Compensatory Skills Model was examined by observing daily and weekly changes in the relationship between the reported use of compensatory skills and binge eating/purging frequency. To adequately test this model required a design which allowed for a frequent (i.e., weekly) and microscopic examination of these variables.

Summary

Research indicates that treatment for bulimia nervosa is effective under certain conditions and for certain individuals. Standardized in-person formats present certain difficulties (i.e., cost, accessibility, fear of disclosure, problematic therapeutic relationship) which may hinder treatment

gains. One alternative to in-person treatment is self-treatment. Outcomes in research examining the self-treatment of bulimia nervosa suggest that this is an efficacious intervention, with considerable practical utility. Past studies in this area are marked by an omission of important treatment components, the absence of a microscopic analysis of the change process, an absence of a theoretical explanation for change, and various flaws in research design. Therefore, there is a need for a validated comprehensive self-treatment manual for this problem.

Proposed Research

The current study assessed the efficacy of a 15-week self-treatment package for a community sample of individuals with DSM-IV bulimia nervosa. The effects of treatment on daily binge eating/purging frequency were measured. The study also examined whether changes in compensatory skills were associated with changes in binge eating/purging with treatment. Finally, the cost-effectiveness and treatment acceptability of this approach was evaluated. As this was a pilot study, no formal hypotheses were made although it was expected that a) there would be more frequent use of compensatory skills with treatment, b) more frequent use of compensatory skills would precede improvements in the controllability and intensity of thoughts regarding eating and weight, c) more frequent use of compensatory skills and improvements in the controllability/intensity of thoughts would precede declines in binge eating/purging frequency, and d) binge eating and purging would be less frequent with treatment.

Method

Design

A multiple baseline methodology was selected to answer the research question "does self-treatment impact on the frequency of binge eating and purging?". In a multiple baseline design across subjects, baseline data (e.g,. binge eating/purging frequency) is collected on each participant on a daily basis. The intervention (e.g., self-treatment) is initiated to individuals at different points in time. The impact of the intervention is demonstrated if behavior changes when and only when the treatment is introduced. This demonstration is bolstered by replications across

subjects.

The advantage of a multiple baseline approach is that it can demonstrate the effect of a treatment by showing that behavior change coincides with the introduction of the treatment at different points in time. Another advantage of multiple-baseline methodology is that it is prudent and allows for an examination of microscopic changes in variables such as compensatory skills and self-esteem. As the self-treatment manual used in the study had not been previously tested, it seemed appropriate from both cost- and ethical perspectives to test the manual with a small, rather than large, sample of individuals. Also, due to the vast amount of data to be collected per participant, a small sample size was judged as more than adequate to examine the variables in question. A final advantage of the multiple-baseline approach is that it provides some protection against assessment-related effects (e.g., reactivity) and time-related processes (e.g., maturation). The baseline phase of a multiple baseline design is equivalent to a control group in a large N design. A disadvantage of a multiple baseline design is that results from such designs do not generalize to large groups of people, however, advocates of single-subject research retort that between-subject designs do not ensure generalizability because these designs deal with averages and not with individual performance.

In this study, two concurrent multiple-baseline designs were used because binge eating and purging were expected to be somewhat variable (and so it was expected that baseline phases might be lengthy). For this reason, and given that this was an applied effort with clinical participants, it was decided to use two concurrent multiple-baseline designs (instead of one) which would allow for relatively shorter baseline phase for the last participant to receive the treatment (and therefore reduce lengthy waits for treatment).

Participants

Participants were 10 female volunteers from the community who responded to advertisements on the radio and in the public newspaper. Over the course of 2 months, approximately 46 people contacted the investigator about the study and participated in a brief phone screen. Of these, 15

met criteria for bulimia nervosa. Three of these were excluded due to prior or current anorexia, one due to the presence of alcohol misuse, and one due to a lack of motivation for self-treatment. The remaining 10 individuals participated in a clinical interview. Using data from the clinical interview (Eating Disorders Examination; EDE) and from a self-report questionnaire (Bulimia nervosa Test-Revised), all participants met full criteria for DSM-IV bulimia nervosa nervosa. An independent assessor reviewed tapes of the interviews and the questionnaire data and confirmed the presence of the eating disorders as outlined above. Participant characteristics are summarized in Table 1.

Table 1

Participant Characteristics

Participant	Age[1]	Age[2]	BMI	Binges/wk	WRAT Score (grade equivalent)
1	26	15	21.1	12	60 (11-Early)
2	24	13	27.3	8	72 (12+)
3	26	16	21.9	18	68 (12+)
4	34	20	21.1	14	77 (12+)
5	48	32	27.3	5	77 (12+)
6	38	33	20.1	4	73 (12+)
7	19	16	22.0	6	71 (12+)
8	26	25	20.3	13	55 (9-Early)
9	22	15	22.4	5	63 (12-Early)
10	31	19	22.1	17	78 (12+)

Note. [1] = Current age [2] = age of onset of binge eating

All participants were Caucasian females and met the inclusion criteria (e.g., a grade equivalent of 9 or more on the reading section of the WRAT-R (Jastak et al., 1984), willingness to wait several weeks to start treatment, body mass index (BMI)(BMI=kg/m^2) in excess of 18. All participants met clinical criteria on the Bulimia Test- Revised (BULIT-R) and none met any of the pre-determined exclusionary criteria (e.g., suicidality as assessed by clinical interview, prior anorexia

nervosa, DSM-IV Borderline Personality Disorder, concurrent treatment for an eating disorder, chemical dependency). Chemical dependency was defined as average alcohol consumption in excess of 10 drinks per week (J. Walker, personal communication, September, 1995). Appendix A lists further characteristics of participants (See Appendix A).

S1 was a married 26-year-old, who exercised (e.g., jogged 3-4 times per week for 1 hour, occasional weight training) and vomited to control her weight following a binge. S2 was a never-married 24-year-old who engaged in exercise (e.g., jogged 3-4 hours per week) and vomiting for weight control. S3 was a never-married, 26-year-old who indicated using vomiting, laxatives, and exercise (e.g., 4-5 hours of step-aerobics per week) for weight control. S4 was a never-married, 34-year-old who reported vomiting for weight control. S5 was a married, 48-year-old, who used laxatives and exercise for weight control (e.g., one hour of speed-walking per day). S6 was a widowed and re-married, 38-year-old who exercised for weight control (e.g., spent 3-4 hours horse-back riding per day). S7 was a never-married, 19-year-old who vomited and exercised to control her weight. S8 was a never-married, 26-year-old, who exercised to cope with weight gain (e.g., 5-7 hours per week in high intensity aerobics). S9 was a never-married, 22-year-old who vomited and used laxatives for weight control. S10 was a never-married, 31-year-old who vomited and exercised to cope with weight gain.

Materials

Table 2 lists the measures used in the study (See Table 2).

Self-Treatment Manual. Fairburn's (1995)(See Table 3) CBT self-guide was the self-instructional manual selected for use in the study. The manual was accurate, anticipated potential problems, and as Table 3 illustrates, was thorough in its scope. A companion manual was created by the primary investigator to accompany the treatment manual. The companion manual provided directions regarding the pages of the manual to be covered on a week-by-week basis and included

Table 2

Study Measures

Measure		
Primary Eating Disorder Outcome	Secondary Outcome	Mediators
Binge eating/purging frequency (Self-Monitoring Forms)	Revised Restraint Scale	Author-Devised Compensatory Skills Questionnaire (ACQ)
Bulimia nervosa Test-Revised (BULIT-R)	Coping Strategy Indicator (CSI)	Modified Distressing Thoughts Questionnaire (MDTQ)
	State Self-Esteem Scale (SSES)	
	Beck Depression Inventory (BDI)	
	Body Image Assessment Procedure (BIA)	
	Multi-Dimensional Body Self Relations Questionnaire (MBSRQ)	
	Eating Self-Efficacy Scale (ESE)	

copies of all questionnaires and mail-ins which were used in the study.

Eating Disorder Examination (EDE). The Eating Disorder Examination (Cooper & Fairburn, 1993)(Appendix B) was used to diagnose bulimia nervosa. The EDE is a standardized clinical interview for the measurement of specific psychopathology of eating disorders over the prior four week period. Inter-rater reliability (r = .95-.99), internal consistency, and convergent and discriminant validity of the EDE have been reported (Beglin, 1990; Fairburn & Cooper, 1993; Wilson & Smith, 1989).

Self-Monitoring Forms/Summary Sheets. The Self-Monitoring Forms/Summary Sheets (Appendix C) were used to collect information on a daily basis regarding the frequency of binge eating and purging per day, precipitating situations, stage in program, and weight during week. During the intake interview and in the self-treatment manual, participants were familiarized with the definition of a binge (i.e., consumption of an excessive amount of food given the situation

Table 3

Components of Fairburn's (1995) Self-Treatment Manual

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1. Psycho-education-

a) Definitions of Binge eating, Eating Disorders, and Obesity

b) Etiology of different eating disorders

c) Physical, psychological, and social aspects of eating disorders

d) Effects of weight-control strategies

e) Comparison of Treatments for binge eating

2. Self-monitoring

a) Instructions on self-monitoring

3. Establishing regular eating

a) Rationale and encouragement regarding pre-planning of meals

b) Advice regarding shopping for food, places to eat, and other instrumental tips

4. Alternatives to binge eating

a) Encouragement to develop list of alternatives to binge eating (e.g., distraction, competing responses)

5. Problem-Solving-training

a) Instruction on problem-solving the urge to binge

6. Dieting and Food Avoidance

a) Education regarding different types of dieting and their consequences

b) Advice on strategies to overcome dieting

7. Relapse Prevention

a) Education regarding definitions of "lapses" and "relapses"

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accompanied by feelings of loss of control) and of a purge. The investigator used examples from

the participants' personal experiences during the intake to further clarify these definitions. For the purposes of coding, a gap of greater than one hour between binge episodes, not due to the force of circumstances, constituted the end of one binge and the beginning of another (Wilson, 1995). Evidence of the validity and test re-test reliability (.74-.82) of self-monitoring has been documented (i.e., individuals report similar frequencies of binge eating from week to week)(Loeb, Pike, Walsh, & Wilson, 1994; Williamson, Davis, Duchmann, McKenzie, & Watkins, 1990; Williamson, Goreczny, & Duchmann, 1987)(See Appendix A-I for further discussion about self-monitoring).

The Bulimia nervosa-Test Revised (BULIT-R). The BULIT-R (Thelen et al., 1991)(Appendix D) measured behaviors and attitudes associated with bulimia nervosa and was used to confirm the diagnosis derived from the interview. BULIT-R scores range from 28 to 140, with those in excess of 98 suggesting the presence of bulimia nervosa (Welch, Thompson, & Hall, 1993). Evidence supporting the divergent and 2-month test re-test reliability (.95) of the BULIT-R has been reported (Thelen et al., 1991).

Coping Strategy Indicator (CSI). The Coping Strategy Indicator (CSI)(Amirkhan, 1990)(Appendix E) measured use of three coping strategies (i.e., problem-solving, avoidance, and social support), supported by factor analysis. Scores range from 11 to 33, with higher scores indicating more frequent use of a particular coping strategy. Convergent validity, discriminant validity, internal consistency (.84-.93), and 2 month test re-test reliability (.81-.82) of the CSI have been reported by the author.

Revised Restraint Scale. The Revised Restraint Scale (Herman et al., 1978)(See Appendix F) measured the extent to which participants (a) displayed overconcern with their weight, and (b) chronically dieted to control their weight (Heatherton, Herman, Polivy, King, & McGree, 1988). Scores range from 10 to 50, with higher scores indicating more dietary restraint. Internal consistency (.78-.86), test re-test reliability (.95), and construct validity of the Revised Restraint Scale have been reported (Allison, Kalinsky, & Gorma, 1992; Laeslle et al., 1989; Laessle,

Tuschl, Kotthaus, & Pirke, 1989; Ruderman, 1983).

The Eating Self-Efficacy Scale (ESE). The ESE (Glynn & Ruderman, 1986)(Appendix G) measured perceptions of difficulty controlling eating in a variety of situations. Scores range from 25 to 150, with higher scores indicating *less* eating self-efficacy and more difficulty controlling eating. Acceptable internal consistency (.85-.94) and 7-week test re-test reliability (.70) have been found by the authors.

Author-Devised Compensatory Skills Questionnaire (ACQ). The ACQ measured compensatory skills (Appendix H) and was modelled after the Ways of Responding Questionnaire (WOR)(Barber & DeRubeis, 1992). The ACQ inquired into participants' appraisals and problem-solving strategies for a recent experience with binge eating. Scores reflected levels of cognitive and behavioral compensatory skills (WOR_{total}). Scores for WORtotal range from 1 to 20, with higher scores indicating a greater use of compensatory skills. Concurrent validity, test re-test reliability, and inter-rater agreement of the ACQ were examined in the current investigation. See Appendix X for a discussion of ACQ scoring and psychometric properties.

Modified Distressing Thoughts Questionnaire (MDTQ). The weight-related sub-scale of the MDTQ (Clark et al., 1989)(Appendix I) measured the frequency, emotional intensity, controllability, guilt, and belief concerning thoughts characteristically held by those with eating disorders. Scores range from 1 to 54, with higher scores reflecting more pathological responding. Divergent validity, internal consistency (.98), and 3-month test re-test reliability (.78) of the MDTQ have been documented (Clark et al., 1989).

State Self-Esteem Scale (SSES). The SSES (Heatherton & Polivy, 1991)(Appendix J) measured a multi-dimensional conception of self-esteem (i.e., performance, social, appearance) supported by factor analysis by the authors. The range of scores is as follows: Performance (7 to 35), Social (7 to 35), and Appearance (6 to 30), with higher scores indicating enhanced self-esteem. Excellent internal consistency (.92), inter-item correlation (>.80), and 2-week test re-test reliability (.70-.75) have been reported using both university and clinical samples (Heatherton &

Polivy, 1991). Construct validity of the measure is supported by significant correlations with standardized self-esteem indices, as well as with measures of depression and dietary restraint (Heatherton & Polivy, 1991).

Beck Depression Inventory (BDI). The BDI (Beck et al., 1961)(Appendix K) assessed behavioral, cognitive, and affective symptomatology associated with clinical depression. Scores range from 0 to 63 with higher scores reflecting more negative affect. Convergent and construct validity of the BDI is supported by correlations both with clinician ratings (.64-.75) and with other standardized measures of depression (.66-.75)(Faravelli, Albanesi, & Poli, 1986). Test re-test (.65-.82) and split-half (.93) reliability of the BDI are adequate (Beck, 1976; Beck, Sker, & Garbin, 1990).

Body-Image Assessment Procedure. The Body-Image Assessment procedure (BIA)(Williamson et al., 1985)(Appendix L) measured perceptions of current and ideal body size. When provided with 9 silhouettes of female figures (on separate cards) ranging from thin (1) to obese (9), participants were asked to choose the card which most accurately depicted what they *felt thought* was their current and ideal body size. Based on these responses, a discrepancy score was calculated (real-ideal), ranging from 0 to 8, with higher scores indicating more dissatisfaction with current body size. Evidence for the concurrent validity of the BIA is found in studies showing associations between scores on standardized eating disorder instruments and elevated estimates of current body size (Keeton, Cash, & Brown, 1990). Discriminant validity and test re-test reliability (current r = .83; ideal r = .74; discrepancy r = .80) for the BIA have been reported (Williamson, Davis, Bennett, Goreczny, & Gleaves, 1989).

Multi-Dimensional Body Self Relations Questionnaire (MBSRQ). The MBSRQ (Cash, 1988)(Appendix M) measured satisfaction associated with one's appearance (Appearance Evaluation Sub-Scale), and the degree of importance and attention paid to that appearance (Appearance Orientation Sub-Scale). Scores range from 1 to 35, with higher scores reflecting more satisfaction with appearance and more time expended on appearance. Internal consistency

(.85-.88) and one month test re-test reliability (.90-.91) of sub-scales have been reported (Cash, Winstead, & Janda, 1986).

Weekly Time Log. The weekly time log (See Appendix N) provided an estimate of time (hours, minutes) spent on the workbook and workbook exercises. There is no current reliability or validity (other than face) available for this measure.

Client Satisfaction Questionnaire (CSQ). The CSQ (Larsen, 1977)(Appendix O) measured extent of satisfaction with treatment. Scores range from 8 to 32, with higher scores indicating more satisfaction with treatment. Construct validity (Derogatis, Lipman, & Covi, 1973; Larsen, Attkisson, Hargreaves, & Nguyen, 1979) and internal reliability (.87-.93) of the CSQ-8 have been reported (Attkisson & Zwick, 1982; Larsen, 1979).

Post-Experimental Questionnaire (PEQ). The experimenter-designed PEQ (Appendix P) functioned as an independent qualitative check on the internal validity of the research project. The questionnaire contained items inquiring into participants' perceptions of treatment efficacy (i.e., overall, by treatment component), degree of compliance with the manual, and queries about additional help received during the treatment program. The PEQ provided some measure of the extent of "therapeutic" contacts during the course of the study.

Procedure

Upon contacting the principal investigator by telephone, participants were screened for suitability using a standardized interview check-list format (See Appendix Q) and were informed as to the nature of the research study (See Appendix R). A 2-hour taped, clinical interview ensued (EDE)(See Appendix B). At this time, participants completed the WRAT-R (Appendix S) and the BULIT-R, and height and weight measurements were taken. Other self-report measures were collected, but were secondary outcome/descriptive measures (SSES, CSI, Restraint Scale, SSES, BDI, BIA, MBSRQ, ESE). Finally, a consent form was administered (Appendix T).

Once the study was underway, all participants began the baseline phase of the project. This consisted of *daily* monitoring of binge eating and weight control strategies using the self-

monitoring forms provided, as well as *weekly* monitoring of self-esteem (SSES), compensatory skills used to cope with binge eating (ACQ), and time spent on the study (Time Log). The length of the baseline phase varied for each participant and was based on the relative stability of the data (i.e., binge/purge frequency). The treatment phase was staggered in a piggy-back fashion, and treatment was initiated to each participant provided the following conditions were met: a) there was a minimum of 3 data points during the baseline phase, b) subject data was relatively non-variable or had a rising trend prior to intervention, and c) preceding participants (those who had begun the treatment phase) showed evidence of a treatment effect (i.e., drop in level).

Compliance Intervention. To enhance compliance, participants were (a) given training in self-monitoring, (b) agreed in writing as well as orally to self-monitor binge eating and purging, and (c) made a 100% refundable monetary deposit of $60.00 to ensure their completion of the program. Once the study was underway, participants were intermittently reinforced with praise for self-monitoring.

Assessment. To assess whether participants read and understood the manual, weekly review questions (based on the material in the manual) were administered to participants and mailed back to the investigator each week. To assess the reliability of reporting (of binge eating/purging), a mini post-experimental questionnaire was administered to participants at the completion of baseline. This questionnaire assessed whether participants' perceptions of a binge/purge changed over time and whether regular self-monitoring had occurred. During the study, all telephone contacts with participants were diaried. At the end of the treatment phase (15 weeks), and at 6-month and 1-year follow-ups, participants returned to the Psychological Service Centre to re-do the procedure, (i.e., participate in a clinical interview (EDE), complete the questionnaire package, complete the CSQ-8 (Appendix O), and have their weight and height measurements taken. At the end of the 1-year follow-up, participants were given a debriefing form (Appendix U) and a subject feedback form (Appendix V).

Results

Results were examined using visual inspection methodology and statistical analysis. Changes in the mean, level (i.e., discontinuity of performance from end of the baseline phase to the beginning of the treatment phase), trend (i.e., slope), and latency (i.e., time period between the onset of treatment and change in binge/purge frequency) of the data were observed using visual analysis, and changes in the level and trend of the data were evaluated using an autoregressive time series analysis procedure (i.e., ITSACORR program)(Crosbie, 1993). The ITSACORR program is an interrupted time-series analysis procedure that estimates autocorrelation (i.e., extent to which each score is more similar to its predecessor than to the mean) in time-series data, and then uses a t-test to assess change in the intercept and slope between baseline and treatment phases for each subject. The autoregressive model is considered to be mathematically equivalent to the moving average model, and thus a moving average analysis was not conducted (See Crosbie, 1993 for further discussion).

Drop-Outs

Of the initial ten participants, two (S6, S9) prematurely dropped-out of the project, and two (S5, S8) reduced their binge eating during the baseline phase such that they no longer met criteria for DSM-IV bulimia nervosa (and subsequently removed themselves from the study). S9 discontinued with the research during week 3 of baseline. Her responses on a "Reasons for Discontinuation" form (Appendix Y) revealed that the recent onset of problems with physical health (i.e, nosebleeds), increasing severity of mood problems, and lack of confidence in the treatment approach were primary factors in her decision to discontinue with the project. She subsequently began a pharmacologic treatment under the care of a family physician. Compared to the group mean at pre-treatment, S9 had substantially fewer problem-solving skills (> 2 SD below mean), more dietary restraint (1 SD above mean), less global self-esteem (1 SD below mean),

more attitudes and behaviors typical of people who are depressed (1 SD below mean), and was more dissatisfied with her appearance (1SD below mean).

S6 terminated during week 7 (week 1 of treatment) for reasons which remain unclear. She could not be reached for follow-up nor did she return a "Reasons for Discontinuation" form. At intake, S6 presented as an individual who was highly motivated to achieve; She read the entire manual and completed all of the review questions in the first seven days of treatment. Relative to other participants at pre-treatment, S6 reported more investment in her personal appearance (appearance orientation) (> 1 SD above mean), and endorsed more frequent feelings of guilt regarding her body (1 SD above mean). Notable was that both S9 and S6 declined to put forth a monetary deposit for the study at the outset, perhaps reflecting their lack of commitment to the project.

Two participants (S5, S8) reduced the frequency of their binge eating during the baseline phase of the study (S5, S8). S5 stopped binge eating at week 3 (in baseline phase), although continued to be preoccupied with restraint and with the impulse to binge. She agreed to monitor a new covert behaviour (fear of binge eating), and after a short baseline (5 days), began the manual. She discontinued from the study at this point and could not be reached for follow-up. Relative to other participants at pre-treatment, S5 was older, reported high levels of dietary restraint (2 SD above mean), and had the least difficulty removing anxiety-provoking thoughts regarding her body from her mind (> 1 SD below mean).

S8 ceased binge eating in week 3 (baseline) and reported that recording her intake had helped her to identify the conditions (i.e., feelings, thoughts, situations) during which she was binge eating. She reported that she was able to have better self-control over eating by acting on this awareness. Despite less frequent binge eating, S8 continued to be preoccupied with her weight and with becoming fat. She agreed to begin monitoring two new covert behaviors (fear of fatness,

fear of weight gain) but subsequently discontinued treatment at week 9 of the study, coincident with a move out of the province. Relative to other participants at pre-treatment, S8 used little social support to cope with problems (> 1 SD below mean), had more frequent feelings of control over eating in socially acceptable situations (> 1 SD above mean), was more able to remove guilt-eliciting/worrisome thoughts about her shape from her mind (> 1 SD above mean), and came from the most affluent background (parental income in excess of $50 000/year).

Three out of the four drop-outs were non-purging bulimics whereas the remainder of the sample was made up of purging bulimics. Thus, there was some support for the idea that non-purging compensatory behavior was predictive of attrition in this self-treatment program. Neither self-esteem, binge eating frequency, duration of disorder, or age were associated with premature drop-out.

Treatment Completers

Six participants completed the project in its entirety (i.e., S1, S2, S3, S4, S7, S10). All treatment completers were in the normal weight range and their average duration of binge eating was 10.2 years (SD = 3.76). There was little variability in the grade-equivalent reading level of treatment completers.

Treatment Integrity

Treatment integrity was assessed by evaluating the extent of knowledge regarding information acquired through the manual, observing the amount of time put into the project, and by determining whether other events (i.e., therapy, new supportive relationships, contact with the experimenter) were used during the program which might have lead to a change in one or both of the primary dependent variables (i.e., binge eating/purging frequency). As indicated in Tables 4 and 5, participants demonstrated their knowledge of information found in the manual. Subjects correctly answered more than 90% of the 60 questions presented to them throughout the study.

As Table 4 illustrates, participants spent considerable amounts of time reading the manual and doing manual exercises (Mtime = 30.16 hours, SD = 11.04)[range = 9.07 hours (S7) to 44.50 hours (S2)]. It should be noted that there was substantial variability between participants with regards to time spent on the project. Although reasons for this are unknown, there was a significant and positive correlation between effort expended (i.e., time spent reading the manual and doing homework exercises) and changes in binge eating frequency at a 6-month follow-up r = .80, $p < .05$, but not at post-treatment r = -.25, $p > .05$ or at a one-year follow-up r = .29, $p > .05$. Thus, those who expended more effort had improved functioning at 6-months but this did not continue at one-year. Without exception, subjects spent more time reading the manual than doing the homework assignments and more time was spent on the project at the beginning of the study than at the end.

Table 4

Percentage (%) of Review Questions Answered Correctly

Subject	%
1	100
2	100
3	91.5
4	96.7
7	93.3
10	95

Several subjects received extra support and/or therapy during the study. S2 talked to her mother about her bulimia nervosa 2-3 times (several hours in total) during the project (which was judged as helpful) and S1 talked to her husband on one occasion about her bulimia nervosa (which was judged as helpful). Both of these sources of support were used prior to the study and hence can not be seen as threats to the internal validity of the project. Two subjects received in-person help

from the primary investigator. S7 had a one-hour in-person appointment for extra support at week 4 (treatment phase). Although S7 had in-person contact with the investigator, she engaged in the least amount of help-seeking and so it is unlikely that this contact impacted on the internal validity of the project.

Table 5

Time (hours) Spent by Participants in Study

Subject	Activity			
	Reading Manual	Homework/ Assignments	Telephone Contact with Experimenter	Total Time
1	18.75	12.5	.17	31.42
2	28.75	15.25	.5	44.50
3	17.5	13	.58	31.08
4	19.25	18.75	.3	38.30
7	5.75	2.75	.57	9.07*
10	19.50	6.75	.33	26.58*

Note. * = indicates in-person contact was obtained but is not included in this calculation.

S10 had 11 sessions of individual interpersonally-oriented psychotherapy beginning at week 4 (treatment phase) which continued through to follow-up. Therapy for S10 focused on increasing awareness and expression of affect, decreasing self-criticism, and developing a more internal locus of control orientation. The content of this work centred on relationship issues. Thus, data from S10 reflected the impact of a combined self-treatment and in-person therapy package.

Assessing Definitions of Binge Eating and Purging

The reliability of the defintion of binge eating was assessed by asking subjects, at the end of baseline and at post-treatment, whether their definitions of a binge and of a purge had changed over time. Subjects' definitions of what constituted a binge stayed constant. Prior to study entry,

several participants would have described the consumption of relatively small amounts of food as a binge. Support for the validity of the self-monitoring of binge eating was indicated by a positive correlation between self-monitored binge eating frequency and binge eating frequency via interviewer-directed recall of the EDE $r(6) = .98$, $p = .0001$.

Binge Eating Frequency

The ITSACORR program was implemented to detect statistically significant changes in the level and trend of data (binge eating frequency) between the baseline and treatment phases. Results in Table 6 indicated that there was a significant overall effect of treatment on the level and trend of data points for S10 and a near significant effect for S1 ($p = .12$) and S3 ($p = .13$). Although univariate t-tests were not significant, outcomes were in the expected direction for S1 and S3, and in the opposite direction for S10. Shortly into the treatment phase, S10 began to experience more frequent binge eating (and purging) coincident with an increase in workplace stress. This reversed with the addition of in-office psychotherapy.

Data regarding binge eating is presented in Figures 1and 2. Due to the large number of data points, intra-class averaging over a two-day period was conducted to permit interpretation (See Figure 2). When the last data point in the baseline phase was compared with the first data point in the treatment phase, there was a slight shift in level for S1, S2, S7, and S10 (See Figure 1), and no change in level for S3 or S4 (however all results were obscured by the large amount of variability in the data). Figure 2 illustrates that, with treatment, data from S1, S3, and S10 showed an increase in variability whereas data from S2, S4, and S7 showed a decrease in variability. With the onset of the treatment phase, there appeared to be gradual changes in the trend of the data for S1, S2, S3, S4, and S7 (in the therapeutic direction). The change in trend for S10 was inconsistent, with an initial positive trend followed by a reversing trend (the latter of which was in the therapeutic direction). Table 7 illustrates that all subjects, with the exception of S10,

Figure 1

Effect of Self-Treatment on Daily Binge Eating

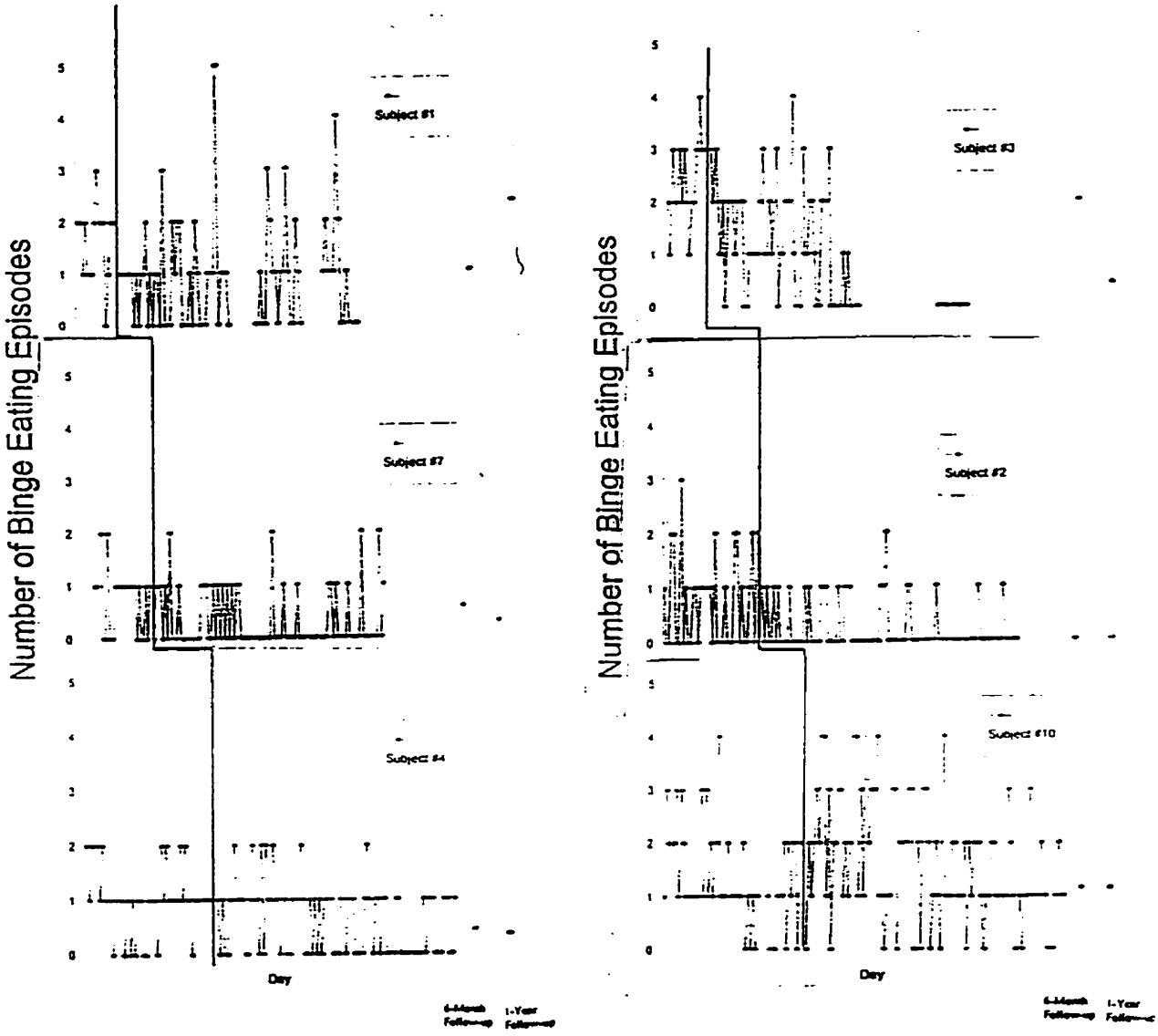
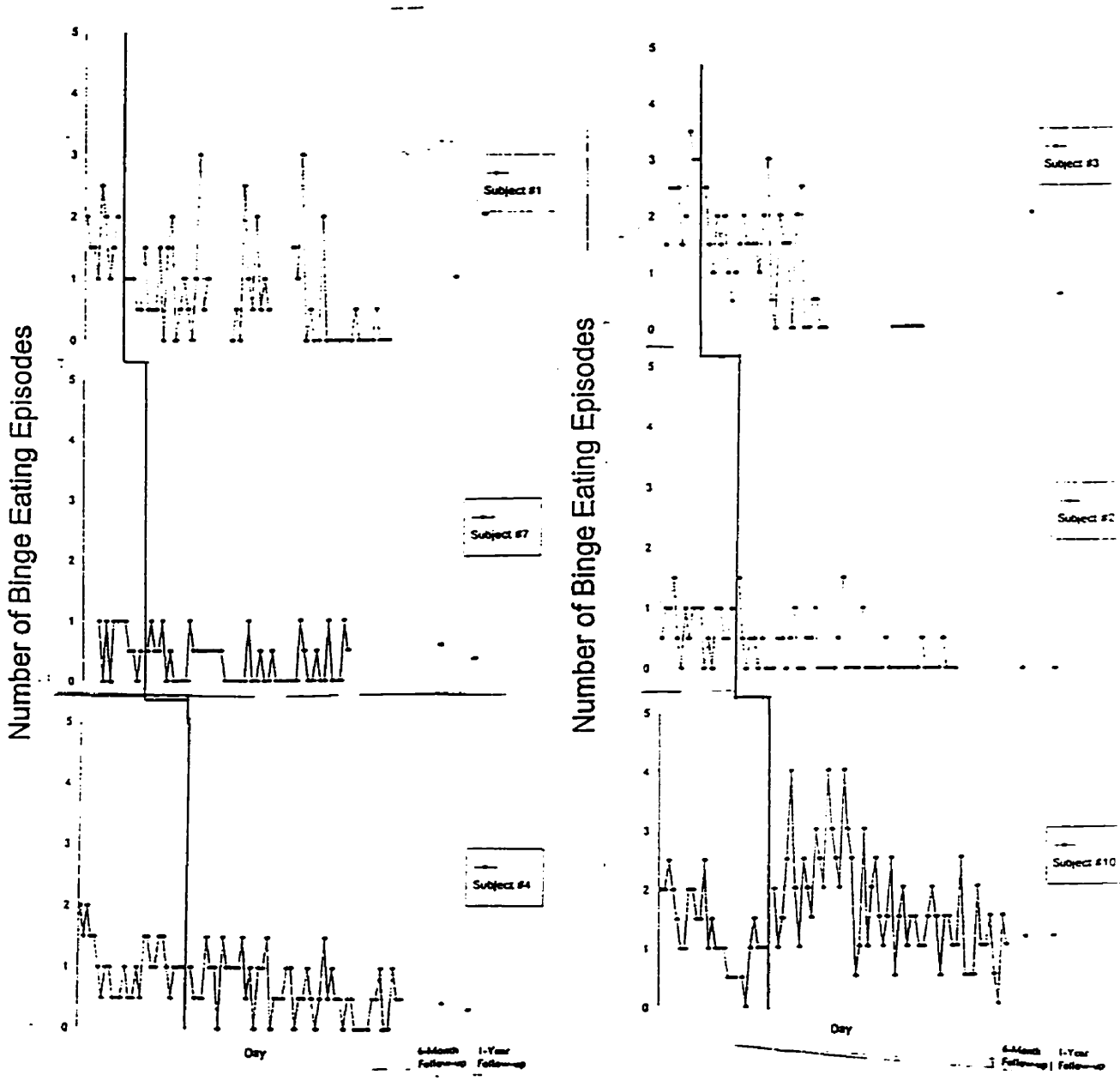


Figure 2

Effect of Self-Treatment on Binge Eating (with intra-class averaging)



experienced a decrease in mean binge eating frequency from baseline to treatment phases. Less able readers had similar outcomes to more able ones.

Table 6

Effect of Treatment on Binge Eating Frequency using ITSACORR

Subject #	Overall Test of Change in Level and Trend	t-test for Level	t-test for Trend
1	$F(2, 91) = 2.15$, $p = .12$	$t(91) = -1.21$, $p = .23$	$t(91) = -.11$, $p = .91$
2	$F(2, 142) = .62$, $p = .54$	$t(142) = -1.59$, $p = .11$	$t(142) = -.15$, $p = .88$
3	$F(2, 88) = 2.08$, $p = .13$	$t(88) = .27$, $p = .79$	$t(88) = -1.82$, $p = .07$
4	$F(2, 157) = .08$, $p = .92$	$t(157) = -1.01$, $p = .32$	$t(157) = -.10$, $p = .92$
7	$F(2, 121) = 1.71$, $p = .19$	$t(121) = -.43$, $p = .67$	$t(121) = -.96$, $p = .34$
10	$F(2, 156) = 8.52$, $p = .0001$	$t(156) = .84$, $p = .40$	$t(156) = .87$, $p = .39$

Table 7

Mean Number of Daily Binges in Baseline and Treatment Phases

	Phase			
Subject #	Baseline		Treatment	
	M	SD	M	SD
1	1.67	.66	.88	.98
2	.73	.83	.23	.46
3	2.44	.76	1.01	1.04
4	1.07	.58	.62	.60
7	.71	.63	.30	.56
10	1.37	.90	1.60	1.17

In sum, although a sudden shift in level with treatment was not replicated across all subjects, decreases in mean frequency, gradual changes in level, as well as gradual changes in trend (in the therapeutic direction) were observed in 5 of the 6 cases (although the large amount of variability both within and between subjects makes interpretation of visual data difficult). Arguing against the conclusion that treatment exerted a controlling effect over binge eating frequency was the tendency of variability to increase and not decrease with treatment for several of the subjects (See Table 7). Based on this evidence, it appeared that there was some support for the proposition that treatment exerted a controlling influence over binge eating.

For ease of comparison with other studies (Agras et al., 1994; Agras et al., 1989; Thackwray et al., 1993), the number of binge eating episodes occurring in the week prior to treatment, the week following treatment onset, the week prior to post-treatment, and the weeks prior to follow-up were evaluated (See Table 8). From the week prior to treatment (Week -1) to the week prior to post-treatment (Week 14).

Table 8

Changes in Weekly Binge Eating Frequency

Subject	Time Period				
	Week prior to Treatment (Week -1)	Week following Treatment (Week 1)	Week prior to Post-Treatment (Week 14)	Week prior to 6-Month Follow-up (Week 38)	Week Prior to 1-Year Follow-up (Week 62)
1	11	6	1	7	16
2	6	3	1	0	0
3	21	13	0	14	3
4	7	4	4	3	2
7	3	4	3	4	2
10	9	10	5	8	8

Table 9

Percentage (%) of Binge-Free Days in Baseline and Treatment Phases

	Phase	
Subject	Baseline	Treatment
1	5.6	40
2	48.6	79.1
3	0	42.7
4	14.3	43.4
7	41.7	74.5
10	14.8	15.9

results indicated that there was a decrease in binge eating frequency for S1, S2, S3, S4, and S10 (average reduction in binge frequency for subjects was 75.8%), but that improvements in binge eating deteriorated for several subjects (i.e., S1, S3, S10) at 6-month and 1-year follow-ups. Although gains made by S10 deteriorated at follow-up, S10 was binge eating only once per week upon terminating from in-office therapy shortly after the 1-year follow-up. At post-treatment, S1, S2, and S3 no longer met DSM-IV criteria for bulimia nervosa. The percentage of binge-free days (# of binge-free days in phase/total # of days in phase) experienced prior to and after treatment is presented in Table 9. Results showed that all subjects (with the exception of S10) had more binge-free days in the treatment phase than in the baseline phase. Thus, compared to the baseline phase, results indicated that 5 of 6 subjects experienced fewer binge eating episodes and more binge-free days in the treatment phase.

Although not statistically significant, findings from visual analysis provided some support for the conclusion that treatment impacted on binge eating frequency (although high levels of variability made interpretation difficult). Although gains in binge eating may appear to be small,

these findings would, for a therapist, represent clinically meaningful changes. From baseline to treatment phases, changes in the number of binge-free days and changes in binge eating frequency from early to late stages of treatment, provided evidence of a treatment effect (initially) for all subjects excluding S10. Finally, the finding that 3 of the 6 participants no longer met DSM-IV criteria for bulimia nervosa (i.e., were binge eating too infrequently)at post-treatment supported the conclusion that treatment lead to the reduction of binge eating frequency.

Purging Frequency

The ITSACORR program was used to examine the effect of treatment on purging frequency. Results in Table 10 showed that there was a significant omnibus effect for S10. however univariate tests of the level and trend of data points failed to achieve significance. Although not significant. S10 tended to purge more frequently in the treatment phase. S10 began to more frequently purge with the onset of treatment. but this gradually reversed when the in-office therapy component was added.

Due to the large number and variability of data points, data on purging behavior was collapsed and averaged over two-day periods (See Figures 3 and 4). Results in Figure 3 showed that there was a decrease in level for S2. S3, S7, and S10 with treatment, and no change in level for S1 and S4 (although again large amounts of variability obscured these differences). Figure 4 shows that. with the onset of the treatment phase, there appeared to be slight changes in the trend of the data for S2, S3, S4, and S7, inconsistent changes for S10, and no change for S1, although high levels of variability in the data obscured these differences). With treatment, results indicated that the variability of purging decreased for S2, S4, S7, and S10 but increased for S1 and S3. Table 11 presents the average number of purges per subject per phase. Results showed that the mean frequency of purging decreased with treatment for S1, S2, S3, S4, and S7, and increased with treatment for S10. Again, the purging behavior of S10 briefly increased with treatment, but then

Figure 3

Effect of Self-Treatment on Daily Purging

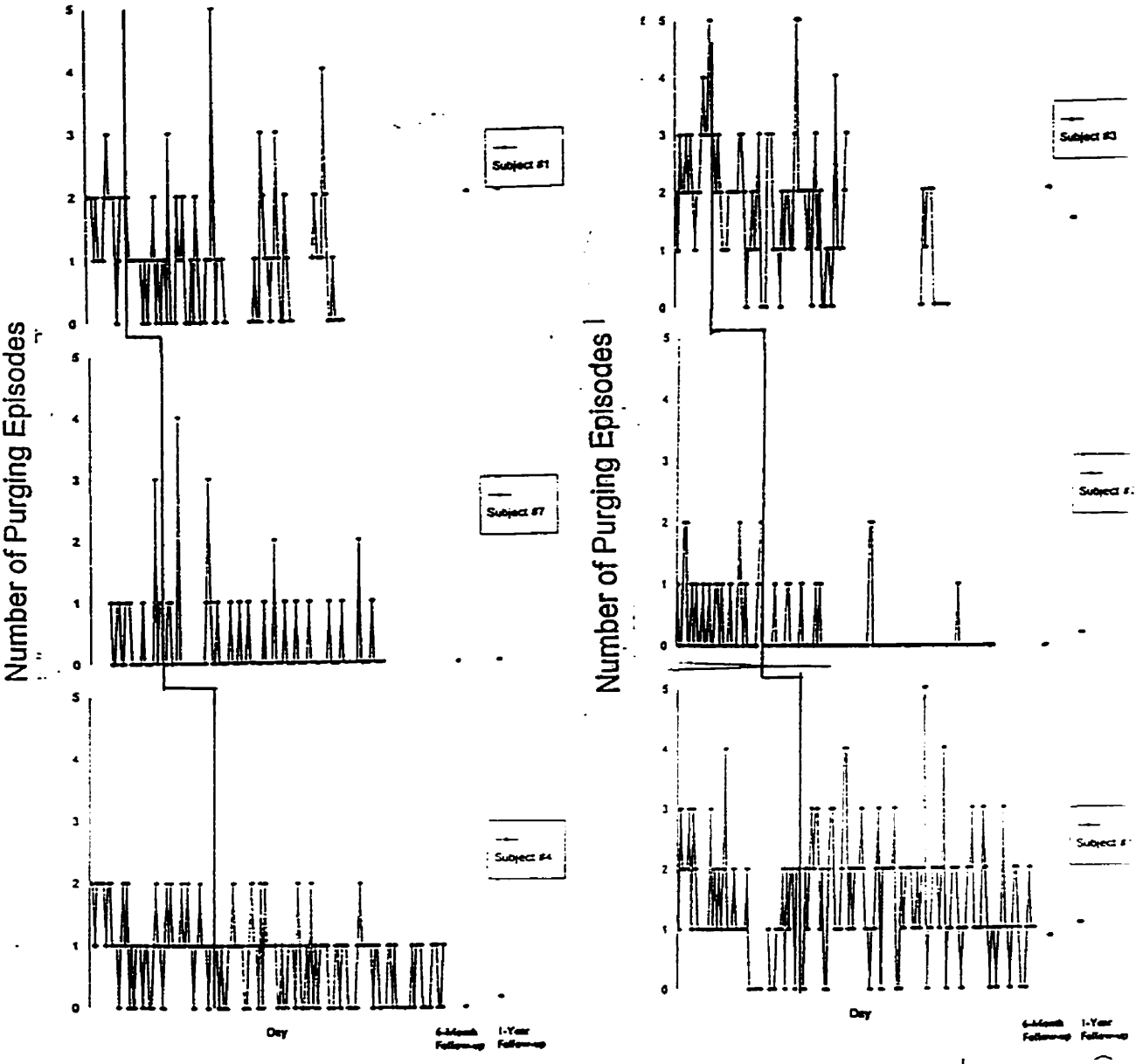


Figure 4

Effect of Self-Treatment on Purging (with intra-class averaging)

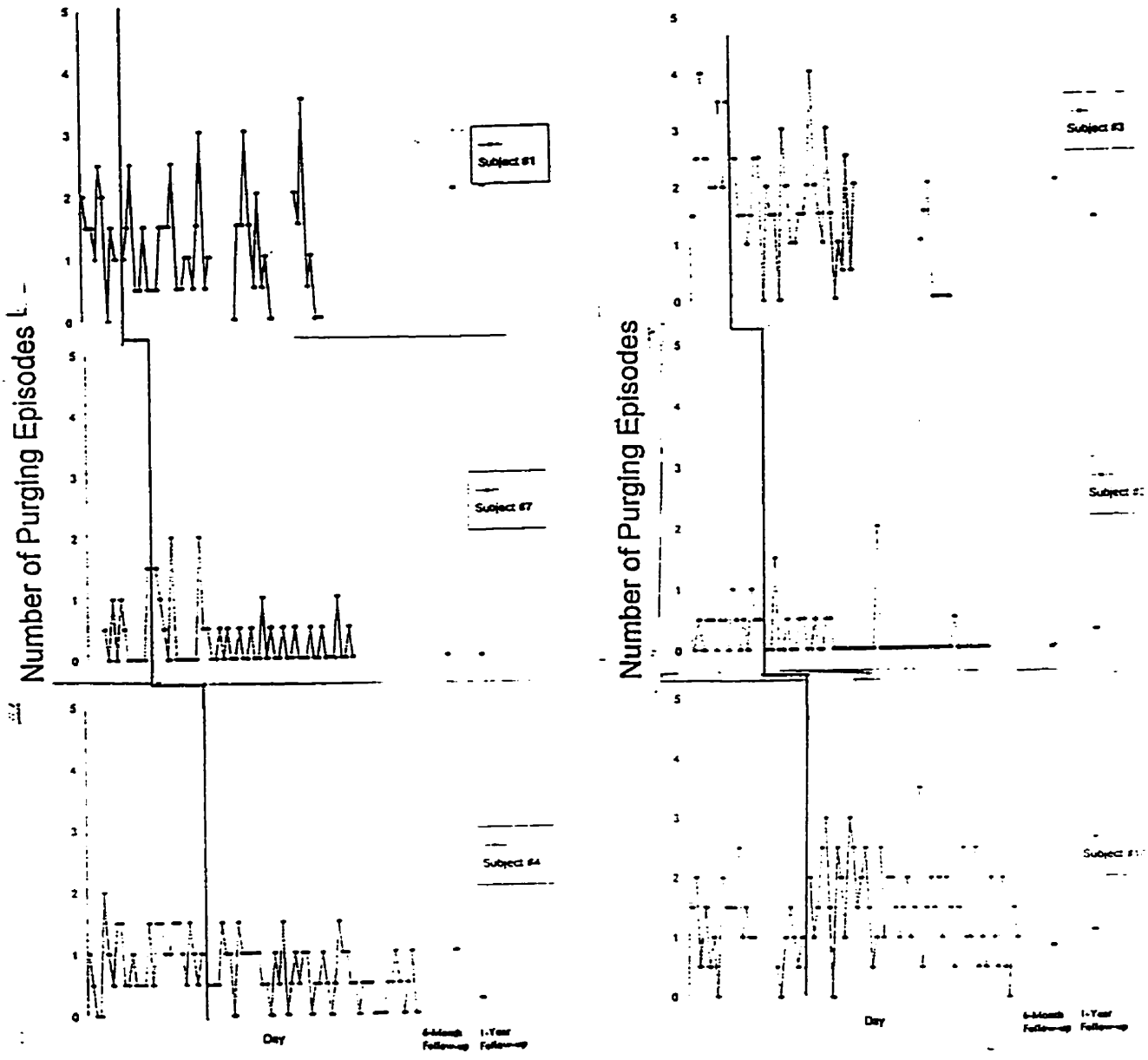


Table 10

Effect of Treatment on Purging Frequency using ITSACORR

Subject #	Overall Test of Change in Level and Trend	t-test for Level	t-test for Trend
1	$F(2, 91) = .85$, $p = .43$	$t(91) = -.72$, $p = .47$	$t(91) = -.10$, $p = .92$
2	$F(2, 142) = .37$, $p = .69$	$t(142) = -1.51$, $p = .13$	$t(142) = .71$, $p = .84$
3	$F(2, 88) = 1.95$, $p = .15$	$t(88) = .41$, $p = .68$	$t(88) = -1.64$, $p = .11$
4	$F(2, 157) = .24$, $p = .79$	$t(157) = -2.07$, $p = .04$	$t(157) = .68$, $p = .50$
7	$F(2, 121) = .26$, $p = .77$	$t(121) = .36$, $p = .72$	$t(121) = -.72$, $p = .48$
10	$F(2, 156) = 5.55$, $p = .005$	$t(156) = -.05$, $p = .96$	$t(156) = 1.52$, $p = .13$

decreased with the addition of in-office psychotherapy. In sum, results from visual inspection indicated that there was a gradual decrease in mean purging frequency and a slight change in trend (in the therapeutic direction) for 4 of the 6 participants (although high levels of variability were present). These findings provide some support for the idea that treatment exerted a controlling influence over purging frequency. Arguing against this conclusion were findings that the variability of purging increased with treatment for 2 of 6 participants (See Table 11).

For ease of comparison with other studies (Agras et al., 1994; Thackwray et al., 1993), Table 12 lists the number of purging episodes occurring in the week prior to treatment, the week prior to post-treatment, and the weeks prior to follow-up. From pre- to post-treatment, results showed that the frequency of purging declined for all subjects (particularly for S1, S3, and S10)(the average reduction in purging frequency was 77.6%), but that this effect disintegrated at 6-month and 1-year follow-ups for S1, S4, and S10.

Table 11

Mean Number of Daily Purges in Baseline and Treatment Phases

Subject #	Phase			
	Baseline		Treatment	
	M	SD	M	SD
1	1.67	.67	1.17	1.08
2	.46	.70	.13	.35
3	2.56	.96	1.47	1.16
4	1.14	.66	.62	.60
7	.46	.71	.25	.64
10	1.26	.93	1.50	.86

Weight Change and Self-Treatment

Subjects had a modest amount of weight change with self-treatment. From pre- to post-treatment, some participants experienced weight loss and some experienced weight gain. For example, weight gain was reported by S3 (10 lbs) and by S4 (4 lbs). Weight loss was reported by S1 (1 lb), S2 (8 lbs), S7 (10 lbs), and S10 (7 lbs). For some, weight change was explained by reductions in binge eating and purging frequencies, in the amount consumed outside of a binge, and in the amount of exercising behavior. For example, from pre- to post-treatment, S7 purged less often (with no change in binge eating), but reported weight loss. From pre- to post-treatment, S7 ate less between binges and exercised more frequently. These factors help to explain her weight loss, although it was clear that predicting who would experience weight change was extraordinarily complex due to the interaction between physiology, caloric intake, and exercise frequency/intensity.

Table 12

Effect of Treatment on Weekly Purge Frequency

Subject	Time Period				
	Week prior to Treatment (Week -1)	Week following Treatment (Week 1)	Week prior to Post-Treatment (Week 14)	Week prior to 6-Month Follow-up (Week 38)	Week Prior to 1-Year Follow-Up (Week 62)
1	11	11	3	14	16
2	2	1	0	0	2
3	23	13	0	14	10
4	7	4	4	7	2
7	4	2	1	0	0
10	11	13	5	6	8

Compensatory Skills

Pending evaluation of the psychometric properties of the ACQ (See Appendix X), the relationship between compensatory skills and binge eating/purging frequency was examined. Two types of negative thoughts were reported most frequently on the ACQ. The first type of content referred to self-destructive behavior that would result in regret (e.g., "I'll just binge") and the second type of content pertained to the expression of negative emotions and thinking (i.e., "This is not going to work", "I am very sad"). The most frequent positive thought reported in the study was that of a specific plan to cope with binge eating (e.g., "Next time, I'll try to distract myself when I am feeling sad"). Participants who responded more rapidly than others (e.g., S1, S2, S3), were more likely to report a hopeful attitude towards their situation at some time during the project, and to do so around the beginning to middle of treatment. These same participants were less likely to focus blame on themselves and were less likely to give themselves moral

Table 13

Effect of Self-Treatment on WORtotal Scores

Subject	WORtotal Score			
	Pre-Treatment	Post-Treatment	6-Month Follow-up	1-Year Follow-up
1	8	11	14	11
2	6	10	12	13
3	9	13	13	10
4	7	10	10	10
7	8	9	9	11
10	10	11	16	14

Note. WORtotal scores range from 1 to 20, with higher scores indicating greater use of compensatory skills.

responsibility for negative events compared to less successful subjects and drop-outs. Results in Table 13 showed that all participants reported more use of compensatory skills from pre- to post-treatment. This continued up to a 6-month follow-up, however, showed signs of deterioration at a 1-year follow-up. Results from weekly ACQ data showed that improvements in reported compensatory skills did not immediately precede changes in the dependent variables, although weekly scores on the ACQ were negatively correlated with binge eating frequency for most subjects (See Table 14). Correlations between number of positive/negative coping strategies from the ACQ and changes in binge eating frequency were computed, but none were significant.

The MDTQ sub-scales were used to further explore the effect of treatment on cognitive compensatory skills, including perceptions of controllability of negative thoughts, ease of removal of negative thoughts, guilt regarding negative thoughts, strength of belief of negative thoughts,

Table 14

Relationship between binge eating frequency and compensatory skills (ACQ)

Participant	r	p
1	.17	.62
2	-.63	.002
3	-.43	.16
4	-.27	.22
7	-.17	.51
10	.09	.71

Note. Values reflect Pearson correlations computed using cumulative binge eating frequency (per week) and weekly ACQ scores.

and sadness and worry associated with negative thoughts (See Table 15). From pre- to post-treatment, results in Table 15 showed that two subjects reported a decrease (i.e., S2, S3), and that four subjects indicated little to no change (i.e., S1, S4, S7, S10) in the extent to which they found themselves thinking about their weight, shape, and eating habits. The emotions associated with these thoughts differed between subjects, with 2 of 6 participants (S2, S3) feeling less sad, worried, and guilty when they thought about their weight, shape, and eating, and 2 of 6 participants (S4, S10) reporting increasing amounts of sadness, worry, and guilt when thinking about their bodies. Another subject (S1) reported increasing amounts of sadness and worry (but not guilt) in this context. From pre- to post-treatment, both S1 and S4 reported more difficulty trying to remove thoughts about weight and shape from their minds, whereas S2, S3, and S7, and S10 indicated that removal was easier. In summary, from pre- to post-treatment, S2 and S3 showed improvements in cognitive compensatory skills, S1, S4, and S10 showed a deterioration (i.e., cognitions pertaining to weight/shape, and eating became more frequent and/or intense), and

S7 reported little change. From post-treatment to a 1-year follow-up, S2, S4, and S10 showed improvements in most cognitive compensatory skills.

Self-Esteem: Performance, Social, and Appearance

In addition to compensatory skills, self-esteem was monitored on a weekly basis throughout the study. Table 16 shows participant's performance, appearance, and social self-esteem at different time intervals. As a group and relative to SSES scale norms, results showed that pre-treatment global self-esteem scores were low (M = 49.3, SD = 9.38), and improved at post-treatment (M = 62.83, SD = 9.85), but returned to baseline at 6-month follow-up (M = 53.50, SD = 14.88). Self-esteem improved at a 1-year follow-up (M = 60.83, SD = 9.26) where several participants reported the highest personal levels of self-esteem. Throughout assessment periods, participants reported more performance self-esteem, than social, or appearance (in that order). Surprisingly, treatment did not result in the elevation of performance and appearance self-esteem as expected (and some subjects experienced a temporary downward shift in performance self-esteem with the onset of treatment). Figure 5 presents the relationship between binge eating frequency and global self-esteem. Results showed that global self-esteem did not mirror binge eating frequency as expected, however, self-esteem was negatively correlated with binge eating frequency for most subjects (See Table 17). On average, increases in self-esteem were associated with decreases in binge eating frequency.

Table 15

Modified Distressing Thoughts Questionnaire (weight sub-scale): Pre-Treatment, Post-Treatment, and Follow-up Data

Subject	Variable		Time Period			
			Pre-Treatment	Post-Treatment	6-Month Follow-up	1-Year Follow-Up
1	MDTQ	(frequency)	42	46	46	47
		(sad)	46	51	49	49
		(worry)	46	50	47	48
		(removal)	41	46	40	45
		(guilt)	43	42	36	46
		(belief)	42	42	39	46
2	MDTQ	(frequency)	48	33	39	26
		(sad)	53	34	39	27
		(worry)	51	34	42	29
		(removal)	45	20	33	21
		(guilt)	49	31	34	21
		(belief)	54	25	41	27
3	MDTQ	(frequency)	44	27	51	48
		(sad)	52	32	52	48
		(worry)	47	29	52	49
		(removal)	52	28	52	47
		(guilt)	52	32	49	50
		(belief)	53	27	50	47
4	MDTQ	(frequency)	40	39	33	30
		(sad)	28	34	34	29
		(worry)	26	34	32	25
		(removal)	31	32	30	24

Subject	Variable		Time Period			
			Pre-Treatment	Post-Treatment	6-Month Follow-up	1-Year Follow-up
		(guilt)	22	29	27	26
		(belief)	36	32	30	23
7	MDTQ	(frequency)	49	50	50	54
		(sad)	53	54	53	54
		(worry)	51	52	54	53
		(removal)	49	45	54	51
		(guilt)	47	46	54	52
		(belief)	46	42	47	46
10	MDTQ	(frequency)	41	38	40	35
		(sad)	35	44	40	37
		(worry)	36	42	44	37
		(removal)	33	32	32	27
		(guilt)	44	52	44	38
		(belief)	30	38	33	26

Note. MDTQ sub-scale scores range from 1 to 54, with higher scores indicating more sadness, worry, guilt, difficulty with removal, and strength of belief.

Table 16

Pre-Treatment, Post-Treatment, and Follow-up State Self-Esteem Scale Scores (SSES)

Subject	Variable	Time Period			
		Pre-Treatment	Post-Treatment	6-Month Follow-up	1-Year Follow-up
1	performance	32	31	32	27
	social	16	21	18	17
	appearance	20	21	22	18
2	performance	23	31	24	31
	social	14	27	14	27
	appearance	11	15	10	19
3	performance	17	17	12	16
	social	13	17	10	16
	appearance	18	21	6	21
4	performance	24	24	26	28
	social	17	16	17	19
	appearance	9	9	10	16
7	performance	20	30	29	30
	social	10	18	14	17
	appearance	10	19	17	12
10	performance	19	22	23	20
	social	10	18	20	14
	appearance	13	17	17	17

Note. Scores range from 7 to 35 (Performance, Social) and from 6 to 30 (Appearance), with higher scores indicating greater self-esteem.

Figure 5

Relationship between Binge Frequency and Global Self-Esteem

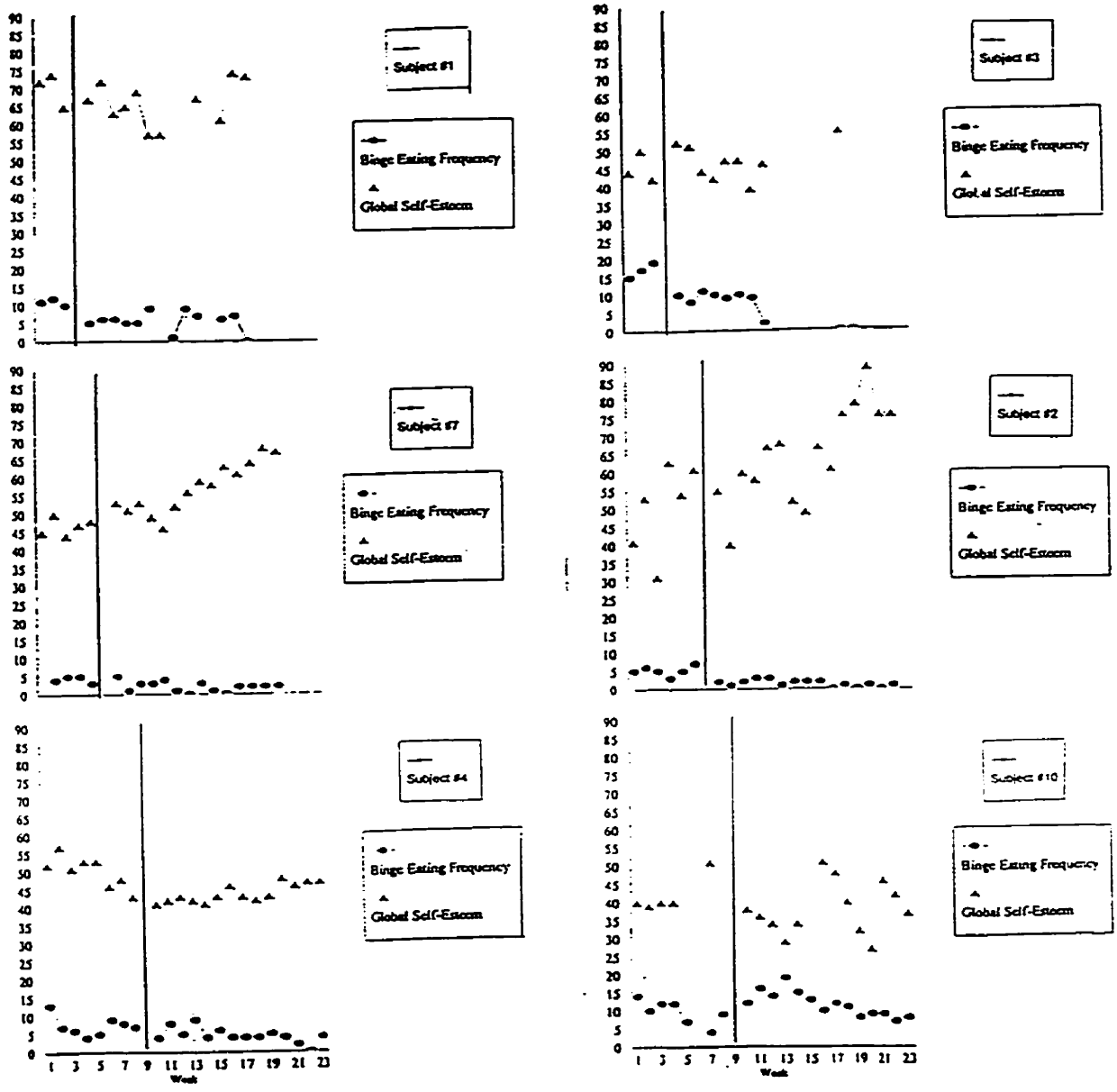


Table 17

Relationship between binge eating frequency and global self-esteem

Participant	r	p
1	-.03	.91
2	-.53	.01
3	-.55	.05
4	.13	.57
7	-.57	.01
10	-.45	.06

Note. Values reflect Pearson correlations conducted using cumulative binge eating frequency (per week) and weekly full scale State Self-Esteem Scale scores.

Bulimic Attitudes, Dietary Restraint, Eating Self-Efficacy, Mood, and Body Image

As Table 18 shows, the frequency of bulimic attitudes and behaviors declined from pre- to post-treatment, and was variable at a 6-month follow-up. For example, two participants reported more frequent bulimic attitudes and behaviors (i.e., S1, S3) at a 6-month follow-up. From pre- to post-treatment, concern with dieting and weight fluctuation (as measured by the Revised Restraint Scale) decreased for 2 out of 6 participants (i.e,. S2, S3) but showed little change for the remainder. On average, results of this study showed that treatment positively impacted on participants' confidence to manage eating in a variety of situations (Mpre = 132.0, SD = 38.00, Mpost = 115.5, SD =24.42, Mfollow-up = 118.67, SD = 37.98), but that this was short-lived for some subjects (i.e., S1, S2, S3). Although S1, S2, and S3 experienced an increase in eating self-efficacy, a different picture emerged at follow-up (with S4, S7, and S10) reporting improvements in self-efficacy, and S1, S2, and S3 reporting a deterioration in self-efficacy).

Table 18

Bulimic Attitudes, Dietary Restraint, Mood, and Eating Self-Efficacy at Pre-Treatment, Post-Treatment, and Follow-up

Subject	Variable	Time Period			
		Pre-Treatment	Post-Treatment	6-Month Follow-up	1-Year Follow-up
1	BULIT-R	110	102	119	120
	Restraint	32	31	33	35
	BDI	4	3	7	12
	Self-Efficacy	118	100	112	117
2	BULIT-R	128	74	76	48
	Restraint	37	27	31	27
	BDI	13	2	18	3
	Self-Efficacy	131	90	103	54
3	BULIT-R	120	65	135	126
	Restraint	29	21	27	30
	BDI	30	9	49	14
	Self-Efficacy	160	107	175	155
4	BULIT-R	102	96	93	86
	Restraint	27	26	29	22
	BDI	13	18	16	9
	Self-Efficacy	98	107	61	66
7	BULIT-R	117	105	112	108
	Restraint	33	35	36	34
	BDI	28	31	28	12
	Self-Efficacy	153	156	139	161
10	BULIT-R	124	115	101	107
	Restraint	30	32	31	32
	BDI	20	19	15	18
	Self-Efficacy	132	133	122	137

Note. Bulimia Test-Revised (BULIT-R) scores range from 28 to 140 with higher scores indicating more bulimic symptomatology.

Restraint scale scores range from 10 to 50, with higher scores indicating more dietary restraint.

Beck Depression Inventory (BDI) scores range from 0 to 63, with higher scores reflecting more negative affect.

Eating Self-Efficacy Scores (ESE) range from 25 to 175, with higher scores indicating less eating self-efficacy.

From pre- to post-treatment, mood improved for 4 out of 6 participants (i.e,. S1, S2, S3), however, the average improvement was small (Mpre = 18.0, SD = 9.9,Mpost = 13.67, SD = 11.13), and mood appeared to worsen at a 6-month follow-up (Mfollow-up = 22.17, SD = 14.78).

Finally, Table 19 presents body image data. From pre- to post-treatment, and using affective instructions (i.e., "What do you feel is your current/ideal shape?"), results showed that self-treatment reduced the discrepancy between real and ideal body image in 4 of 6 subjects (i.e., S1, S2, S4, S10). From pre- to post-treatment, results showed that three participants reported smaller body shapes ("real")(i.e., S1, S4, S10), and three reported larger ideal body shapes ("ideal")(i.e., S2, S3, S10). Using cognitive instructions (i.e., "What do you think is your current/ideal shape?"), results indicated that self-treatment reduced the discrepancy between real and ideal body image in 3 of 6 subjects (i.e., S1, S2, S10). From pre- to post-treatment, three participants reported smaller body shapes (real)(i.e., S1, S2, S10), and two participants reported larger ideal body shapes (ideal)(i.e., S2, S3).

Compared to responses at pre-treatment, results indicated that 5 of 6 subjects (S1-S3, S7, S10) became more satisfied with their appearance at post-treatment and that this continued to improve at a 6-month follow-up. From pre- to post-treatment, results showed that 5 of 6 participants became less invested in their personal appearance (i.e., S1-S3, S7, S10), however, this

Table 19

Changes in Appearance Evaluation, Appearance Orientation, and Satisfaction with Body Image

Subject	Variable		Time Period			
			Pre-Treatment	Post-Treatment	6-Month Follow-up	1-Year Follow-up
1	MBSRQ	(evaluation)	3.1	3.29	3.40	3.38
		(orientation)	5.0	3.92	3.60	3.66
	R-I-D	(cognitive)	2	1	1	1
		(affective)	3	1	1	1
2	MBSRQ	(evaluation)	1.3	1.43	2.85	2.42
		(orientation)	3.5	2.92	4.91	2.16
	R-I-D	(cognitive)	6	2	3	2
		(affective)	6	5	3	1
3	MBSRQ	(evaluation)	3.9	4.29	2.42	4.28
		(orientation)	3.3	3.25	2.91	3.41
	R-I-D	(cognitive)	0	1	n/a	1
		(affective)	0	1	n/a	1
4	MBSRQ	(evaluation)	1.6	1.29	1.28	2.44
		(orientation)	3.2	3.58	3.66	3.58
	R-I-D	(cognitive)	3	4	2	3
		(affective)	7	6	5	3
7	MBSRQ	(evaluation)	2.1	3.43	3.57	3.43
		(orientation)	4.3	3.83	4.75	4.41
	R-I-D	(cognitive)	1	3	1	2
		(affective)	3	3	3	3
10	MBSRQ	(evaluation)	1.6	2.14	2.14	2.0
		(orientation)	2.3	2.0	2.66	2.61
	R-I-D	(cognitive)	4	0	2	2
		(affective)	6	1	1	5

Note. R-I-D = Real minus Ideal Discrepancy in Body Shape Ratings from the Figure Rating Scale; scores range from 0 to 8, with higher scores indicating more body image dissatisfaction. MBSRQ scores range from 1 to 35, with higher scores reflecting more satisfaction with appearance and more time expended on appearance.

was maintained in only two subjects at a 6-month follow-up (i.e., S1, S3).

Social Validation

Social validation is an alternative method of evaluating outcome in applied research and seeks to confirm whether interventions produce clinically significant change. Two aspects of such validation are social comparison and/or third-party observation (Kazdin, 1993). As the secrecy associated with bulimia nervosa precluded gathering information on the latter, social comparison data was obtained by comparing subjects' post-treatment scores on global and specific measures to those of non-bulimic peers (matched as a group on gender, age, and socio-economic status)(See Table 20).

Table 20

Post-Treatment Social Comparison Data

Subject		BULIT-R	Restraint (total)	BDI	CSI-avoidance	CSI-social support	CSI-problem solve
	1	102	31	3	26	18	21
	2	74	27	2	22	25	33
	3	65	21	9	21	23	19
	4	96	26	18	29	32	23
	7	105	35	31	28	30	22
	10	115	32	19	23	22	22
Peer	M	75.00	19.83	12.17	19.33	19.83	26.67
	SD	5.18	5.81	8.21	4.32	7.47	7.55

Note. BULIT-R = Bulimia Test Revised (Thelen et al., 1991); Restraint = Revised Restraint Scale (Herman et al., 1978); BDI = Beck Depression Inventory (Beck et al., 1961); CSI = Coping Strategy Indicator (Amirkhan, 1990).

The comparison sample was composed of 17, never-married (70.6%), middle-class (50%) female undergraduate volunteers in psychology, with a mean age of 20.57 years (SD = 1.65).

At post-treatment, results showed that only two clinical subjects (i.e., S2, S3) appeared similar to a comparison sample in terms of the extent of bulimic attitudes and behaviors (BULIT-R score). At post-treatment and relative to peers, S1, S2, and S3 reported better mood, S2, S3, S4, S7, and S10 showed equivalent or better utilization of social support, and S2 showed equivalent or better use of problem-solving strategies. At post-treatment, and relative to peers, treated subjects reported consistently more dietary restraint and more avoidant coping. Clinical subjects continued to be more concerned about dieting and more avoidant in dealing with their problems, and with the exception of one individual, less likely to use active problem-solving to cope with personal difficulties.

Acceptability of Treatment

Table 21 lists subjects' ratings of satisfaction with treatment (CSQ-8) mid-way through the program, at post-treatment, and at follow-up. The average rating of satisfaction with treatment was 24.3 (SD = 4.61). Using a 10-point Likert scale ranging from "1" (not at all understandable/attractive) to "10" (extremely understandable/attractive), participants rated the manual as very clear (M = 9.17, SD = .98) and very attractively packaged (M = 8.00, SD = 1.55). Various manual components were rated on a Likert scale ranging from "1" (not at all helpful in controlling eating) to "10" (extremely helpful in controlling eating). Results showed that, on average, the psycho-education component was viewed as most helpful in leading to enhanced control over eating (M = 8.00, SD = 1.00), followed by meal-scheduling (M = 7.5, SD = 1.64),

the scheduling of alternative activities (M = 7.20, SD = 1.94), information on relapse prevention (M = 7.00, SD = 2.37), tackling avoidance of eating (M = 6.5, SD = 1.87), and help with

Table 21

Client Satisfaction with Treatment Scores (CSQ-8)

Subject	Time Period			
	Mid-Way Through Treatment	Post-Treatment	6-Month Follow-up	1-Year Follow-up
1	18	23	22	23
2	31	32	32	32
3	20	19	21	19
4	24	21	24	24
7	27	29	28	28
10	23	22	25	26

Note. CSQ-8 scores range from 1-32 with higher scores indicating greater satisfaction with services.

problem-solving (M = 5.5, SD = 2.59). Although self-monitoring was not included in this list (as it was conceptualized more as a method of assessment than as an intervention), it would likely have produced the most favorable ratings. Subjects differed on what was perceived as helpful: S1 and S10 found that psycho-education and alternative activity scheduling were the most efficacious; S2 reported that meal-scheduling was the most helpful; S3 noted that relapse prevention information was most useful; and S4 found that psycho-education was the most desirable for increasing feelings of control over eating.

Qualitative Interview Findings

During a post-treatment interview, participants were administered a post-experimental questionnaire designed to assess their perceptions of the manual. Almost all participants acknowledged the difficulty of daily self-monitoring, both in terms of the time required for this

activity and the negative emotional reactions (e.g., sadness, anger, guilt) which recording engendered. Despite the difficulties of this work, many found self-monitoring valuable for recognizing the antecedents and consequents of eating, and in helping them to slow down, generally speaking, so that binge eating was less automatic. Also, many reported feeling buoyed on days when they abstained from binge eating. In the psycho-education section, it was helpful to subjects to learn about the physical sequella of binge eating; Participants were relieved to know that physical problems (i.e., gastro-intestinal complications) were rare, and that they would remit once binge eating ceased. Subjects acknowledged that excerpts from other people's experiences decreased their sense of loneliness and abnormality, and increased their sense of hopefulness regarding the future. For one participant (S3), her decision to enact change in her life regarding her binge eating was primarily motivated by reading an excerpt in the psycho-education section that dealt with the amount of time spent focusing on food and at what cost (loss of other experiences, living). This was reported by S3 as a kind of existential moment, after which things were not the same. Ironically, many women reported that spending time on the manual allowed them to be less focused on food and on themselves (and more focused on other things in their lives).

Not all of the manual was viewed in such positive terms. Several participants reported that the section on problem-solving was of no use to them, although some subjects noted that this unit increased personal awareness regarding a general pattern of avoidance. Although few subjects found the section on dieting/avoidance of food to be helpful, this seemed to be the unit that posed most difficulty for participants. Some individuals could not recognize personal avoidance. Difficulties recognizing personal avoidance behavior may be one feature of bulimia nervosa that requires in-person consultation and feedback.

When asked about what suggestions participants would give to creators of a manual, several

subjects responded that they would include more discussion of weight and treatment (e.g., how much does weight change with treatment, mechanism of metabolism) and more excerpts detailing the feelings/thoughts of other women as they move through the different cognitive-behavioral changes. Also, several participants suggested eliminating comments which make a normative comparison of progress. One subject (S1) became very angry and wanted to quit the project when the manual reported that "most people have reduced their binge eating by this point in time". One of the most interesting interview findings however, pertained to subjects' evaluations of change during self-treatment. Some perceived that little change had occurred (S1, S4), others perceived major change had happened (S2, S3, S7), and others saw change as "in-progress" (S10). This assessment had little relation to actual symptom change (i.e,. increases/decreases in binge eating/purging frequency).

Cost-Effectiveness of Self-Treatment

The cost-effectiveness of self-treatment was evaluated by examining the direct and indirect costs of self-treatment, including costs associated with personnel, facilities, materials and equipment, and client time. There is mixed opinion regarding whether research costs should be included in cost-effectiveness equations (Frankel, 1991). Advocates of this approach argue that research activities can enhance treatment effectiveness (Yates, 1985) whereas others claim that research does not contribute to the product of patient care (Cannon, 1985). As the majority concur that it is necessary to remove research costs from operating costs for the purposes of interpretation (Levin, 1983), this was the approach taken. Finally, although research on cost-effectiveness has identified the concept of a discount rate to value outcomes which occur beyond the first year of a treatment (based on the principle that future dollars are less valuable than current dollars), Frankel (1991) appropriately argues that there is little conceptual basis for determining the specific rate to be discounted and so for the purposes of this analysis, this term was excluded.

The reader is encouraged to think of costs in the context of inflation; With each subsequent year, costs of labour, facilities, and materials increase. Appendix Z indicates the cost-effectiveness equation employed and Table 21 lists the results. As indicated in Table 22, individual costs of self-treatment ranged from $316.80 (CD) to $849.67 (M = 519.70, SD = 164.7). The values in the last column reflect the cost associated with decreasing binge eating and purging by one episode from pre- to post-treatment. For example, the cost of reducing binge eating and purging by one episode per week for S1 was $343.25. Results showed that self-treatment becomes increasingly less cost-effective with clients who are treatment-resistant and with those who have

Table 22

Cost-effectiveness of Treatment per Subject

Subject	Effectiveness (change in mean Binge/ Purge frequency from pre- to post-treatment)	Costs (CD $)	Cost-Effectiveness (cost/effectiveness)
1	1.29	442.80	343.25
2	.83	558.00	672.3
3	.81	453.20	559.5
4	.97	502.00	517.5
7	.62	316.80	510.97
10	-.47	849.20	1806.81

high needs for support/reassurance and clinician contact.

The costs associated with in-office treatment were compared to those associated with self-treatment. Using the equation in Appendix Z and published values for in-office CBT with this population, the approximate cost of an in-office CBT approach was found to be $1160.50 (CD). Thus, there is an approximate two-fold increase in cost associated with an average in-person CBT treatment package compared to an average CBT self-treatment package (i.e., $519.70).

Discussion

This study represents a fine-grained analysis of the change process in the self-treatment of bulimia nervosa. Results indicated that reliable changes in binge-purge frequency occur slowly, and that there are high levels of day to day variability in binge-purge episodes. Results showed that self-treatment was associated with an increase in the reported use of compensatory skills, however there were individual differences in the type of skills acquired.

Self-Treatment and Compensatory Skills

DeRubeis et al. (1988) argue that CBT exerts its impact on psychological functioning via the acquisition of cognitive and behavioral compensatory skills. Results from the current study support this theory in that post-treatment and 6-month follow-up scores on a measure of compensatory skills (ACQ) exceeded those at pre-treatment, and participants who were most successful in the current study experienced the largest improvement along this dimension. This is corroborated by results from the MDTQ which showed that 2 of the 3 successful responders at post-treatment reported an improvement in the use of cognitive compensatory skills (such as removal of negative thinking, and reduction in degree of belief regarding maladaptive thoughts). The other successful responder appeared to experience more frequent negative thoughts about eating and weight with treatment, but reported a greater use of behavioral compensatory skills. Thus, this study provided some support for the notion that CBT influences individuals by enhancing their use of cognitive and behavioral compensatory skills. However, visual inspection of graphed data did not show evidence of an immediate temporal relationship between ACQ scores and binge eating or purging frequency. The failure to find an immediate temporal relationship between these variables (compensatory skills, binge eating/purging frequency) is perhaps not surprising given the complexity of the dependent variables but these results suggest that merely acquiring better coping skills will not necessarily lead to less binge eating/purging.

What might be other explanations of this event? There are several other possibilities. First, participants may have expected that they should report some of the coping strategies discussed in the manual on the ACQ. Thus the relationship between compensatory skills and binge eating/purging may merely reflect an expectancy effect. Arguing against this explanation, however, are findings which indicate that responses to the ACQ changed gradually for each participant and did not show a large improvement immediately with the onset of treatment. An alternative explanation for the failure to find an immediate temporal relationship between compensatory skills and binge eating frequency is that a third variable is maintaining binge eating/purging and that improved compensatory skills act on this variable (but not directly on binge eating/purging). This mediator variable could be mood, dietary restraint, or eating self-efficacy. Although researchers in the area of mood disorders speculated that a third mediator variable is mood (Oei & Free, 1995), findings from the current study did not show an association between parallel improvements in mood and compensatory skills). Another possibility is that improved compensatory skills leads to decreased dietary restraint, which then reduces binge eating/purging. Again, findings from the current study do not support this hypothesis. A plausible third variable (or mediator) might be eating self-efficacy. Examination of the data revealed an association between change in the primary dependent variable (i.e., binge eating/purging frequency as measured by the self-monitoring forms) and change in eating self-efficacy. From pre- to post-treatment, the three successful responders (i.e., S1, S2, S3) experienced an increase in eating self-efficacy whereas the three non-successful responders experienced a decrease or no change in eating self-efficacy. Thus the hypothetical cycle might be that improved coping around binge eating/purging leads to increased confidence in controlling eating, which subsequently leads to less frequent binge eating and purging.

Unlike mood and dietary restraint, eating self-efficacy has been infrequently studied in the

in-person treatment of bulimia nervosa, and not at all in the self-treatment of bulimia nervosa. In the current study, it was initially conceptualized as a variable which might respond to treatment (distinct from a compensatory skill). Despite an apparent lack of interest in the concept among researchers in this area, one study showed that exposure plus response prevention in the treatment of bulimia nervosa improved confidence in controlling eating among community volunteers with bulimia nervosa (Wilson, Rossiter, Kleifield, & Lindholm, 1986). These authors noted that successful responders (i.e., those who became abstinent), more than less successful responders, had enhanced self-efficacy at post-treatment. Results from this study replicated this finding. Given that symptom change (i.e., binge frequency) and self-efficacy are negatively associated (less frequent binge eating is associated with improved self-efficacy), one might argue that the self-efficacy construct is really just a measure of actual behavior change. Arguing against a more central role for eating self-efficacy are findings that 2 out of the 3 subjects who reported the most confidence in controlling their eating at post-test, had the largest deterioration in binge eating frequency at follow-up.

Another explanation for the failure to find a direct temporal relationship between compensatory skills and binge eating/purging frequency is that the ACQ (and the MDTQ) may not have adequately measured compensatory skills. Recall that although the test re-test reliability of the ACQ was satisfactory, although validity data was weak. Scores on the ACQ were not strongly associated with those from an alternative measure of coping (i.e., the Coping Strategy Indicator). However, the ACQ would seem on the surface to be a better measure of compensatory skills for this investigation as coping on the ACQ was specific to binge eating whereas coping on the CSI was not. Thus, the validity of the ACQ may not have been adequately tested. The failure to find a negative association between one sub-scale of the ACQ (i.e., WORtotal) and a sub-scale of the CSI (i.e., avoidance) partially speaks to the philosophical differences of the scale

developers. For example, the use of behavioral and cognitive distractions are conceptualized positively in the ACQ scheme but negatively (and as an avoidant strategy) in the CSI measure. The use of distraction for the problem of binge eating in combination with other techniques would seem to be a positive and not negative coping mechanism.

Finally, failure to find an immediate relationship between compensatory skills and binge eating frequency may be attributable to differences in the amount of time expended on the project (which would impact on the amount or strength of compensatory skills acquired). In the current study, those who expended more effort reading the manual and doing homework exercises had better outcomes at a 6-month follow-up (but not immediately). Thus, the dose of the treatment appears to be important in outcome, and may have effected levels of compensatory skills attained. The three successful completers all expended high levels of effort, but S4 (who had a less favourable outcome at post-treatment) also expended a high level of effort (and yet did not experience the same degree of reduction in the target behaviors). Therefore, it is likely that does of treatment plays an important role in outcome, but it is unclear what dose is needed to impart the necessary amount of compensatory skills.

Mood, Self-Esteem, and Dietary Restraint in Self-Treatment

Slight changes in mood were observed with self-treatment. From pre- to post-treatment, where the average amount of contact with the investigator was 25 minutes via phone, the mean BDI score declined slightly. This finding is in contrast to that obtained using In-office CBT treatments. In-office treatments produce improvements in mood (Agras et al., 1989; Fairburn et al., 1993; Fairburn et al., 1991). When the Beck Depression Inventory (BDI)(Beck et al., 1961) is used with in-person treatments, there is a decrease of 5-15 points from pre- to post-treatment (on average)(Agras et al., 1994; Thackwray et al., 1993). One study involving self-treatment showed similar improvements in mood when minimal therapist contact was available (i.e., 7 sessions with

un-trained social worker)(Cooper et al., 1995), however, findings are less positive when therapist contact is not available (Schmidt et al., 1993). For example, using a 4-6 week CBT self-treatment manual, Schmidt et al. (1993) reported no changes in mood with treatment. From pre- to post-treatment in the current study, mood improved slightly but deteriorated at a 6-month follow-up. Thus, results from the current study showed that self-treatment produced little change in mood overall (and possibly worsened). As results were generally inferior to those obtained using in-person approaches, one might speculate that in-person contact may be important to secure affective change. This notion is supported by research which reveals that patients' relationships with their therapists and changes in their cognitions make separate additive contributions to mood change during cognitive therapy (Persons & Burns, 1985).

It may be a mistake however, to conclude that self-treatment with little therapist contact results in minimal mood change as the results of this study showed a high degree of variability between participants. For example, two participants showed a significant reduction in depressed mood (S2, S3), whereas mood was unaffected by treatment for the remainder. It might be more accurate to conclude that CBT impacts on mood for some but not all participants in self-treatment. This begs the question of who experiences an improvement in mood as a result of self-treatment. In this study, the participants who experienced improved mood also experienced a reduction in dietary restraint. This finding is similar to those obtained by other researchers, who report that improvements in dietary restraint are associated with enhanced mood (Booth et al., 1990; Garner et al., 1985). Thus, reducing dietary restraint may be critical in the enhancement of positive affect. It is possible that as concern with dieting diminishes, individuals feel more in control of themselves, which prompts improved mood. Alternatively, as mood improves, individuals may become less ruminative and preoccupied with a variety of things (including dieting and weight). Regardless, relative to other studies, and on average, it appears that this self-treatment package

impacted less on mood. An alternative explanation for the failure to find significant changes in mood in the current study might pertain to the pre-treatment screening of Major Depression which may have acted to create a ceiling effect for BDI scores. Thus, results might be nothing more than artifactual.

As with mood, research reveals that treatments for bulimia nervosa impact on self-esteem. Using the Rosenberg Self-Esteem Scale (Rosenberg, 1979) and the Coopersmith Self-Esteem Inventory (Coopersmith, 1959) the in-person treatment of bulimia nervosa has been shown to improve clients' self-esteem (Agras et al., 1994; Fairburn et al., 1993; Yates & Sambrailo, 1984). Unfortunately, there is a lack of standardization in the measurement of this concept owing largely to the ambiguity surrounding the term. In the area of self-treatment, self-esteem has been measured using Robson's (1989) Self-Concept Questionnaire. Results have indicated that self-concept is un-changed by self-treatment (Schmidt et al., 1993). In contrast, results from the current study showed that self-esteem (global) slightly improved with treatment, but that improvements tended to wane at a 6-month follow-up but show some signs of resurgence at a 1-year follow-up.

Studies examining the in-person treatment of bulimia nervosa have shown that treatment reduces dietary restraint. For example, Fairburn et al. (1991) measured dietary restraint before and after 19 sessions of in-person CBT using the Eating Disorder Examination (EDE) and found significant declines in restraint with treatment. Results from self-treatment studies are mixed regarding whether treatment impacts on dietary restraint. For example, using a self-treatment and minimal therapist contact package, Cooper et al. (1995) reported "small improvements" in dietary restraint with treatment using the Dutch Eating Disorder Questionnaire (van Strien, Frijters, Bergers, & Defares, 1988) from pre- ($\underline{M}$ = 40.3, $\underline{SD}$ = 6.8) to post-treatment ($\underline{M}$ = 34.1, $\underline{SD}$ = 11.5). In contrast, using a 4-6 week CBT handbook, Schmidt et al. (1993) discuss that a reduction

in dietary restraint was the largest outcome effect obtained, although the measure of restraint used and the mean values of restraint were not provided. Results from the current study, using the Revised Restraint Scale (Herman et al., 1978) showed no obvious pre- to post-treatment changes in average dietary restraint scores. On average, participants did not report changes in dietary restraint, including personal concern with dieting or weight fluctuation. Although there were no differences in restraint with treatment as a group, several subjects showed relatively large declines in dietary restraint (S2, S3), but the remainder experienced little to no change in dietary restraint. Self-treatment was not uniformly associated with a reduction in dietary restraint. With treatment, only two of the three successful completers showed a change in dietary restraint. This is similar to findings from other investigations, some authors of which suggested that bulimia nervosa need not necessarily be precipitated by lengthy periods of dietary restraint (Wilson et al., 1993). This finding has implications for cognitive-behavioral conceptualizations of bulimia nervosa which rely on the notion that restraint precedes behavioral dis-inhibition. Also, these results have implications for cognitive-behavioral treatments, and show that CBT can be effective regardless of its effect (or lack thereof) on dietary restraint (for some people). Thus, the tailoring of treatment packages to individual clients is warranted.

Self-Treatment and Satisfaction with the Body?

In the in-person treatment of bulimia nervosa, satisfaction with body image, like eating self-efficacy, is infrequently studied. This is curious given that there are some reports that post-test body image dissatisfaction is one of the best predictors of outcome at 6-month follow-ups (although not replicated in this study) (Freeman et al., 1985; Keller, Herzog, Lavori, Bradburn, & Mahoney, 1992). In the self-treatment area, some studies show that individuals become less preoccupied with their weight and shape with self-treatment (Cooper et al., 1995; Huon, 1985) whereas others do not (Schmidt et al., 1993). Including body image training does not explain this

discrepancy. For example, Huon (1985) included exercises pertaining to body image satisfaction in her treatment package whereas Cooper et al. (1995) and Schmidt et al. (1993) did not. The effect of self-treatment on satisfaction with the body may depend on the length of treatment offered. For example, those who failed to find changes in body image with treatment (i.e., Schmidt et al., 1993) offered a very brief package, whereas those who did find such changes (Cooper et al.,1995; Huon,1985) provided a more lengthy treatment. Thus, it is possible that change in body image requires a longer duration of treatment, but one that is not necessarily focused on body image per se.

The self-treatment manual in this study did not address issues of body image, but treatment was of sufficient duration to expect change on this dimension. Satisfaction with the body was measured using both self-report and silhouette methodologies. Results from pre- and post-test assessments indicated that participants became generally more satisfied with their looks and less invested in their appearance over the course of treatment. Using silhouette measures of body image, results from the current study showed that, on average, participants reported smaller real-ideal discrepancies from pre- to post-treatment, however, this depended on the type of instructional set given. For example, when participants were asked to select the silhouette that matched how they "felt" (affective) they looked, 4 out of 6 reported a smaller discrepancy between their real-ideal body shape. With treatment, two reported smaller real body shapes (S1, S4), one indicated having a larger ideal shape (S2), and one endorsed both a smaller real body shape and a larger ideal body shape (S10). Thus, changes in real and ideal body shapes varied from individual to individual. From pre- to post-treatment, when subjects were asked to select the silhouette that matched how they "thought" (cognitive) they looked, only 3 out of 6 participants reported a smaller discrepancy between their real-ideal body shape. Two participants reported having a smaller real body shape (S1, S10; S10 also reported having a smaller ideal shape at post-

treatment), and the other indicated having both a smaller real body shape and a larger ideal body shape (S2). Thus, it appears that self-treatment impacted on more subjects and to a greater degree on the affective aspect of body image than on the perceptual aspect of body image. Alternatively, the affective, more than the perceptual, component of body image may be unstable.

This discrepancy in body image satisfaction ratings using different instructional sets (i.e., affective, cognitive) has been reported elsewhere (Cohn & Adler, 1992; Fallon & Rozin, 1985). Descriptive studies indicate that individuals are more likely to report dissatisfaction with their bodies if asked how they "feel" about their bodies rather than how they "think" about their bodies (Fallon & Rozin, 1985). Results from this study replicated this finding and provided more evidence that body image satisfaction improves with cognitive-behavioral treatment not aimed at this parameter.

Drop-Outs

Four of the original ten participants dropped out of treatment prematurely. As mentioned previously, there were few demographic or descriptive variables which differentiated the "drop-outs" from the "completers" except that the drop-outs consisted of all of the non-purgers in the study (and one purger). It was surprising that the non-purgers, more than the purgers, were likely to discontinue with the program given that the primary focus of self-treatment was on eliminating binge eating and not reducing vomiting. Given that research shows that those who purge tend to have an early onset, and to have elevated rates of mood disorders, anxiety, alcoholism, sexual abuse histories, and parental discord (Garfinkel, Lin, Goering, Spegg, Goldbloom, Kennedy, Kaplan, & Woodside, 1996), one might surmise that these factors (e.g., duration of disorder, sexual abuse history) would prove to be impediments to continuing with self-treatment (and so we expected more drop-outs to be purging bulimics). Surprisingly, this was not the case. It should be noted that two of the non-purging drop-outs (S2, S8) improved considerably through self-

monitoring alone (baseline phase). Thus, some with non-purging bulimia nervosa may require a more minimal intervention.

Outcomes in Self-Treatment versus In-Person Treatment. Although this study did not compare self-treatment to in-office treatment, results (in terms of declines in binge/purge frequency) were similar to those published using in-office approaches. In virtually all studies to date, outcomes in the treatment of bulimia nervosa have been evaluated based on the difference between the frequency of binge eating/purging at pre-treatment (the week prior to treatment) and at post-treatment (the week prior to treatment completion)(See Agras et al., 1994; Agras et al., 1989; Thackwray et al., 1993; Fairburn et al., 1991). For example, using a 10-week CBT package (18 sessions) with an outpatient bulimic sample in the USA, Agras et al. (1989) reported an average decrease of 7.3 binges/week from pre- to post-treatment and an average decrease of 8.3 purges/week from pre- to post-treatment. Gains in binge eating and purging frequency were generally maintained at 6-month and 18-month follow-ups (Agras et al., 1994). Using an 18-week CBT package with outpatients in the UK, Fairburn et al. (1991) reported an average decline of 4.4 binges from pre- to post-treatment. Finally, using an 8-week CBT package with a community sample in the USA, Thackwray et al. (1993) reported an average decrease of 4.8 binge/purge episodes from pre- to post-treatment. Average binge/purge frequency was found to be .4 times/week at a 6 month follow-up. Thus, results from in-person cognitive-behavioural treatments of bulimia nervosa reveal reductions in binge eating which range from 4 to 8 binges per week.

Results from the current study appear to be on a par with those obtained using in-person treatments. For example, in the current study, binge eating was reduced by 7.5 binges/week from pre- to post-treatment and purging was reduced by 6.6 purges/week from pre- to post-treatment. The failure to find that in-person treatments are more efficacious than self-treatment in reducing

binge/purge frequency could be due to a more selective self-treatment sample (i.e., no participant had a history or current anorexia nervosa or borderline personality disorder), a more focused treatment, or some combination. Regardless, results from the current study suggest that self-treatment appears to be as effective as an in-person approach for reducing binge eating and purging at post-treatment, but less effective at follow-up. It should be noted that this was not a comparison research design, and so this conclusion can be only tentative.

Results from Other Self-Treatment Studies. Findings from this self-treatment study are similar (perhaps better) than those obtained using other self-treatment packages. In self-treatment studies reviewed, binge eating frequency has been reported to decrease by 2 to 4.1 binges/week and purging to decrease by 2 to 5.7 purges/week. For example, Cooper et al. (1995) provided a 16-24 week cognitive-behavioural self-treatment plus minimal therapist contact package to outpatients with bulimia nervosa. Results indicated that binge eating decreased by 4.1 binges/week from pre- to post-treatment and that purging decreased by 5.71 purges/week from pre- to post-treatment. Alternatively, Huon (1985) used an eclectic 7-month self-treatment package to treat magazine respondents with symptoms of bulimia nervosa. Results indicated that binge eating declined an average of 2.5 binges/week from pre- to post-treatment. Treasure et al. (1994) reported that binge eating frequency dropped from 3-6 times/week at pre-treatment to 2 times/week or less at post-treatment. Similar results were obtained for purging frequency. Recall the superior finding from the current study; Binge eating frequency declined by 7.5 binges per week and purging frequency declined by 6.6 purges per week.

Results from this study appear to be better than those obtained from other self-treatment investigations possibly because of the features of the samples involved. For example, Huon (1985) did not screen for chemical dependency, co-morbid eating disorders, or characterological problems, Treasure et al. (1994) and Cooper et al. (1995) did not refuse treatment to those with

anorexia nervosa, and Cooper et al. (1995) included those with Major Depression. As several of these variables are thought to be negative prognostic indicators for self-treatment (Coker, Vize, Wade, & Cooper, 1993; Fahy & Russell, 1993), and were used to exclude participants in the current study, it is likely that these individuals would have been more treatment-resistant. Thus, including individuals with these types of problems in the current study might have dampened results. Therefore, discrepancies between outcomes in this study and other self-treatment studies may be merely artifactual.

Although binge eating and purging frequencies appear to be significantly reduced with self-treatment, abstinence rates are poor. In-person approaches may have an advantage here. For example, it is commonly reported that 40-45% of persons treated with in-person CBT will be abstinent from binge eating at post-treatment, and at 6- and 12-month follow-ups (Fairburn et al., 1993; Fairburn et al., 1991; Garner et al., 1987). At post-treatment, results from the current study showed that only 1of the 6 participants (16%) was abstinent from both binge eating and purging and that one other participant was abstinent from purging. Results were similar at a 6-month follow-up.

Studies of self-treatment indicate that 30-52% of participants are abstinent from binge eating at post-treatment, and that approximately 22-33% achieve full remission with treatment (Cooper et al., 1995; Huon, 1985; Treasure et al., 1994; Treasure et al., 1996). The sample in the current study was relatively free of co-morbid problems (which would decrease and not increase overall disturbance), although the average duration of disorder for participants in the current study was 10.2 years, which is higher than that reported in the self-treatment studies surveyed (where duration of disorder ranged from 5 to 9 years)(Cooper et al., 1995; Huon, 1985; Treasure et al., 1994; Treasure et al., 1996). Thus, it is possible that those who have had bulimia nervosa for a shorter period of time have an easier time achieving abstinence with treatment.

Satisfaction with treatment

Participant satisfaction with self-treatment was assessed in the current study and found, on average, to be somewhat less than that typically obtained using in-person treatments with outpatient (M = 28.4, SD = 4.1)(Perreault, Leichner, Sabourin, & Gendreau, 1993) and private practice samples (M = 28.74, SD = 3.61)(Gaston & Sabourin, 1992). Note that these comparison studies included a mix of male and female clients who were generally older and who had a variety of mental health problems. Notably, in the current study, successful completers (S1,S2, S3) were no more satisfied than less successful ones (S4,S7,S10). Results suggested that satisfaction was not associated with objective changes in symptom levels. These results are similar to those obtained by Deane (1993) who found no correlation between client satisfaction and change in symptomatology. Instead, what appears to be relevant is clients' perception of symptom change (Attkisson & Zwick, 1982). This is not specific to a bulimic population. For example, Kurtz (1990) studied member satisfaction with a self-help association aimed at mood disorders and found that satisfaction was correlated with the perception of improved coping and with acceptance of one's illness. Perception of improved coping in the current study seemed to be highly related to client satisfaction. For example, S2 perceived large amounts of personal change and verbalized high levels of satisfaction with treatment. In contrast, S1, who achieved a high level of symptom relief, perceived little change, and was relatively less satisfied with treatment.

It was curious to observe several participants in the current study minimize the progress they had made. Despite receiving feedback from the investigator that their binge eating had substantially decreased, several replied "But I haven't stopped it (binge eating) completely". This type of "all-or-none" processing characteristic of those with bulimia nervosa (Fairburn, 1995) does impact on satisfaction ratings and self-assessments. Thus, we might expect that individuals with bulimia nervosa who are prone to dichotomous thinking, to be less able to perceive change

when change has occurred and so to be less suited for self-treatment where external feedback/encouragement is often absent.

Like research in inpatient settings with eating disordered clients (Lemberg & May, 1991), in the current study, psycho-education was viewed by most subjects as helpful. Many echoed that psycho-education increased their sense of normalcy and reassured them that health complications would remit once they stopped binge eating and purging (e.g., dental erosion). Beyond this, it appears that individuals with bulimia nervosa differ on what is the most effective component of self-treatment. Thus, a multi-faceted treatment package is warranted for this population. Results from the study indicated that the most difficult aspect of self-treatment for participants to implement is the discontinuing of dietary avoidance. Most individuals are unaware that they are avoiding food and so do not appropriately target these areas. Dietary avoidance may be one aspect of CBT where therapist contact is necessary and would be very helpful.

Cost-Effectiveness

With increasing pressure to be accountable, mental health services in Canada are voluntarily or non-voluntarily undergoing reviews of the cost-effectiveness of treatment. Self-treatment manuals have emerged as a cost-effective alternative or first intervention in a stepped care approach. Despite claims of cost-effectiveness, few have attempted to measure how cost-effective treatment actually is in the area of bulimia nervosa. One exception to this is a group of researchers who investigated the cost-effectiveness of various psychiatric treatments (e.g., medication, CBT) for bulimia nervosa (Koran, Agras, Rossiter, Arnow, Schneider, Telch, Raeburn, Bruce, Perl, & Kraemer, 1995). These authors conceptualized cost as a total of clinic and salary fees where a 50-minute CBT session was valued at $95.00 (US) and a brief medication visit was valued at $50.00 (US). Effectiveness was calculated in one of two ways: a) the proportion of patients who were abstinent from binge eating and purging and b) the proportion of

patients who binged and purged once per week or less. Effectiveness was measured somewhere between 4-16 weeks (time varied) post-treatment and at 1 year post-treatment. Results indicated the following median costs (in US dollars) per successful (i.e., abstinent) patient at 32 weeks after treatment onset: $3948.00 for 15-weeks of CBT, $6613.00 for a combination of CBT and 16-weeks of Desipramine, $4141.00 for a combination of CBT and 24 weeks of Desipramine, $2338.00 for 16 weeks of Desipramine, and $2972.00 for 24-weeks of Desipramine. Although these authors made an innovative attempt to measure cost-effectiveness, they failed to include costs such as transportation, lost wages, building depreciation, and the cost of medication. It was disappointing to see that these authors did not include the average cost of the approach for all participants (successful or not). Nevertheless, the study was original in its attempt to chart cost issues in the treatment of bulimia nervosa.

Not surprisingly, the current study showed that there is a significantly lower cost associated with self-treatment than with in-person treatment. The average cost for participants in the 15-week self-treatment program at post-treatment was one-half of what would be expected for in-person treatment, when costs such as transportation, missed employment wages, building overhead, and salary were incorporated. It seems clear that self-treatment has lower costs associated with it than does in-person treatment. The question for research in this area is whether the benefits are sufficient to justify its use. What is clear in this analysis is that how we define a therapeutic "benefit" (in the non-monetary sense) is critical to how cost-effective any given approach is. For example, if "benefits" are conceptualized as the amount of reduction in binge/purge frequency, self-treatment is considerably more cost-effective than in-person treatment. If "benefits" are conceptualized as the number of individuals abstinent, then self-treatment becomes less cost-effective relative to in-person treatment. Also, self-treatment may be less cost-effective for a sub-group of individuals with bulimia nervosa who require high levels

of support. Also, the individual who spends more time on homework exercises and reading a self-treatment manual will have a higher cost associated with treatment at a post-treatment assessment, but follow-ups may show that her treatment was more cost-effective in the long-run.

Clinical Issues in Self-Treatment

With self-treatment arises a series of ethical and clinical issues. Individuals with eating disorders are often at risk for serious health complications and health risks associated with binge eating, purging, and excessive dietary restraint. Accordingly, the use of a self-treatment manual without medical supervision may pose a health to individuals who are, for whatever reason, not prepared to seek medical consultation. Several of the women in this study discussed their experiences with the medical profession upon disclosing their problems with bulimia nervosa. Some felt that their problems had been minimized (e.g., they were told to "exercise" or "read a dietary cookbook"), and subsequently felt ashamed, angry, and mis-understood. Thus, there is reason to believe that merely seeking medical consultation for this problem will be insufficient for a number of people. These few results from this study suggest that greater education of medical professionals is warranted. Some authors have reported that providing self-treatment may discourage the subsequent seeking of in-person therapy for individuals with this problem (Treasure et al., 1996). Results of this study suggest otherwise. When approached with the option of group therapy after the completion of this project, 5 out of the 6 participants indicated an interest. Thus, Fairburn's (1995) self-treatment approach may actually facilitate the seeking of in-person therapy due to the discussion of different therapeutic approaches in the manual and acknowledgement that different people require different treatment strategies. Thus, contrary to some claims, the advent of self-treatment manuals is likely to produce more and not less business for psychologists.

Candidates for Self-Treatment

Based on the information obtained in this study, candidates for self-treatment might include the following: a) purgers as opposed to non-purgers, b) those who are motivated to expend high levels of effort reading the manual and doing manual exercises, c) those with non-extreme weight concern (who would find the manual interventions less threatening), d) those who can recognize personal change, e) those who report increased confidence about their ability to control their eating upon acquiring some compensatory skills, f) those who attribute less blame to themselves for their eating, g) those who are more hopeful about the possibility of change in eating habits, h) those who do not engage in high levels of food avoidance, i) those who have relatively low needs for support and/or are not isolated.

Limitations of the Current Study

The current study has a number of limitations which deserve mention. First the method of data collection (e.g., self-monitoring) may have been unreliable. Although the most useful tool to date to gather information on binge eating and purging, it is possible that individuals do not always report accurately. Although we have attempted to assess compliance in several different ways (e.g., review questions, completion of weekly questionnaires, Time Log, Post-Experimental questionnaire), we can not be sure that subjects spent as much time working on the manual as they reported. Although this problem of internal validity is a serious one, the current study represents the most sophisticated attempt as of yet to control and measure these issues. Other limitations pertain to the external validity of the project. Results of the study may not generalize to natural settings where individuals purchase self-treatment manuals and work on them without supervision. Also, it is likely that individuals who respond to advertisements on the radio and in the newspaper are highly motivated (relative to people with bulimia nervosa in the community). Alternatively, it is possible that the more highly motivated of those in the community search out in-person

services. Therefore, it is not clear whether the sample in this study was biased on this dimension (i.e., more motivated than average). The exclusion of individuals with co-morbid suicidality, prior or current anorexia, and characterological problems limits the ease with which we can generalize these findings, however, recall that there were few individuals who were excluded from participation in this study based on these co-morbid variables.

Future Directions

Results from the current study indicate that a sub-set of individuals with bulimia nervosa will be helped by self-treatment. Future research should explore who is most likely to benefit from self-treatment. Expanding the participant base to include members of minority groups of various age ranges and to include individuals with co-morbid problems (i.e., prior anorexia, chemical dependency, Major Depression) will provide more support for the reliability of the intervention. Future research should explore the predictors of positive treatment response. Future studies might evaluate cognitive style (i.e., tolerance of complexity) and the ability to self-reinforce as predictors of success in self-treatment. Investigators may want to consider focusing on the detection of personal change (e.g., what are the signs that you are changing?). A solution-focused approach might be helpful here. For example, asking participants to list occasions during the week when they had control over their eating and to indicate what relevant cues/skills were used would serve this purpose and would likely enhance outcomes. Future authors should limit normative comments regarding treatment progress, provide more clinical examples, emphasize that dietary avoidance is difficult to acknowledge (with examples of how to spot such behavior), and discuss the importance of social support in maintaining treatment gains. Also, future authors should not make any guarantees about the effect of self-treatment on mood and dietary restraint as changes on these dimensions are not uniform (but depend on the individual). As self-treatment seems ideal for use with individuals on waiting lists, future research should explore the effect of

in-person treatment for those with prior self-treatment experience (as in Treasure et al., 1996). Finally, due to the high degree of variability in the binge/purge data, a multiple baseline approach is perhaps not ideally suited to examine the question of treatment efficacy in bulimia nervosa, although it proved to be very useful in examining microscopic aspects of change (e.g., changes in compensatory skills, self-esteem). Multiple baseline designs might be more useful in controlled settings (such as inpatient facilities) where less variability in binge/purge behavior might be present. More examination of the nature of change in self-treatment is warranted to improve upon existing self-treatment manuals and to aid the clinician working alongside a self-treater. In this regard, the ACQ is promising and should receive more empirical scrutiny.

Summary

Self-treatment of bulimia nervosa is a viable treatment option for many. It produces gradual improvements in binge eating and purging frequency. Although self-treatment is not likely to produce abstinence in many, a proportion of individuals in self-treatment will become abstinent, and some through self-monitoring alone. Like with in-person treatments, some of the treatment gains are maintained at 6-months post-treatment, but the approach would be best suited to those on waiting lists for in-person services to facilitate complete abstinence. Although prognostic indicators for self-treatment are unknown, self-treatment would seem to be more suited for individuals where self-esteem and mood are not serious problems, and where dietary avoidance is not a major issue. For the clinician working within a self-treatment framework, individuals who tend to engage in "all or none processing" may be vulnerable to becoming dissatisfied with self-treatment (due to the slow nature of treatment gains without external feedback/praise). Finally, self-treatment is viewed positively by participants and is relatively inexpensive for the client and service provider.

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Appendix A-I

Self-Monitoring

Although there is psychometric support for the validity and reliability of self-monitoring (Loeb et al., 1994; Williamson et al., 1990; Williamson et al., 1987), it should be recognized that experts in the field acknowledge the difficulty of objectively measuring binge eating (Garner, Shafer, & Rosen, 1992; Walsh, 1993). It has been reported that individuals do not always assess personal intake accurately. As there is no biochemical or biological measure of binge eating, and given that such behavior is highly secretive, there are few to no opportunities for inter-observer agreement. Thus, the standard practice has been to rely on patients' perceptions of the extent of overeating in investigations with daily monitoring (Wilson, 1987). When assessment occurs on fewer occasions, the use of the Eating Disorders Examination (Cooper & Fairburn, 1993) is advocated. Loeb et al. (1994) accurately identified the critical issue here which is whether self-monitoring sacrifices accuracy for convenience. Results of a subsequent study by these authors demonstrated that self-monitored data was highly correlated with information obtained in the EDE by interviewer-directed recall. These authors concluded that self-monitoring is reliable, accurate, and cost-effective provided that participants are first informed as to the nature of binge eating.

Appendix A-II

Characteristics of Participants

Subject	Real Weight	Ideal Weight	Associations with Onset of Binge Eating	Prior Therapy	Disclosures
1	135	133	experimenting with vomiting as weight loss technique	None	Husband
2	160	125	elevated family problems	6 months-dynamic therapy in 1993; 3 months- Behavior Therapy in 1994	No one
3	125	110	weight loss reinforced by peers	1 month-inpatient therapy in 1991; intermittent individual therapy from 1993-1994	Mother
4	118	105	Increase in stress associated with academic training	None	None
5	160	130	Birth of first child with subsequent weight gain	two meetings with dietician in 1994; 12 sessions of Overeaters Anonymous in 1991; 11 sessions of group nutritionally-focused therapy in 1990;	None
6	135	130	Divorce	None	None
7	135	112	Move from small town to larger center	None	Mother
8	135	129	Move out of province	None	Mother
9	159	135	Unknown	None	None
10	142	135	Teased about Weight Gain	Monthly behavior therapy from 1988-1990; monthly individual counselling from 1993 - 1995	None

Appendix B

Eating Disorder Examination

To begin with, I should like to get a general picture of your eating habits over the last 4 weeks.

1) Have your eating habits varied much from day to day?
2) Have weekdays differed from weekends?
3) Have there been any days when you haven't eaten anything?
4) What about the previous 2 months?

Pattern of Eating

I would like to ask about your pattern of eating. Over the past 4 weeks which of these meals or snacks have you eaten on a regular basis?

5) breakfast
6) mid-morning snack
7) lunch
8) mid-afternoon snack
9) evening meal
10) evening snack
11) nocturnal snack (snack eaten after subject has been to sleep)

Restraint over eating

12) Over the past 4 weeks, have you been consciously trying to restrict what you eat, whether or not you have succeeded?
13) Has this been to influence your shape or weight?

Avoidance of eating

14) Over the past 4 weeks have you gone for periods of 8 or more waking hours without eating anything?
15) Has this been to influence your shape or weight?

Empty Stomach

16) Over the past 4 weeks, have you wanted your stomach to be empty?
17) Has this been to influence your shape or weight?

Food Avoidance

18) Over the past 4 weeks, have you tried to avoid eating any foods that you like, whether or not you have succeeded?
19) Has this been to influence your shape or weight?

Dietary Rules

20) Over the past 4 weeks, have you tried to follow certain definite rules regarding your eating, for example, a calorie limit, preset quantities of food, or rules about what you should eat or when you should eat?
21) Have there been occasions when you have been aware that you have broken a dietary rule that you have set for yourself?

Appendix B (contd.)

22) How have you felt about breaking them? How would you have felt if you had broken one of your dietary rules?
23) What are these rules? Why have you tried to follow them? Have they been designed to influence your shape or weight?
24) Have they been definite rules or general principles? Examples of definite rules would be "I must not eat eggs" or "I must not eat cake", whereas you could have the general principle "I should try to eat healthy food".

Preoccupation with food, eating, or calories
25) Over the past 4 weeks, have you spent much time between meals thinking about food, eating, or calories?
26) Has thinking about food, eating, or calories interfered with your ability to concentrate? How about concentrating on things that you are interested in, for example, reading, watching television, or following a conversation?

Fear of losing control over eating
27) Over the past 4 weeks, have you been afraid of losing control over eating?

Bulimic episodes and other episodes of overeating
I would like to ask you about any episodes of overeating that you may have had over the past 4 weeks. Different people mean different things by overeating. I would like you to describe any times when you have felt that you have eaten too much in one go.
28) Have there been any times when you have felt that you have eaten too much, but others might not agree?
29) Typically what have you eaten at these times?
30) What were others eating at the time?
31) Did you have a sense of loss of control at the time?
32) Could you have stopped eating once you had started?
33) Could you have prevented the episode from occurring?

Dietary restriction outside bulimic episodes
34) Outside the times when you have lost control over eating, how much have you been restricting the amount that you eat?
35) Typically, what have you eaten?
36) Has this been to influence your shape or weight?

Social Eating
37) Over the past 4 weeks, have you been concerned about other people seeing you eat?
38) Have you avoided such occasions?

Eating in secret
39) Over the past 4 weeks, have you eaten in secret?

Guilt about eating
40) Over the past 4 weeks, have you felt guilty after eating?

Appendix B (contd.)

41) Have you felt that you have done something wrong? why?
42) What proportion of times that you have eaten have you felt guilty?

Self-induced vomiting
43) Over the past 4 weeks, have you made yourself sick as a means of controlling your shape or weight?

Laxative misuse
44) Over the past 4 weeks, have you taken laxatives as a means of controlling your shape or weight?

Diuretic misuse
45) Over the past 4 weeks, have you taken diuretics as a means of controlling your shape or weight?

Intense exercising to control shape or weight
46) Over the past 4 weeks, have you exercised as a means of controlling your weight, altering your shape or amount of fat, or burning off calories?
47) Typically, what form of exercise have you taken?
47a) in last two weeks, estimate # of hours and minutes spent exercising?

Abstinence from extreme weight-control behaviour
48) Over the past 3 months, has there been a period of 2 or more weeks when you have not...(ask for individual items such as fasting, vomiting, laxatives, diuretics, exercise)?

Dissatisfaction with weight
49) Over the past 4 weeks, have you been dissatisfied with your weight?
50) Have you been so dissatisfied that it has made you unhappy?

Desire to lose weight
51) Over the past 4 weeks, have you wanted to lose weight?
52) Have you had a strong desire to lose weight?

Desired Weight
53) What weight would you like to be?

Reaction to prescribed weighing
54) How would you feel if you were asked to weight yourself once each week for the next 4 weeks?

Dissatisfaction with shape
55) Over the past 4 weeks, have you been dissatisfied with your shape?
56) Have you been so dissatisfied that it has made you unhappy?

Appendix B (contd.)

Preoccupation with shape or weight

57) Over the past 4 weeks, have you spent much time thinking about your shape or weight?
58) Has thinking about your shape or weight interfered with your ability to concentrate? How about concentrating on things you are interested in, for ex. reading, watching tv, or following a conversation?

Importance of shape

59) Over the past 4 weeks, has your shape been important in influencing how you feel about (judge, think, evaluate) yourself as a person?
60) If you imagine the things that influence how you feel about yourself-such as your performance at work, being a parent, your marriage, how you get on with other people- and put these things in order of importance, where does your shape fit in?
61) If, over the past 4 weeks, your shape had changed in any way, would this have affected how you feel about yourself?
62) Is it important to you that your shape does not change?

Importance of weight

63) Over the past 4 weeks, has your weight been important in influencing how you feel about yourself as a person?
64) If you imagine the things that influence how you feel about yourself--such as (your performance at work, being a parent, your marriage, how you get on with other people)- and put these things in order of importance, where does your weight fit in?
65) If, over the past 4 weeks, your weight had changed in any way, would this have affected how you feel about yourself?
66) Is it important to you that your weight does not change?

Fear of weight gain

67) Over the past 4 weeks, have you been afraid that you might gain weight or become fat?

Discomfort seeing body

68) Over the past 4 weeks, have you felt uncomfortable seeing your body, for example, in the mirror, in shop window reflections, while undressing, or while taking a bath or shower?
69) Have you avoided seeing your body? why?

Avoidance of exposure

70) Over the past 4 weeks, have you felt uncomfortable about others seeing your body, for example, in communal changing rooms, when swimming, or when wearing clothes that show your shape?
71) What about your partner or friends seeing your body?
72) Have you avoided such situations? why?

Feelings of fatness

73) Over the past 4 weeks, have you felt fat?

Appendix B (contd.)

Flat stomach
74) Over the past 4 weeks, have you had a definite desire to have a flat stomach?

Weight and height
Subjects weight and height should be measured

Maintained low weight
75) Over the past 3 months, have you been trying to lose weight?
if no: Have you been trying to make sure that you do not gain weight?

Menstruation
76) Have you missed any menstrual periods over the past few months?
77) How many periods have you had?
78) Are you taking an oral contraceptive (the pill)?

Appendix B-II

Screen for Mood, Personality, and Substance Use

1) When you think over the last 6 months, has there been a time when you have been feeling down (most of the time, every day, 2 wks)?
2) Loss of energy?
3) Irritability
4) Difficulty concentrating
5) sleep disturbances
6) appetite (inc, dec) and/or weight gain?
7) self-harm?

Since early adulthood and present in variety of contexts....

8) frantic efforts to avoid real or imagined abandonment (not self-harm)
9) pattern of unstable/intense relnships char by idealization and devaluation
10) identity disturbance: unstable self-image
11) impulsivity
12) recurrent suicidal beh, gestures, threats
13) affective instability
14) chronic feelings of emptiness
15) intense inapprop anger or difficulty controlling anger (temper, physical fights)
16) transient, stress-related paranoid ideation or dissociative symptoms
(wish for protect, fear is of ignore)

17) In the average month, how often would you have a drink of beer, wine, or other alcohol?

4 to 6 times a week _____
2 or 3 times a week _____
about once a week _____
2 or 3 times a month _____
about once a month _____
less often than once a month _____
not at all in the last year _____

18) In the average month, how often would you have five or more drinks (beer, wine, or other alcohol)

4 to 6 times a week _____
2 or 3 times a week _____
about once a week _____
2 or 3 times a month _____
about once a month _____
less often than once a month _____
not at all in the last year _____

Appendix B-II (contd.)

19) Are you currently taking any medication (prescription or otherwise)?

if so--for what?	how much?	how often?	when did you start

20) Prior help for these and other problems

Helper	Duration (dates)	Type of therapy	Successful

Appendix B-III

Demographic Form

Name_____ Age_____

Please circle your answers (you can circle more than one response)

1. Ethinic/Racial Group
a) white
b) black
c) Asian
d) East Indian
e) West Indian
f) North American Indian
g) other

2. Marital Status
a) presently in first marriage
b) divorced and remarried
c) divorced, not remarried
d) widowed, remarried
e) widowed, never remarried
f) never married
g) cohabiting

3. Educational Background
a) graduate degree
b) some graduate school
c) university graduate
d) some university
e) trade school or community college
f) high school graduate

4. Occupation
a) unemployed
b) part-time student
c) full-time student
d) part-time employment
e) full-time employment
f) full-time homemaker
g) retired

5. Parental income
a) < $10 000/year
b) $10 000-$20 000/year
c) $20 000-$30 000/year
d) $30 0000-$40 000/year
e) $40 000-$50 000/year
f) > $50 000/year

Appendix C

Self-Monitoring Forms

Reminder--binges are eating an amount of food which nearly everyone would find excessive, and during which, you feel out of control or unable to stop eating

Day_____ Date_____

Time	Food and drink consumed	Place	*	V/L
Context/				
Comment				

* signify eating viewed by the person as excessive. V/L signifies vomiting or laxative use.

Appendix D

Bulimia Test-Revised (BULIT-R)

1. I am satisfied with my eating patterns
   a) agree
   b) neutral
   c) disagree a little
   d) disagree
   e) disagree a lot
2. Would you presently call yourself a "binge eater"?
   a) yes, absolutely
   b) yes
   c) yes, probably
   d) yes, possibly
   e) no, probably not
3. Do you feel you have control over the amount of food you consume?
   a) most or all of the time
   b) a lot of the time
   c) occasionally
   d) rarely
   e) never
4. I am satisfied with the shape and size of my body
   a) frequently or always
   b) sometimes
   c) occasionally
   d) rarely
   e) seldom or never
5. When I feel that my eating behaviour is out of control, I try to take rather extreme measures to get back on course (strict dieting, fasting, laxatives, diuretics, self-induced vomiting, or vigorous exercise).
   a) always
   b) almost always
   c) frequently
   d) sometimes
   e) never or my eating behaviour is never out of control
6. I use laxatives or suppositories to help control my weight
   a) once a day or more
   b) 3-6 times a week
   c) once or twice a week
   d) 2-3 times a month
   e) once a month or less (or never)
7. I am obsessed about the size and shape of my body
   a) always
   b) almost always
   c) frequently
   d) sometimes

Appendix D (contd.)

e) seldom or never

8. There are times when I rapidly eat a very large amount of food
   a) more than twice a week
   b) twice a week
   c) once a week
   d) 2-3 times a month
   e) once a month or less (or never)
9. How long have you been binge eating (eating uncontrollably to the point of stuffing yourself)?
   a) not applicable; I don't binge eat
   b) less than 3 months
   c) 3 months-1 year
   d) 1-3 years
   e) 3 or more years
10. Most people I know would be amazed if they knew how much food I can consume at one sitting
   a) without a doubt
   b) very probably
   c) probably
   d) possibly
   e) no
11. I exercise in order to burn calories
   a) more than 2 hours per day
   b) about 2 hours per day
   c) more than 1 but less than 2 hours per day
   d) one hour or less per day
   e) I exercise but not to burn calories or I don't exercise
12. Compared with women your age, how preoccupied are you about your weight and body shape?
   a) a great deal more than average
   b) much more than average
   c) more than average
   d) a little more than average
   e) average or less than average
13. I am afraid to eat anything for fear that I won't be able to stop
   a) almost
   b) almost always
   c) frequently
   d) sometimes
   e) seldom or never
14. I feel tormented by the idea that I am fat or might gain weight
   a) always
   b) almost always
   c) frequently
   d) sometimes
   e) seldom or never

15. How often do you intentionally vomit after eating?
    a) 2 or more times a week
    b) once a week
    c) 2-3 times a month
    d) once a month
    e) less than once a month or never
16. I eat a lot of food when I'm not even hungry
    a) very frequently
    b) frequently
    c) occasionally
    d) sometimes
    e) seldom or never
17. My eating patterns are different from the eating patterns of most people
    a) always
    b) almost always
    c) frequently
    d) sometimes
    e) seldom or never
18. After I binge eat I turn to one of several strict methods to try to keep from gaining weight (vigorous exercise, strict dieting, fasting, self-induced vomiting, laxatives, or diuretics).
    a) never or I don't binge eat
    b) rarely
    c) occasionally
    d) a lot of the time
    e) most of the time
19. I have tried to lose weight by fasting or going on strict diets
    a) not in the past year
    b) once in the past year
    c) 2-3 times in the past year
    d) 4-5 times in the past year
    e) more than 5 times in the past year
20. I exercise vigorously and for long periods of time in order to burn calories
    a) average or less than average
    b) a little more than average
    c) more than average
    d) much more than average
    e) a great deal more than average
21. When engaged in an eating binge, I tend to eat foods that are high in carbohydrates (sweets and starches)
    a) always
    b) almost always
    c) frequently
    d) sometimes
    e) seldom or I don't binge
22. Compared to most people, my ability to control my eating behaviour seems to be:
    a) greater than others' ability
    b) about the same

Appendix D (contd.)

c) less
d) much less
e) I have absolutely no control

23. I would presently label myself a "compulsive eater" (one who engages in episodes of uncontrolled eating)
a) absolutely
b) yes
c) yes, probably
d) es, possibly
e) no, probably not

24. I hate the way my body looks after I eat too much
a) seldom or never
b) sometimes
c) frequently
d) almost always
e) always

25. When I am trying to keep from gaining weight, I feel that I have to resort to vigorous exercise. strict dieting, fasting, self-induced vomiting, laxatives, or diuretics
a) never
b) rarely
c) occasionally
d) a lot of the time
e) most or all of the time

26. Do you believe that it is easier for you to vomit that it is for most people
a) yes, it's not problem at all for me
b) yes, it's easier
c) yes. it's a little easier
d) about the same
e) no, it's less easy

27. I use diuretics (water pills) to help control my weight
a) never
b) seldom
c) sometimes
d) frequently
e) very frequently

28. I feel that food controls my life
a) always
b) almost always
c) frequently
d) sometimes
e) seldom or never

29. I try to control my weight by eating little or no food for a day or longer
a) never
b) seldom
c) sometimes

Appendix D (contd.)

d) frequently
e) very frequently

30. when consuming a large quantity of food, at what rate of speed do you usually eat?
a) more rapidly than most people have ever eaten in their lives
b) a lot more rapidly than most people
c) a little more rapidly than most people
d) about the same rate as most people
e) more slowly than most people (or not applicable)

31. I use laxatives or suppositories to help control my weight
a) never
b) seldom
c) sometimes
d) frequently
e) very frequently

32. Right after I binge eat I feel:
a) so fat and bloated I can't stand it
b) extremely fat
c) fat
d) a little fat
e) ok about how my body looks or I never binge eat

33. Compared to other people of my sex, my ability to always feel in control of how much I eat is:
a) about the same or greater
b) a little less
c) less
d) much less
e) a great deal less

34. In the last 3 months, on the average how often did you binge eat (eat uncontrollably to the point of stuffing yourself)?
a) once a month or less (or never)
b) 2-3 times a month
c) once a week
d) twice a week
e) more than twice a week

35. Most people I know would be surprised at how fat I look after I eat a lot of food
a) yes, definitely
b) yes
c) yes, probably
d) yes, possibly
e) no, probably not or I never eat a lot of food

36. I use diuretics (water pills) to help control my weight
a) 3 times a week or more
b) once or twice a week
c) 2-3 times a month
d) once a month
e) never

Appendix E

Coping Strategy Indicator Scale (CSI)

We are interested in how people cope with the problems and troubles in their lives. Listed below are several possible ways of coping. We would like you to indicate to what extent you, yourself, used each of these coping methods. Try to think of one problem you have encountered in the last 6 months or so. This should be a problem that was important to you, and that caused you to worry (anything from loss of a loved one to a traffic citations, but one that was important to you). Please describe this problem in a few words _____.
With this problem in mind, indicate how you coped using the following scale:
a=a lot, b=a little, c=not at all

1. Let your feelings out to a friend
2. Rearranged things around you so that your problem had the best chance of being resolved
3. Brainstormed all possible solutions before deciding what to do
4. Tried to distract yourself from the problem
5. Accepted sympathy and understanding from someone
6. Did all you could to keep others from seeing how bad things really were
7. Talked to people about the situation because talking about it helped you to feel better
8. Set some goals for yourself to deal with the situation
9. Weighed your options very carefully
10. Daydreamed about better times
11. Tried different ways to solve the problem until you found one that worked
12. Confided your fears and worries to a friend or relative
13. spent more time than usual alone
14. Told people about the situation because just talking about it helped you to come up with solutions
15. Thought about what needed to be done to straighten things out
16. Turned your full attention to solving the problem
17. Formed a plan of action in your mind
18. Watched television more than usual
19. Went to someone (friend or professional in order to help you feel better)
20. Stood firm and fought for what you wanted in the situation
21. Avoided being with people in general
22. Buried yourself in a hobby or sports activity to avoid the problem
23. Went to a friend to help you feel better about the problem
24. Wen to a friend for advice on how to change the situation
25. Accepted sympathy and understanding from friends who had the same problem
26. Slept more than usual
27. Fantasized about how things could have been different
28. Identified with characters in novels or movies
29. Tried to solve the problem
30. Wished that people would just leave you alone
31. Accepted help from a friend or relative
32. Sought reassurance from those who know you best
33. Tried to carefully plan a course of action rather than acting on impulse

Appendix F

Restraint Scale

1. How often are you dieting?
   a=never
   b=rarely
   c=sometimes
   d=usually
   e=always
2. What is the maximum amount of weight (in pounds) you have ever lost in one month?
   a=0-4 lbs
   b=5-9 lbs
   c=10-14 lbs
   d=15-19 lbs
   e=+ 20 lbs
3. What is your maximum weight gain within a week?
   a=0-1 lbs
   b=1.1-2 lbs
   c=2.1-3 lbs
   d=3.1-5 lbs
   e=+ 5.1 lbs
4. In a typical week, how much does your weight fluctuate?
   a=0-4 lbs
   b=5-9 lbs
   c=10-14 lbs
   d=15-19 lbs
   e=+ 20 lbs
5. Would a weight fluctuation of 5 lbs. affect the way you live your life?
   a=not at all
   b=slightly
   c=moderately
   d=very much
6. Do you eat sensibly in front of others and splurge alone?
   a=never
   b=rarely
   c=often
   d=always
7. Do you give too much time and thought to food?
   a=never
   b=rarely
   c=often
   d=always
8. Do you have feelings of guilt after overeating?
   a=never
   b=rarely
   c=often

Appendix F (contd.)

d=always

9. How conscious are you of what you're eating?
   a=not at all
   b=slightly
   c=moderately
   d=extremely
10. How many pounds over your desired weight were you at your maximum weight?
   a=0
   b=1-5
   c=6-10
   d=11-20
   e=+20

Appendix G

Eating Self-Efficacy Scale (ESES)

I would liked you to rate the likelihood that you would have difficulty controlling your overeating in each of the situations listed on the next pages, using this scale:

1 2 3 4 5 6 7

No difficulty controlling eating — moderate difficulty controlling eating — most difficulty controlling eating

How difficulty is it to control your....

1. overeating after work or school
2. overeating when you feel restless
3. overeating around holiday time
4. overeating when you feel upset
5. overeating when tense
6. overeating with friends
7. overeating when preparing food
8. overeating when irritable
9. overeating as part of a social occasion dealing with food-like at a restaurant or dinner party
10. overeating with family members
11. overeating when annoyed
12. overeating when angry
13. overeating when you are angry at yourself
14. overeating when depressed
15. overeating when you feel impatient
16. overeating when you want to sit back and enjoy some food
17. overeating after an argument
18. overeating when you feel frustrated
19. overeating when tempting food is in front of you
20. overeating when you want to cheer up
21. overeating when there is a lot of food available to you (refrigerator is full)
22. overeating when you feel overly sensitive
23. overeating when nervous
24. overeating when hungry
25. overeating when anxious or worried

Appendix H

Author-Devised Compensatory Skills Scale (ACQ)

1. Over the past week, think of a time when you did binge eat or a time when you felt like binge eating.

Describe the situation:

Your initial thoughts are:

a) How vividly are you imagining this situation (0-100)?
where 100 means that you imagine the situation extremely well

b) What are your further thoughts?

c) What would you then do (if anything)?

Appendix I

Modified Distressing Thoughts Questionnaire (MDTQ)

Please rate each of the following statements using this scale:

1	2	3	4	5	6	7	8	9
never								always

I) Thoughts or images of a personally embarrassing, humiliating or painful experience
1. how often does this thought or image enter your mind?
2. how sad or unhappy does this thought or image make you feel?
3. how worried does this thought or image make you feel?
4. how difficult is it for you to remove this thought or image from your mind?
5. how guilty does this thought or image make you feel when it enters your mind?
6. how much do you believe the contents of this thought or image will actually happen in real life to you?

II) thoughts or images that something is, or may in the future, be wrong with my health
7. how often does this thought or image enter your mind?
8. how sad or unhappy does this thought or image make you feel?
9. how worried does this thought or image make you feel?
10. how difficult is it for you to remove this thought or image from your mind?
11. how guilty does this thought or image make you feel when it enters your mind?
12. how much do you believe the contents of this thought or image will actually happen in real life to you?

III) thoughts or images of a living friend or family member dying from an illness
13. how often does this thought or image enter your mind?
14. how sad or unhappy does this thought or image make you feel?
15. how worried does this thought or image make you feel?
16. how difficult is it for you to remove this thought or image from your mind?
17. how guilty does this thought or image make you feel when it enters your mind?
18. how much do you believe the contents of this thought or image will actually happen in real life to you?

IV) thoughts or images of saying rude and/or unacceptable things to someone
19. how often does this thought or image enter your mind?
20. how sad or unhappy does this thought or image make you feel?
21. how worried does this thought or image make you feel?
22. how difficult is it for you to remove this thought or image from your mind?
23. how guilty does this thought or image make you feel when it enters your mind?
24. how much do you believe the contents of this thought or image will actually happen in real life to you?

V) Thoughts or images of personally unacceptable sexual acts
25. how often does this thought or image enter your mind?
26. how sad or unhappy does this thought or image make you feel?
27. how worried does this thought or image make you feel?
28. how difficult is it for you to remove this thought or image from your mind?

Appendix I (contd.)

29. how guilty does this thought or image make you feel when it enters your mind?
30. how much do you believe the contents of this thought or image will actually happen in real life to you?

VI) Thoughts or images that a friend or family member is going to have an accident, or be harmed on some way

31. how often does this thought or image enter your mind?
32. how sad or unhappy does this thought or image make you feel?
33. how worried does this thought or image make you feel?
34. how difficult is it for you to remove this thought or image from your mind?
35. how guilty does this thought or image make you feel when it enters your mind?
36. how much do you believe the contents of this thought or image will actually happen in real life to you?

VII) Thoughts or images of why my life is not going the way I want it to

37. how often does this thought or image enter your mind?
38. how sad or unhappy does this thought or image make you feel?
39. how worried does this thought or image make you feel?
40. how difficult is it for you to remove this thought or image from your mind?
41. how guilty does this thought or image make you feel when it enters your mind?
42. how much do you believe this thought or image is actually true of you?

VIII) Thoughts or images that my future is bleak

43. how often does this thought or image enter your mind?
44. how sad or unhappy does this thought or image make you feel?
45. how worried does this thought or image make you feel?
46. how difficult is it for you to remove this thought or image from your mind?
47. how guilty does this thought or image make you feel when it enters your mind?
48. how much do you believe this thought or image is actually true of you?

IX) Thoughts or images of wishing I was a better person

49. how often does this thought or image enter your mind?
50. how sad or unhappy does this thought or image make you feel?
51. how worried does this thought or image make you feel?
52. how difficult is it for you to remove this thought or image from your mind?
53. how guilty does this thought or image make you feel when it enters your mind?
54. how much do you believe this thought or image is actually true of you?

X) Thoughts or images that I am worthless

55. how often does this thought or image enter your mind?
56. how sad or unhappy does this thought or image make you feel?
57. how worried does this thought or image make you feel?
58. how difficult is it for you to remove this thought or image from your mind?
59. how guilty does this thought or image make you feel when it enters your mind?
60. how much do you believe this thought or image is actually true of you?

XI) Thoughts or images asking what is the matter with me?

61. how often does this thought or image enter your mind?
62. how sad or unhappy does this thought or image make you feel?
63. how worried does this thought or image make you feel?

Appendix I (contd.)

64. how difficult is it for you to remove this thought or image from your mind?
65. how guilty does this thought or image make you feel when it enters your mind?
66. how much do you believe this thought or image is actually true of you?
XII) Thoughts or images that I am a failure
67. how often does this thought or image enter your mind?
68. how sad or unhappy does this thought or image make you feel?
69. how worried does this thought or image make you feel?
70. how difficult is it for you to remove this thought or image from your mind?
71. how guilty does this thought or image make you feel when it enters your mind?
72. how much do you believe this thought or image is actually true of you?
XIII) Thoughts or images that I am or may in the future become fat
73. how often does this thought or image enter your mind?
74. how sad or unhappy does this thought or image make you feel?
75. how worried does this thought or image make you feel?
76. how difficult is it for you to remove this thought or image from your mind?
77. how guilty does this thought or image make you feel when it enters your mind?
78. how much do you believe that the contents of this thought or image will actually happen in real life to you?
XIV) Thoughts or images that food controls my life
79. how often does this thought or image enter your mind?
80. how sad or unhappy does this thought or image make you feel?
81. how worried does this thought or image make you feel?
82. how difficult is it for you to remove this thought or image from your mind?
83. how guilty does this thought or image make you feel when it enters your mind?
84. how much do you believe this thought or image is actually true of you?
XV) Thoughts or images that I won't be able to stop eating when I want to
85. how often does this thought or image enter your mind?
86. how sad or unhappy does this thought or image make you feel?
87. how worried does this thought or image make you feel?
88. how difficult is it for you to remove this thought or image from your mind?
89. how guilty does this thought or image make you feel when it enters your mind?
90. how much do you believe that this thought or image is actually true of you?
XVI) Thoughts or images that I must compensate for excess eating by vomiting, purging, or exercise.
91. how often does this thought or image enter your mind?
92. how sad or unhappy does this thought or image make you feel?
93. how worried does this thought or image make you feel?
94. how difficult is it for you to remove this thought or image from your mind?
95. how guilty does this thought or image make you feel when it enters your mind?
96. how much do you believe that this thought or image is actually true of you?
XVII) Thoughts or images that I have too much fat on my body
97. how often does this thought or image enter your mind?

98. how sad or unhappy does this thought or image make you feel?
99. how worried does this thought or image make you feel?
100. how difficult is it for you to remove this thought or image from your mind?
101. how guilty does this thought or image make you feel when it enters your mind?
102. how much do you believe this thought or image is actually true of you?

XVIII) Thoughts or images that I never stop thinking about food

103. how often does this thought or image enter your mind?
104. how sad or unhappy does this thought or image make you feel?
105. how worried does this thought or image make you feel?
106. how difficult is it for you to remove this thought or image from your mind?
107. how guilty does this thought or image make you feel when it enters your mind?
108. how much do you believe that this thought or image is actually true of you?

Appendix J

State Self-Esteem Scale (SSES)

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you right now. Write your response on the line next to the question, using the following scale.

Scale: 1=not at all,
2=a little bit
3=somewhat
4=very much
5=extremely

1. I feel confident about my abilities
2. I am worried about whether I am regarded as a success or failure
3. I feel satisfied with the way my body looks right now
4. I feel frustrated or rattled about my performance
5. I feel that I am having trouble understanding things that I read
6. I feel that others respect and admire me
7. I am dissatisfied with my weight
8. I feel self-conscious
9. I feel as smart as others
10. I feel displeased with myself
11. I feel good about myself
12. I feel pleased with my appearance
13. I am worried about what other people think of me
14. I feel confident that I understand things
15. I feel inferior to others at this moment
16. I feel unattractive
17. I feel concerned about the impression I am making
18. I feel that I have less scholastic ability right now than others
19. I feel like I'm not doing well
20. I am worried about looking foolish

Appendix K

Beck Depression Inventory (BDI)

Please circle the statement which best reflects how you feel right now. There are no right or wrong answers, only that which is right for you.

1.
a) I do not feel sad
b) I feel blue or sad
c) I am blue or sad all the time and I can't snap out of it
d) I am so sad or unhappy that it is very painful
e) I am so sad or unhappy that I can't stand it

2.
a) I am not particularly pessimistic or discouraged about the future
b) I feel discouraged about the future
c) I feel I have nothing to look forward to
d) I feel that I won't ever get over my troubles
e) I feel that the future is hopeless and that things cannot improve

3.
a) I do not feel like a failure
b) I feel I have failed more than the average person
c) I feel I have accomplished very little that is worthwhile or that means anything
d) As I look back on my life all I can see is a lot of failures
e) I feel I am a complete failure as a person (parent, wife)

4.
a) I am not particularly dissatisfied
b) I feel bored most of the time
c) I don't enjoy things the way I used to
d) I don't get satisfaction out of anything anymore
d) I am dissatisfied with everything

5.
a) I don't feel particularly guilty
b) I feel bad or unworthy a good part of the time
c) I feel quite guilty
d) I feel bad or unworthy practically all the time now
d) I feel as though I am very bad or worthless

6.
a) I don't feel I am being punished
b) I have a feeling that something bad may happen to me
c) I feel I am being punished or will be punished
d) I feel I deserve to be punished
e) I want to be punished

7.
a) I don't feel disappointed in myself
b) I am disappointed in myself
c) I don't like myself
d) I am disgusted with myself

Appendix K (contd.)

e) I hate myself
8.
a) I don't feel I am any worse than anybody else
b) I am very critical of myself for my weaknesses or mistakes
c) I blame myself for everything that goes wrong
d) I feel I have many bad faults
9.
a) I don't have any thoughts of harming myself
b) I have thoughts of harming myself but I would not carry them out
c) I feel I would be better off dead
d) I have definite plans about committing suicide
e) I feel my family would be better off if I were dead
f) I would kill myself if I could
10.
a) I don't cry any more than usual
b) I cry more now than I used to
c) I cry all the time now. I can't stop it.
d) I used to be able to cry but now I can't cry at all even though I want to
11.
a) I am no more irritated now than I ever am
b) I get annoyed or irritated more easily than I used to
c) I feel irritated all the time
d) I don't get irritated at all at the things that used to irritate me
12.
a) I have not lost interest in other people
b) I am less interested in other people now than I used to be
c) I have lost most of my interest in other people and have little feeling for them
d) I have lost all my interest in other people and don't care about them at all
13.
a) I make decisions about as well as ever
b) I am less sure of myself now and try to put off making decisions
c) I can't make decisions any more without help
d) I can't make any decisions at all any more
14.
a) I don't feel I look any worse than I used to
b) I am worried that I am looking old or unattractive
c) I feel that there are permanent changes in my appearance and they make me look unattractive
d) I feel that I am ugly or repulsive looking
15.
a) I can work about as well as before
b) It takes extra effort to get started at doing something
c) I don't work as well as I used to
d) I have to push myself very hard to do anything
e) I can't do any work at all

Appendix K (contd.)

16.
a) I can sleep as well as usual
b) I wake up more tired in the morning than I used to
c) I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
d) I wake up early every day and can't get more than 5 hours sleep
17.
a) I don't get any more tired than usual
b) I get tired more easily than I used to
c) I get tired from doing anything
d) I get too tired to do anything
18.
a) My appetite is no worse than usual
b) My appetite is not as good as it used to be
c) My appetite is much worse now
d) I have no appetite at all any more
19.
a) I haven't lost much weight, if any, lately
b) I have lost more than 5 pounds
c) I have lost more than 10 pounds
d) I have lost more than 15 pounds
20.
a) I am no more concerned about my health than usual
b) I am concerned about aches and pains or upset stomach constipation or other unpleasant feelings in my body
c) I am so concerned with how I feel or what I feel that it's hard to think of much else
d) I am completely absorbed in what I feel
21.
a) I have not noticed any recent change in my interest in sex
b) I am less interested in sex than I used to be
c) I am much less interested in sex now
d) I have lost interest in sex completely

Appendix L

Body Image Assessment (BIA)

Experimenter gives following instructions, after randomly placing the cards on a table in front of the subject.

1. Select the card that most accurately depicts your current body size, as you perceive it to be. Please be honest. You must choose only one card and you may not rearrange the cards to directly compare them.

2. Select the card that most accurately depicts the body size that you would most prefer. Again, be honest and do not rearrange the cards.

Also..

3. Select the card that most accurately depicts what you feel your body is like.

4. Select the card that most accurately depicts what you feel you would like to look like.

1

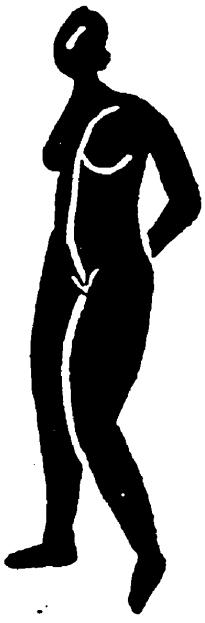
2

3

4

5

6



7

8

9

Appendix M

Multi-Dimensional Body Self Relations Questionnaire (MBSRQ)

Please use the following scale to answer these questions:

1=not at all
2=very little
3=moderately
4=very much
5=extremely

Appearance Evaluation

1. My body is sexually appealing.
2. I like my looks just the way they are
3. Most people would consider me good-looking
4. I like the way I look without my clothes on
5. I like the way my clothes fit me
6. I dislike my physique*
7. I am physically unattractive*

Appearance Orientation

1. Before going out in public, I always notice how I look
2. I am careful to buy clothes that will make me look my best
3. I check my appearance in a mirror whenever I can
4. Before going out, I usually spend a lot of time getting ready
5. It is important that I always look good
6. I am self-conscious if my grooming isn't right
7. I use very few grooming products*
8. I usually wear whatever is handy without caring how it looks*
9. I don't care what people think about my appearance*
10. I never think about my appearance*
11. I take special care with my hair grooming
12. I am always trying to improve my physical appearance

*-items with a star are reverse coded

Appendix N

Weekly Time Log

Initials:_____

WEEK OF: _____

(Please record time in hours and minutes. Estimate the total time over the week. Not that you may not be spending any time on either of these areas, so mark in a zero if you didn't spend time on an area.

Self-Treatment Manual	HOURS	MINUTES
Time reading or re-reading manual	_____	_____
Time practising homework or other exercises in manual	_____	_____

Appendix O

Client Satisfaction Questionnaire (CSQ)

1. How would you rate the quality of service you have received?
a=excellent, b=good, c=fair, d=poor

2. Did you get the kind of service you wanted?
a=no, definitely not, b=no, not really, c=yes, generally, d=yes, definitely

3. To what extent did this program meet your needs?
a=almost all of my needs have been met, b=most of my needs have been met, c=only a few of my needs have been met, d=none of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him or her?
a=no, definitely not, b=no, I don't think so, c=yes, I think so, d=yes, definitely

5. How satisfied were you with the amount of help you received?
a=quite dissatisfied, b=indifferent or mildly dissatisfied, c=mostly satisfied, d=very satisfied

6. Did the services you received help you to deal more effectively with your problems?
a=yes, they helped a great deal, b=yes, they helped somewhat, c=no, they really didn't help, d=no, they seemed to make things worse

7. In an overall, general sense, how satisfied were you with the service you have received?
a=very satisfied, b=mostly satisfied, c=indifferent or mildly dissatisfied, d=quite dissatisfied

8. If you were to seek help again, would you come back to our program?
a=no, definitely not, b=no, I don't think so, c=yes, I think so, d=yes, definitely

Appendix P

Post-Experimental Questionnaire

We would now like some of your honest responses to how you perceived this manual

1. Were the different techniques, exercises, and suggestions in the manual helpful in reducing your problematic eating behaviours?

2. Were the different techniques, exercises, and suggestions in the manual helpful in improving your relationships with other people?

3. Did the manual impact on your mood? If so, how?

4. Did the manual impact on your feelings about yourself? If so, how?

5. What was the most useful part of the manual in your opinion?

6. What was the least useful part of the manual in your opinion?

7. Please list all sources of extra help (i.e., new friendships, clergy, medical doctors, psychiatrist, psychologist, social worker, spiritual aid) that you received during the research. Please note which helped or hindered your progress

Appendix P (contd.)

Person	Helped or hindered	#contacts	length of contact
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(Please add in extra names if there is no space left)

8. We would now like to know your estimate of how much time (weekly) on average you put into reading the manual, thinking about information in the manual, and doing exercises/questionnaires in the manual.

_____hrs/week

9. Did you put in more time on the manual during the beginning, middle, or end of the package?

_____

10. On a scale of

1..... 10

did all readings/exercises did none of the readings/exercises

How would you rate your participation in this program?_____(please be honest)

11. If you wanted to give some advice to the creators of the manual, what would it be?

_____

_____

_____

_____

12. Did your definition of a binge and of a purge change over time?

_____

_____

_____

Appendix Q

Phone Screening Check-List

Binge Eating (y/n)_____(eating amount of food which nearly everyone would describe as excessive, and feeling out of control or unable to stop while eating)
Frequency _____/week
Over-concern with shape and weight (y/n)(anxiety about weighing, avoidance of looking in mirror, being seen naked with lights on, feeling that ones thighs are much larger than one knows they actually are)

Vomiting (y/n)	Frequency_____/week
Laxative use (y/n)	Frequency_____/week
Diuretic use (y/n)	Frequency_____/week
Dieting (y/n)	Frequency_____/week
Fasting (y/n)	Frequency_____/week
Enemas (y/n)	Frequency_____/week
Exercise (y/n)	Frequency_____/week

Height:_____
Weight:_____
****
Name:_____
Age:_____
Address:_____
_____
Phone: (H)_____
(W)_____

Appendix R

Explanation of Project
(contingent on bulimia diagnosis)

My name is Norah Vincent and I am a Ph.D. student in psychology at the University of Manitoba. As part of my degree requirements, I am conducting a study looking at helping women who are dissatisfied with their bodies and who feel out of control with their eating. This research tests the effectiveness of a new type of therapy or help. I will tell you about the project and then I can go over some of the details associated with participating, so that you can make an informed decision. Please feel free to ask any questions as we go along.

The treatment consists of a carefully designed self-help workbook or manual written by an international expert in this area. The book is composed of several sections which include learning more about binge eating (including the effects on you), learning about different weight control methods (and how effective they are), finding out about what your particular triggers are for binge eating, reading about different types of treatment for these problems (and what is effective or not), monitoring your eating, establishing a pattern of regular eating, stopping vomiting/laxatives etc., problem solving and taking stock of your progress, tackling dieting and avoidance of eating, preventing relapse, and working on other problems (self-concept, mood).

Working through the exercises on the book each week typically takes 15 weeks (about 4 months). By working through the book, you get exposed to a lot of readings, as well as pictures, graphs, and exercises. So, this is what the self-treatment is all about. The philosophy underlying this workbook is that a lot of our dissatisfaction about our bodies comes from the messages we receive on TV and in magazines. As women, we receive messages about how we should look and how we should act. Most advertisements and commercials portray very slender, attractive women. Many of us start to believe that only those who are slim and in control of their weight are attractive and o.k. as people. The problem is that this is pretty hard on us, because weight is really hard to change, no matter how much you want to. This workbook focuses on helping women to modify some of their beliefs about what is and is not attractive and it lays out a plan for women to regain control over their bodies and their lives.

The package lasts about 15 weeks and you should be available to meet with me on 4 occasions in-person as well. Once before we get started (in a week or two), once after you've finished the program (in 15 weeks), and once 6 months, and 1 year down the road after you've finished things. The purpose of meeting with me is so that we can evaluate how well you are doing. During these meetings, you will be asked to fill out several questionnaires and to talk with me in-person about your problems with eating.

During the course of the study, we ask that you refrain from seeing a therapist about these issues unless you really need to. We ask that you try not to talk to other helpers about these problems (such as a social worker, church pastor, psychologist, or psychiatrist) during this time. However, you will have access to a number in which you can call and talk to me if you have any questions or concerns before or during treatment, or if you require some additional support. Only you can decide if this seems like something that you would want to commit to or feel comfortable with.

Appendix R (contd.)

You will get more out of this if you put a lot of time and energy into it. Others who complete programs like this generally find that 3 hours per week is the minimum amount of time that they need to commit to obtain positive results. During the program, you will be asked to mail in weekly exercises to me in self-addressed envelopes which will be provided to you. It is essential that you feel that you can be consistent in doing and mailing in these exercises. We ask that you think carefully whether or not you have the time to participate in this kind of a program. Another thing we should discuss is the cost of this program.

Because it is an exploratory project, we have decided not to charge participants. Although we are not charging for our services (and you can keep the workbook when you are done), we ask that you write us a cheque for $60 to guarantee us that you will finish the program to its completion. At the end of the study (15 weeks workbook, and then one additional meeting 6 months later), we will return your cheque to you. If you drop out of the study before its completion, we will send your cheque to a charity of your choice. How does that sound to you?

The next step is that we should arrange a time to meet (2 hours) to further discuss the project, and see if you would benefit from this approach. At our meeting, we will ask you to complete a questionnaire package, to talk with me for awhile about your eating, and to get your height and weight measurements. If after meeting, you or I feel that you could be better helped elsewhere, we can talk about other therapy options for you.

Appendix S

Wide-Range Achievement Test-Revised

Reading only (Investigator adminsitered)

WIDE RANGE ACHIEVEMENT TEST • REVISED LEVEL 2

Page 4 — Reading, Level 2

Two letters in name (2)	A	B	O	S	E	R	T	H	P	I	U	Z	Q	(15)

milk	city	in	tree	animal	himself	between	chin	split	24
form	grunt	stretch	theory	contagious	grieve	toughen	aboard		32
triumph	contemporary	escape	eliminate	tranquillity	conspiracy				38
image	ethics	deny	rancid	humiliate	bibliography	unanimous			45
predatory	alcove	scald	mosaic	municipal	decisive	contemptuous			52
deteriorate	stratagem	benign	desolate	protuberance	prevalence				58
regime	irascible	peculiarity	pugilist	enigmatic	predilection				64
covetousness	soliloquize	longevity	abysmal	ingratiating	oligarchy				72
coercion	vehemence	sepulcher	emaciated	evanescence	centrifugal				78
subtlety	beatify	succinct	regicidal	schism	ebullience	misogyny			83
beneficent	desuetude	egregious	heinous	internecine	synecdoche				89

WRAT·R² — Raw Score to Grade Equivalents — JASTAK ASSESSMENT SYSTEMS

	READING																					
RS	1-30				35			40			45			50			55			60			65-69
GE	Below 3	3B	3E	4B	4E	5B	5E	6B	6E	7B	7E	8B	8E	9B	9E	10B	10E	11B	11E	12B	12E	Above 12

SEM = 2

Appendix T

Consent Form

We are from the University of Manitoba's Dept. of Psychology. We would like you to participate in a research project investigating the effectiveness of a self-treatment program for women with eating and weight-related problems. The goals of the study are to determine whether this type of intervention is helpful for women and to find out what factors within the treatment are most useful. The package is made up of several parts. Some of the topics covered are (1) managing your problems with eating, shape, and weight--this involves charting and monitoring where, how, and with whom you eat (2) starting to substitute in different things to help avoid over-eating (3) fine-tuning your problem-solving skills (4) information on eating/weight/shape change (5) working on your self-image, anxiety, and your mood.

Your participation in this research requires that you be available and willing to complete and mail-in weekly exercises which will include charting and monitoring a variety of situations (i.e., your eating habits, thoughts, and beliefs). Participants should expect to spend approximately 3-4 hours per week on workbook activities. Mid-way through the treatment, I will be calling you to check on how you are doing with the program. After the 15 week treatment, 6 months, and 1 year later, you will be asked to meet with me again and complete several questionnaires. The purpose of doing so is to examine whether gains made in treatment are long-lasting in effect.

We feel that it is important that you are aware of possible risks associated with participating. It is common for individuals working on these issues to experience an initial increase in anxiety and sadness as you begin to look at some of your feelings and thoughts about yourself. It is possible that your binge eating and purging (i.e., vomiting, laxative use, exercising, diuretic use) might initially increase while in this program, however, it is unlikely that this will continue much past the first several weeks. Other possible risks associated with participating pertain to how you tend to manage disappointment and failure. Some people who do not improve in self-treatment programs blame themselves, and leave such programs feeling defeated and hopeless. Others mis-understand instructions and either harm themselves or are unaffected by treatment. In cases where there is confusion about what you are to do, please use the contact person listed below to check on things you are uncertain about. Either way, failure to improve should not be blamed on yourself as there are many reasons which could account for this (e.g., treatment is not effective, timing is wrong for you). Advantages of participating in this study are that the treatment you will receive has been thoroughly tested with individuals seeking in -person services and has been found to be the most effective form of help for these types of problems. Others who have completed this program while working with therapists have experienced the following as a result of treatment: fewer binge eating sessions, fewer purging attempts, less depression, and higher self-esteem. Other favourable aspects of this research include its low cost and easy accessibility. This program is offered to you, with a minimal waiting period, to be used in the privacy of your own home, and is what we feel to be a very effective tool for helping you to help yourself. This workbook is available for you to use during this research, but also at any time in the future when you may need it. The workbook is yours to keep.

Your participation in this research is completely confidential. Your name and your mail-in sheets will be kept in a locked filing cabinet at an office in the University of Manitoba. Only the primary

Appendix T (contd.)

investigation (Norah Vincent) will have access to this information.

If you choose not to participate in this research, alternative treatments are available to you. If you decide to participate, your participation is entirely voluntary and you are free to withdraw from the study at any point in time (although your cheque will not be returned). If there are questions about the study, you are asked to contact myself (Norah Vincent; 474-9222). You will also have the opportunity to receive individualized feedback about the results of this study by mail.

Thank you for considering this program. If you agree to participate after reading the above, please sign your name below.

I,_____, having read the consent form, agree to participate in this self-treatment program. I understand that all responses are confidential and that I may decline to respond to questions and may withdraw from the study at any time.

_____	_____
Date	Participant signature
_____	_____
Date	Norah Vincent Primary Researcher Dept. of Psychology University of Manitoba
_____	_____
Date	Dr. Michael LeBow, Ph.D., C.Psych. Research Advisor Dept. of Psychology University of Manitoba

Appendix U

Debriefing Form

The purpose of this study was to determine the effectiveness of a self-treatment program for those with eating and weight-related difficulties. Different people in the study started using the manual at different times. The decision of when to start particular people was based on trying to accommodate the schedules of participants. We staggered the start time for different individuals in this research project to compare responses of those who started immediately to those who waited several weeks to begin (and who were self-monitoring in the mean time). Although we could have let every participant begin with the manual at the same time, it was necessary to place some people on the self-monitoring only instructions to determine how effective the treatment was compared to simply self-monitoring.

If you have any further questions about the study, please contact me at the University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2 (204)(474-9338). Thank you for participating in this research.

Sincerely,

Norah Vincent

Appendix V

Subject Feedback Form

Thank you very much for participating in the self-treatment study. Whether or not you completed the manual, you can be very proud of your hard work. I thank you very much for taking valuable time out of your life for this research. I will now provide you with some feedback regarding the nature of the study. The study explored the effectiveness of a self-treatment program for women with eating, shape, and weight-related struggles. One of the goals of research in clinical psychology is to design and provide accessible, safe, and effective help for people in psychological distress. Without research examining how effective treatment is, little can be done to improve existing treatments and create new, more helpful ones. Self-treatment packages for eating and weight-related problems are few and have not been empirically tested or tested in a research project like this one. Results of these studies show that women who go through this kind of a program with a therapist are able to see a number of positive changes in their eating habits, self-esteem, mood, and in their relationships with others. Thus, this approach is thought to be quite successful in helping people with these kinds of concerns in an in-person format. Your participation in this study will allow us to discover whether these outcomes can also be extended to a self-treatment modality.

Numerous cut-backs to our healthcare system have made getting help for eating and weight-related issues next to impossible due to long waiting lists and/or high costs. Some women who finish in-person treatment for the issues you have been working on find that their symptoms and problems return after therapy has finished. These women relied on the therapist to help them with their problems and when they experienced stress after treatment, were unable to cope successfully without a therapist. This self-treatment program was designed to be available to people who need it, to be low cost, and to provide women with something which is lasting. You may find, and should expect, that some stressful life event may trigger a binge eating episode in the future. At that time, you can feel confident that you have the means to help yourself. Just pick up the book and start working through some of the exercises again.

Unfortunately, this is all I can tell you about this study thus far, however, I anticipate being finished analyzing the data in the next several months, at which time, I would be happy to send you a copy of the results of the study. If you are not interested in learning of the results, please advise me by phone or mail.

If you would like to further talk about some of your feelings or would like some help in dealing with them in-person, the following resources are available to you. These are the Psychological Services Centre on the Fort Garry Campus at the University of Manitoba (474-9222), Klinic crisis line (786-8686), the Fort Garry Women's Resource Centre (269-6836), Women's Health Clinic (474-9517), and the Health Sciences Centre Eating Disorders Program (787-1882). I will also be happy to provide you with individual therapy at the Psychological Services Centre, should you require some extra help after completing this study. Thank you again for participating in my study and good luck with your future endeavours.

Appendix X

Reasons for Discontinuation Form

Thank you for participating in the Self-Treatment study. We respect that you are no longer interested in participating. It would greatly assist us however, if you would complete this form and mail it back in the self-addressed envelope provided. Thank you. Please check more than one response if needed.

1. My reasons for dropping out of this research are:

a) lack of motivation _____
b) fatigue _____
c) change in residence _____
d) problems getting worse _____
e) problems with physical health _____
f) family problem _____
g) problem with partner _____
h) problem with friend(s) _____
i) getting help elsewhere (in-person) _____
j) getting help elsewhere (self-help) _____
k) mailing was too bothersome _____
l) lacked confidence in approach _____
m) change in work responsibilities _____

2. Other questions or concerns I have are:_____
_____
_____
_____

Appendix Y

Scoring and Psychometric Properties of ACQ

Scoring

The ACQ protocols were rated by two advanced undergraduate psychology majors at the University of Manitoba. Raters had 3 hours of training in scoring protocols prior to beginning the rating of protocols in the study. Protocols were scored by first identifying (i.e,. bracketing) individual thought units associated with each protocol and then by categorizing each unit into one of 23 mutually exclusive categories, each associated with one of three higher-order sub-scales (i.e., WOR_{pos}, WOR_{neg}, $WOR_{neutral}$). The raters and the primary investigator met intermittently to discuss scoring difficulties and to prevent scoring drift. In instances where the two raters could not agree on a rating (n = 2 instances), the primary investigator resolved disagreements.

Inter-Rater Reliability

Inter-rater reliability of the ACQ was assessed by comparing ratings of two independent raters at the level of the 23 categories of responding. Using a sample of 6 clinical subjects, kappa from the 23X 23 matrix was .72. When responses from the 23 modes were re-coded into one of 3 sub-scales (WORpos, WORneg, WORneutral), the kappa between two raters was .80.

Test Re-Test Reliability

One month, test re-test reliability of the ACQ was examined in a pilot study using 30 undergraduate student volunteers in psychology at the University of Manitoba. Pilot subjects completed the ACQ, Modified Distressing Thoughts Questionnaire (MDTQ)(Clark, Feldman, & Channon, 1990), the Coping Strategy Indicator (CSI)(Amirkhan, 1990), and the Bulimia Test-Revised (BULIT-R)(Thelen et al., 1990) to obtain course credit, and then returned 4 weeks later to re-do the ACQ and complete a short questionnaire inquiring into recent stressful events. Of pilot participants, 7 reported binge eating. As the number of subjects completing the ACQ was small, it was decided to include baseline data from clinical subjects in this analysis. Two clinical subjects did not have ACQ data available from weeks 1 and weeks 4, which effectively left 15 subjects for this analysis. Test re-test reliability of the WORtotal scale was assessed using Pearson correlations and found to be $r(15) = .76$, $p = .001$.

Validity

The validity of the ACQ was assessed in the same pilot study by comparing scores on the ACQ with scores on the CSI sub-scales. Due to the small number of pilot subjects, pre-treatment data obtained from clinical subjects was also used for this analysis. It was expected that WORtotal would be positively associated with the "problem-solving" sub-scale of the CSI, and negatively correlated with the "avoidant" sub-scale of the CSI. Although not significant, results showed that WORtotal was positively associated with CSIprob $r(15) = .15$, $p = .60$, but also positively associated with CSIavoid $r(15) = .23$, $p = .42$.

Appendix Z

Cost-Effectiveness Calculation

Cost-Effectiveness = Costs/effectiveness

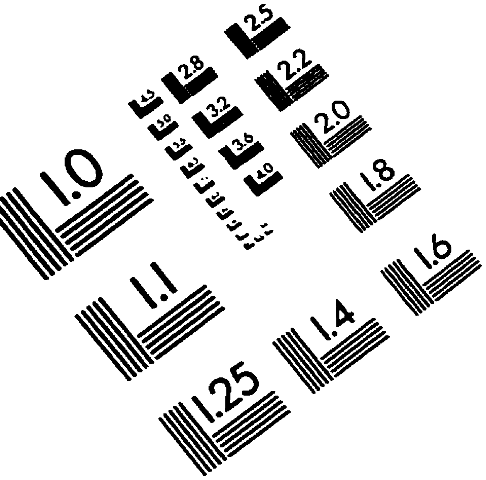
Costs

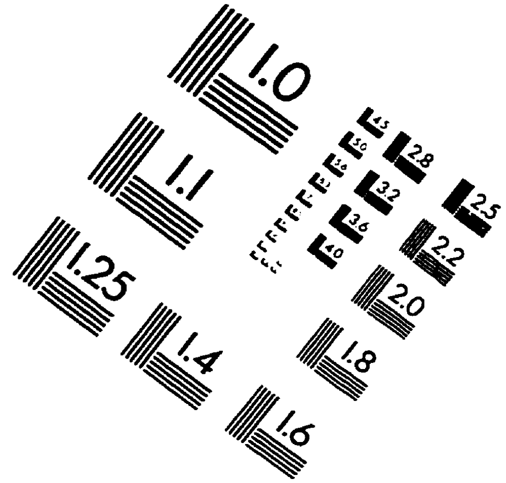
= wages for personnel ($40/hr)(includes 3 hours per intake, phone-time, in-person appointment time)
= facilities (office space)(valued at $10.00 per hour)
= materials (manual valued at $25.00; interest on this amount at 2% valued at .50; photocopying self-monitoring forms valued at .10/sheet)
= client time (time reading manual, doing assignments and exercises; conceptualized as opportunity cost or wages which could be obtained during this period; valued at $8.00/hour)

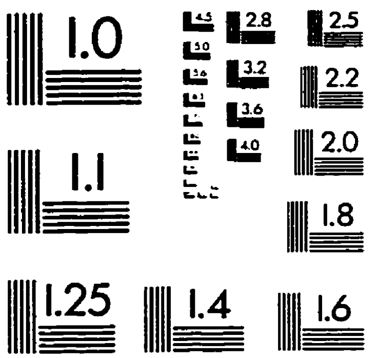
Effectiveness

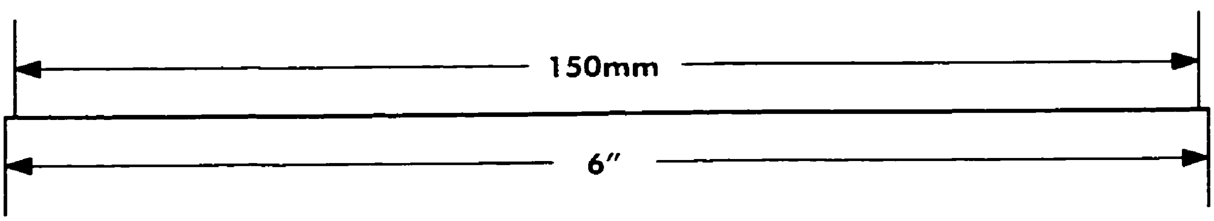
= (mean binge frequency/day + mean purge frequency/day)$_{\text{pre-treatment}}$ -
(mean binge frequency/day + mean purge frequency/day)$_{\text{post-treatment}}$

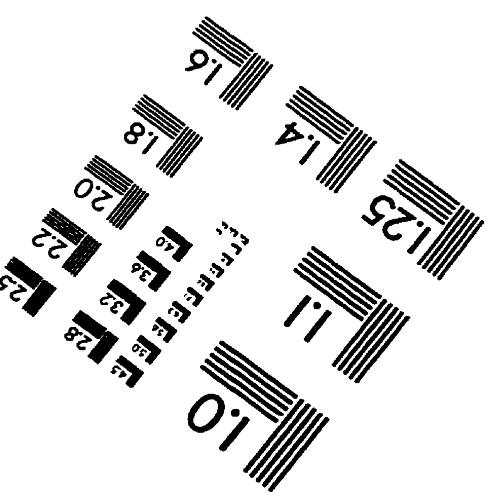
IMAGE EVALUATION TEST TARGET (QA-3)

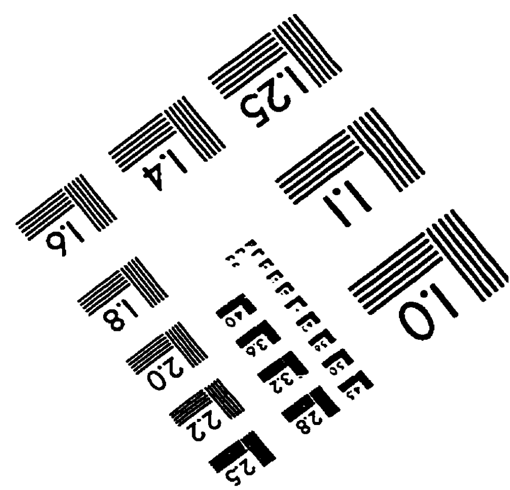












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