A COMPARISON OF GROUP AND INDIVIDUAL APPROACHES TO THE COGNITIVE-BEHAVIORAL TREATMENT OF BULIMIA

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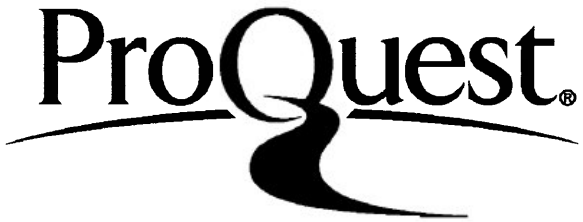

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ABSTRACT

The current study is a comparative investigation of two treatment approaches to the eating disorder bulimia. A cognitive-behavioral group therapy approach was compared to a cognitive-behavioral individual psychotherapy approach. Eight subjects participated in group therapy while seven were involved in the individual mode. Group sessions lasted for approximately 90 minutes and occurred once weekly over a period of 8 weeks. Individual sessions were approximately 50 minutes in length, also occuring once each week over 8 weeks. Assessment measures were administered at pre-treatment, post-treatment and at 12-16 week follow-up. Quantitative examination of the results revealed undifferentiated rates of change across the two treatment groups. A conclusion that the two forms of treatment delivery are similarly effective in the treatment of bulimia is thought to be premature in light of the limitations of the study.

INTRODUCTION

The prevalence of bulimia among young women has brought the need for effective methods of intervention to the attention of clinicians and researchers alike. Bulimia is predominently characterized by uncontrollable urges to eat excessive quantities of food. The indulgence of such urges results in episodes of binge eating. In the more extreme cases, binges are followed by the use of laxatives, diuretics, amphetamine abuse, fasting and self-induced vomitting to relieve both psychological and physiological discomfort. Other diagnostic criteria include (i) an awareness that the eating pattern is abnormal and fear of not being able to stop eating voluntarily; (ii) depressed mood and self-deprecating thoughts following the eating binges (American Psychological Association, 1980). Bulimics do not emaciate themselves to the point frequently observed in cases of primary anorexia nervosa. In fact, many bulimics incur minimal weight loss (Stevens and Salisbury, 1984).

The incidence of binge eating in a variety of samples has been reported between 3.8% to 20% of the respondents (Cooper and Fairburn, 1983; Halmi, Falk

and Schwartz, 1981; Pyle, Mitchell, Eckert, Halvorson, Hermen and Goff, 1983; Stangler and Printz, 1980). During a single binge, subjects have recorded consuming between 1,200 to 11,500 calories, with a mean caloric intake of 3,415 calories (Mitchell, Pyle and Eckert, 1981). Of these same respondents 1% to 1.7% report self-induced vomiting on a weekly basis. These subjects purged in the range of 1 to 98 times per week (Fairburn, 1981; Geller, Kelly, Traxler and Marone, 1978; Ordman and Kirschenbaum, 1985; Schneider and Agras, 1985; Stevens and Salisbury, 1984).

TREATMENT APPROACHES

A variety of approaches to the treatment of bulimia have been investigated in an attempt to improve upon the generally poor prognosis for bulimics (Fairburn,1981). Most efforts can be described as either pharmacological, femininist experiential-behavioral, cognitive, behavioral, cognitive-behavioral or eclectic. These investigations have increased our knowledge about the etiology, phenomenology, and treatability of bulimia. A synopsis of each orientation is presented.

Pharmacological Treatment

Drug therapy was introduced as a further treatment to assist patients gain control over urges to eat excessively. The use of and interest in pharmacotherapy for treating bulimia was initially sparked by the frequent observation of mood disturbance in bulimics (Johnson, Stuckey and Mitchell, 1983). Medications under investigation are largely those believed to possess thymoleptic or mood altering properties. Antidepressants are the most researched family of medications. Some of the other drugs investigated to date include: tricyclic antidepressants such as mianserin (Sabine, Yonance, Farrington et al., 1983), imipramine (Pope, Hudson, Jonas et al., 1983), desipramine (Hughes, Wells, Cunningham et al., 1985), and amitriptyline (Mitchell and Groat, 1984); anticonvulsants in the form of phenytoin (Green and Rau, 1974; Wermuth, Davis, Hollister et al., 1977); MAO inhibitors such as phenelzine (Walsh, Stewart, Roose et al., 1984); lithium carbonate (Hsu, 1984); and carbamazepine (Kaplan, Garfinkel, Darby et al., 1983).

Results of outcome studies have been varied. Some investigations have used the optimal double blind design while others have not. Consequently,

many of the successes reported can only be considered observational and interpreted with caution. A further difficulty plaguing pharmacological research efforts is the problem of treatment compliance. Specifically, drug absorption may be interfered with or hindered because of the purgative behaviors observed in bulimics (eg. self-induced vomiting and laxative abuse). As well, the poor dietary habits of bulimics may make the prescription of drugs, such as MAO inhibitors, a dangerous practice.

In spite of the reported difficulties several drugs have emerged as effective alleviators of bulimic symptoms. In particular, antidepressants, such as imipramine, and MAO inhibitors have been shown to be effective in stabilizing moods and reducing the incidence of binges and purges (Hudson, Pope and Jonas, 1984; Johnson, Stuckey and Mitchell, 1983; Pope, Hudson, Jonas and Yurgelun-Todd, 1983; Pope and Hudson, 1982). The underlying mechanism producing these changes however, remains unknown.

Feminist Oriented Experiential-Behavioral Therapy

A second treatment approach reported in the literature is that of feminist oriented experiential-behavioral therapy (Boskind-Lodahl and

White, 1978; White and Boskind-White, 1981). This group therapy program has as its focus the feminist oriented philosophy of its originators. Specifically, it is asserted that bulimia evolves because of women's desire to fit an unrealistic feminine stereotype. This contrasts with the previously held belief of many researchers and clinicians, that eating disordered patients reject their femininity. Drawing from the "pursuit of femininity" model White and Boskind-White (1981) devised an action oriented, present-centered therapy program. Issues addressed during therapy include cultural pressures to be thin, the need to take personal responsibility in life, understand relationships with men and regain inner strength and personal power.

Results using a waiting list control demonstrated the feminist experiential/behavioral program to effectively reduce some relevant personality dimensions (eg. self-sufficiency), as well as, Body Cathexis or body image perception scores. Unfortunately, these improvements were not maintained at follow-up (Boskind-Lodahl and White, 1978). Results of a later study, using the same program in a slightly different format, demonstrated improvement on several measures including the Body Cathexis Test. Changes were maintained at follow-up in 10 out of 14 cases. A

control group was not employed in this study thereby reducing the ability to attribute changes to the program itself.

Behavior Therapy

Behavioral approaches to the treatment of bulimia have as their focus the maladaptive eating patterns observed in bulimics. These behaviors include excessive dieting, binge eating and purging. Several behavioral schools of thought offer explanations for the development and maintenance of the disorder. For example, the anxiety reduction model holds that vomiting has negative reinforcement value and therefore encourages binge-eating. Consequently, the main focus of therapy is on the prevention and elimination of vomiting (Rosen and Leitenberg, 1985). In contrast, a second school of thought, the interpersonal stress model, proposes that upsetting emotional or stressful events trigger the urge to binge and that vomiting behavior is simply a further way to relieve negative feelings following a binge (Clement and Hawkins, 1980). Therapy therefore seeks to eliminate binge eating as a response to stressful events and concentrates on helping clients to develop new more effective coping techniques. A third model, which also focuses on binge-eating as the primary

target problem, is the eating-habit control model (Johnson and Brief, 1983; Rosen and Leitenberg, 1985). In this view, the problem is attributed to a lack of knowledge of the appropriate eating and activity levels required for maintenance of a 'normal' weight. Consequently, therapy focuses on education, the elimination of dieting as a response to weight gain, and the establishment of appropriate eating and exercise habits.

Studies conducted using the anxiety reduction paradigm have demonstrated moderate success. Rosen and Leitenberg (1982), using a single subject design across a variety of food groups, found that the amount of food consumed prior to the urge to vomit increased across treatment exposures. By the end of treatment vomiting was virtually eliminated and binge eating stopped. Hsu and Holder (1986) devised and delivered a treatment program based on a model which essentially combined both the eating-habit control (Johnson and Brief, 1983) and interpersonal stress models (Clement and Hawkins, 1980). The program was comprised of dietary instructions, the recording of food intake, binges and purges.

The identification of binge triggers was a strategy of treatment. Likewise so were the

development of alternative strategies to binging-purging and the identification of specific interpersonal problem areas. At follow-up, a mean of 20.0 months following termination (either through drop-out or end of treatment), 46% reported good outcome representing less than one binge episode per week. A control group was not implemented but completers were compared to non-completers.

Cognitive Therapy

Cognitive factors have been identified as playing a large role in the development and maintenance of bulimia. Thus cognitive theory offers the notion that bulimics have maladaptive attitudes and beliefs about eating, food and weight (Fairburn, 1985). Bulimics have been identified as having distinctively different cognitive styles than non-bulimic controls (Fremouw and Heyneman, 1983). Specifically, they were found to evaluate themselves more critically or negatively than the comparison group and to think more dichotomously.

Outcome studies examining the effects of cognitive restructuring alone in the treatment of bulimia have met with minimal success. In one study, cognitive restructuring was compared to cognitive

restructuring plus response prevention (Wilson, Rossiter, Kleifield and Lindholm, 1986). In the verbal cognitive method, subjects were assisted in identifying dysfunctional beliefs regarding binging and vomiting, challenged on these and helped to replace them with more functional thoughts. In the response prevention method, subjects brought in to treatment their typical binge food and requested to eat to the point where they felt the urge to vomit. Therapists then used cognitive restructuring techniques to assist subjects overcome the urge to vomit. Results demonstrated cognitive restructuring plus response prevention to be significantly more effective in reducing binge eating and vomiting than cognitive restructuring alone. As well, scores on other measures of psychopathology including the Beck Depression Inventory, and Rathus Assertiveness Scale were more significantly reduced for those receiving the combined program.

A further study investigating the differential effectiveness of cognitive restructuring and response prevention was conducted by Rossiter and Wilson (1985). Results of this study demonstrated response prevention alone to be more effective in reducing binge eating and vomiting than cognitive restructuring. Both of these studies used small sample

sizes and therefore have related methodological limitations.

Cognitive-Behavioral Therapy

While studies employing behavioral and cognitive strategies alone have met with limited success or at best varied outcomes, investigations combining the two have been more consistently successful in reducing bulimic symptoms. Cognitive-behavioral therapy in the treatment of bulimia combines a cognitive element, which assists bulimics in developing more realistic and adaptive attitudes toward food, their bodies, and personal standards, with a behavioral element. The behavioral component focuses on the consumption of food and breaking the binge-purge cycle.

Findings of research studies using cognitive-behavioral therapy have resulted in more enduring changes across a broader spectrum of behaviors, thoughts and attitudes (Fairburn, 1981; Kirkley, Schneider, Agras and Bachman, 1985; Ordman and Kirschenbaum, 1985; Schneider and Agras, 1985; Stevens and Salisbury, 1984). For example, in a study conducted by Ordman and Kirschenbaum (1985) twenty subjects received either full cognitive-behavioral

intervention or a brief waiting list control. The elements of the full intervention consisted of cognitive restructuring, exposure with response prevention, behavioral contracting and process oriented psychotherapy. Results indicated significant improvement in binge-purging, on the Eating Behavior Test, Eating Attitudes Test, Binge Questionnaire, Beck Depression Inventory and Symptom CheckList-90 Global Severity Index scores. These findings are reflective of the more expansive changes brought about through cognitive-behavior therapy. Follow-up assessments were not included and so the long term effects of the program cannot be ascertained.

A further study compared cognitive-behavioral therapy to that of a brief structured (short form focal) psychotherapy (Fairburn, Kirk, O'Connor and Cooper, 1986). Assessments were made at pre and post treatment, as well as 4, 6 and 12 month follow-up. While patients in both groups made and maintained significant changes through to 12 month follow-up, those having received the cognitive-behavioral treatment had significantly greater improvement on a number of measures including "overall clinical state, general psychopathology, social adjustment and subjective state" (p.639). A final comparative study

found cognitive-behavioral group therapy to more effectively reduce binge and vomiting behavior than non-directive group therapy (Kirkley, Schneider, Agras and Bachman, 1985). Subjects in the cognitive-behavior group therapy were given specific behavioral recommendations to help in changing eating and vomiting behavior. The nondirective group did not receive these suggestions. Fewer dropouts were observed and the incidence of binge and purge episodes was significantly lower in the cognitive behavioral group than in the nondirective group at three month follow-up. Results on the other dependent measures demonstrated undifferentiated significant reductions for the two groups.

Eclectic Treatment

As demonstrated above, many therapy programs combine elements from each of the behavioral and cognitive schools to create cognitive-behavioral programs. Eclectic programs are also observed in the treatment literature. These programs typically draw from more than the cognitive and behavioral schools. A program which exemplifies the eclectic approach is that utilized by Lacey (1983). Here a short term outpatient treatment program was delivered to a group of 30 women. Six groups of 5 subjects were run. The

program is described as eclectic in that it incorporated behavioral, counselling and psychodynamic elements, as well as, group and individual sessions. Subjects who received the treatment program, in contrast to those who were in the control program, showed greater improvement. After the control group received treatment, 24 of the 30 subjects were reported to have stopped binge eating and vomiting. At long term follow-up (up to 2 years) 20 subjects remained abstinent.

Methodological Issues Raised in the Literature

Combination programs pose a problem in that treatment outcomes are the result of the whole program and the therapeutic effectiveness of specific components cannot be readily ascertained. Needed are controlled investigations which measure treatment effectiveness and isolate key therapeutic ingredients.

In respose to this need, Kirkley et al. (1985) conducted a study to examine the effectiveness of behavioral recommendations for change. Included were recommendations such as: increasing eating regularity; delay vomiting; increasing the variety of foods eaten; and altering the vomiting ritual in some way.

A treatment group employing behavioral strategies for change was compared to a similarly structured group without behavioral change strategies. Both groups reduced binge and purge episodes; however, only the behavioral group changed significantly. The two groups were equally successful in improving scores on cognitive and emotional scales/tests. The authors conclude from this that the cognitive-behavioral treatment "has a specific impact on behavior change, which is independent of cognitive and emotional variables" (p.47). Without having included a compliance check, however, they cannot conclude from the study which particular behavioral components of the program were responsible for the changes observed.

As a therapeutic component, delivery mode has received little in the way of empirical attention. Throughout the treatment research examples of both individual and group therapy are found. Behavioral programs typically employ individual delivery due to the nature of the programs utilized (Geller, Kelly, Traxler and Marone, 1978; Hsu and Holder, 1986; Kenny and Solyom, 1971; Rossiter and Wilson, 1985). Pharmacological studies also employ individual treatment (Green and Rau, 1974; Hudson, Pope and Jonas, 1984; Kaplan, Garfinkel, Darby and Garner,

1983; Pope et al., 1983; Walsh, Stewart, Wright, Harrison, Roose and Glassman, 1982). Cognitive-behavioral treatment programs have employed both group and individual formats. Studies typically, incorporate one or another method of delivery without providing a rationale for doing so.

Many of the therapy programs used represent adaptions of the cognitive behavioral program and approach established by Fairburn (1981). Results of Fairburn's original study which employed an individual treatment approach were highly successful. Less than one bulimic episode was reported during a 4 week period after 28 weeks of individual therapy. At 12 month follow-up improvements were maintained by 5 of 6 subjects. This program was later adapted to a group setting by Schneider and Agras (1985). Results of this study were successful but not to the same extent as those of Fairburn. Schneider and Agras (1985) offer several explanations as to why their results do not meet the same improvement levels as those of Fairburn. These explanations include the fact that their subjects reported more severe symptoms, a longer duration of illness and were not, during the course of therapy, presented with specific relapse prevention strategies. While these explanations are plausible ones, it also seems

possible that differential success rates may have been brought about through other factors attributable to the group versus individual therapy experience. The differential effectiveness of group versus individual delivery of therapy in the treatment of bulimia has yet to be empirically examined.

In the study conducted by Kirkley et al. (1985) a nondirective group treatment was compared to a cognitive-behavioral group treatment. At follow-up 38% of those treated with cognitive-behavior therapy were abstinent from binging and purging. These results were then compared to the 0% abstinence rate observed in Pope et al.'s (1983) pharmacological treatment of bulimics and also to the 82% abstinence rate observed by Fairburn. The authors acknowledge the methodological, population and treatment differences which exist between the studies but pose several interesting questions. In particular, Kirkley et al. (1985) note that the question of how group treatments can be enhanced to meet the follow-up/maintenance success reported in individual treatments needs to be addressed.

The current study represents an attempt to examine the differential effectiveness of two modes of cognitive-behavioral therapy in the treatment of

bulimia. A group delivery of a cognitive-behavioral program is compared to individual delivery of the same program. The therapy program, cognitive-behavioral in content, most closely resembles the treatment strategies of Fairburn (1981) and Schneider and Agras (1985).

METHOD

SUBJECTS

Subjects were solicited through community physicians, the Lakehead Psychiatric Hospital and Lakehead University. Local media including radio, television and newspaper advertisements were used to announce the availability of therapy for bulimics.

All referrals were interviewed individually to determine if a diagnosis of bulimia, according to the DSM III criteria, was appropriate. Fifteen bulimic women participated in the present investigation. All subjects included in the study reported at least one binge-purge incident per week and were found to be medically healthy with no current reports of suicidal ideation.

The mean age at time of treatment was 23 years with an age range between 17 and 36 years. Duration of illness ranged from 6 months to 12 years, with a mean of 4.2 years. At presentation, the mean frequency of binge-purge incidents was seven per week. A breakdown of descriptive data across the two treatment groups is provided in Table 1. Group 1 is comprised of those individuals taking part in the group treatment and Group 2, those who completed the program on an individual basis.

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insert Table 1. here

Of the 15 subjects taking part in the study 12 were single, 1 divorced and two married. The majority lived on their own while 6 were living with their parents. Nine of the bulimics were students; one a computer supervisor; three childcare workers; one a salesperson; and one currently unemployed. Two had completed highschool, five were enrolled in college, seven in university and one a Master's graduate.

Table 1. Descriptive data for Groups 1 and 2.

STATISTIC	GROUP1 n=8	GROUP2 n=7	T-TEST
$\bar{x}$ age onset of dieting	16.5	14.0	1.56
$\bar{x}$ age onset of binging	20.0	16.1	1.78'
$\bar{x}$ age onset of purging	21.1	18.6	1.28
$\bar{x}$ age at treatment	26.9	21.7	2.08*
$\bar{x}$ duration of illness	5.3	3.4	.97

' = marginally significant $p<.10$
* = significant $p<.05$

All fifteen subjects reported using self-induced vomiting as a purgative method, six used laxatives, one diuretics, 4 diet pills, 7 fasting and 11 used exercise as a method of weight control. The longest binge-purge free period reported since the onset of the disorder was 10 months, while the shortest 2 days. The average binge free period reported since onset of the disorder was 1 1/2 months.

Previous hospital admissions, diagnoses and treatment varied across the two groups. Of those taking part in the group modality 3 had previous hospital admissions for eating disorders and 1 had received counselling for depression. Of those receiving individual therapy, 1 subject had previously been hospitalized for an eating disorder and had a second admission for a suicide gesture. A second subject had been treated in hospital for alcoholism. In all, 4 subjects had received previous diagnoses of anorexia nervosa, three of these subjects were in the group program and one in the individual treatment modality. Of the six who had received prior counselling for their eating disorder, five fell in the group modality and one in the individual.

ASSIGNMENT OF SUBJECTS TO TREATMENT GROUPS

In spite of numerous attempts to recruit subjects, referrals were irregular and candidates few. All told, it took 18 months to recruit 15 subjects, and therefore, it was not possible to randomly assign subjects to the two therapeutic groups. The first eight subjects were assigned to the group treatment while the next seven were assigned to the individual treatment modality.

TREATMENT APPROACH

Treatment was conducted on an outpatient basis at the Lakehead Psychiatric Hospital. Sessions for the group occurred once weekly and lasted for approximately 90 minutes over a period of 8 weeks. Individual therapy sessions also occurred once weekly over a period of 8 weeks but in contrast to the group time, lasted for approximately 50 minutes. It was believed that if 90 minute sessions were provided to subjects in the individual modality, the extra attention received by these subjects would bias the results in favour of the individual delivery of the program. Two therapists were involved in the delivery of the therapy. Therapist A, a registered psychologist and Therapist B, the author, a Masters

candidate.

(i) Cognitive-Behavioral Treatment Program

The cognitive-behavioral program used in therapy was designed by the author, for the treatment of bulimia. It is based on interventions described in the treatment literature and in particular draws from the program developed by Fairburn (1981) and Schneider and Agras' (1985) adaptation of that program. Overall goals of the program were (1) to provide subjects with an opportunity to openly discuss and understand their problem; (2) to educate subjects regarding healthy eating habits, 'normal' eating and eating disorders; (3) to alter maladaptive attitudes and thinking which serve to maintain the disorder; and (4) to interrupt the binge-purge cycle and reduce the frequency of binge-purges.

To increase the likelihood of achieving the therapeutic goals, each session involved (a) discussions focused around a pertinent topic and; the regular assignment of (b) behavioral and (c) cognitive homework.

Discussion Topics: The discussion topics were chosen because of their demonstrated relevance to the eating disorder field. Those chosen included: (i) the notion

that clients are not as isolated as they perceive themselves to be, that others do share and understand their difficulties; (ii) body image; (iii) the acceptance of a heavier than ideal weight and shape; (iv) self-esteem; (v) perfectionistic thinking; (vi) physiological aspects and consequences of bulimia; (vii) medications demonstrated to successfully treat bulimia; (viii) nutritional needs/ requirements; (ix) exercise; (x) family factors in the maintenance of an eating disorder; (xi) relationships and sex; (xii) and relapse prevention.

Behavioral Homework: The purpose of assigning behavioral homework was to provide subjects with an opportunity to gain eating self-control and to interrupt the binge-purge cycle. To encourage usage of the strategies and to maximize the number of coping strategies, subjects were exposed to one new 'trick' each week. In all 8 'tricks' were assigned and are as follows: (i) pre-planning a post meal activity; (ii) calculating the monetary value of all binges; (iii) eating all meals while sitting at a table and eating with utensils; (iv) carrying a 'motivator' card containing a list of three characteristics the subject likes in herself which are unrelated to her body image, food or exercise; (v) incorporating one 'bad' food into their diet; (vi) slowing down the eating

rate; (vii) planning to eat three meals each day; and (viii) 'permission' not to complete remaining food on their plate if they feel they are full.

Cognitive Homework: During weekly meetings, participants were required to examine and assess self deprecating thoughts and unrealistic expectations across a variety of areas (as previously described). Strategies for eradicating irrational thoughts and promoting positive cognitions were presented and to reinforce consideration and internalization of pertinent discussion material, cognitive homework, largely in the form of readings, was assigned. The cognitive homework included: (i) reminding themselves that they share this problem with many others and therefore are not alone; (ii) "Larger than Life" (Thompson, 1986), an article about body image distortion; (iii) a reading from 'Irrational Ideas which cause Disturbances' (Ellis, 1962) idea no. 2, "The idea that one should be thoroughly competent, adequate, and achieving in all possible respects if one is to consider oneself worthwhile" (p.63); (iv) also from Ellis (1962) idea no. 1, "The idea that it is a dire necessity for an adult human being to be loved or approved by virtually every significant other person in the community"; (v) a fable entitled, "Until I die" demonstrating our tendency to make

hasty judgements based on fragmented information rather than whole truths (Rajneesh,1976); (vi) An article entitled, "Interview with David Garner" (Allon, 1986), one component of which is a discussion of the myths surrounding obesity; (vii) a series of "principles" (Boskind-White and White, 1983) used by an eating disorder patient in her own recovery. For example, "Power= ...Don't say 'yes' when you really mean 'no'...; (viii) and several poems including 'With Apologies to David" (Anonymous), about an anorexic's fight with that disorder, "Self-Knowledge", pertaining to the need to grow, know oneself and refrain from evaluating ourselves and our souls according to any type of scale, and the last poem, about learning to rely on one's own internal infallible judge rather than the very critical, always thinking judge that tends to be in control most of the time.

(ii) Group Delivery of Treatment Program

The group therapy experience offers several features that are relatively unique. Yalom (1975) has described these features as therapeutic or curative factors. In all 11 such factors are offered as guidelines for those employing group therapy. In particular, there are several factors which may apply more directly to the bulimic group therapy situation.

The first factor considered to play a crucial role is that of the instillation of hope. Typically, clients arrive for therapy feeling helpless and unable to cope with their problem. The group experience provides an opportunity for confidence in their ability to overcome the disorder and a more positive view of the future to develop through the exchange of success stories. Next, universality may offer to clients relief from feelings of isolation, from feeling that they are the only one to suffer from the emotional turmoil they are experiencing. The group provides immediate feedback as to the similarities in each other's illness and suffering. A further factor delineated by Yalom (1975) is that of the imparting of information. In the group situation members have before them a number of people, including therapists and fellow members, from whom they can

receive advice, suggestions or information on how to deal with problems. The group experience also provides members with an opportunity to develop social skills and close interpersonal relationships with those around them. This may be important for those clients who have isolated themselves from friends and family due to their illness. While other therapeutic factors are identified by Yalom, and were no doubt operative during group sessions, those identified above were most central to the group treatment modality.

The group, as previously stated, was run by two co-therapists one male and one female. Of the 8 treatment sessions 6 were conducted conjointly and two with one therapist in attendance. Each therapist conducted one session alone. During two of the conjoint sessions the resources of consultants were also used. On one occasion a dietician spoke to the group regarding nutritional information, proper eating habits and weight maintenance. Group members were also given an opportunity to ask questions. On another occasion, a local psychiatrist who works with eating disordered patients spoke about the physiological effects of starvation, binging and purging. Again subjects were provided with an opportunity to ask questions.

(iii) Individual Delivery of Treatment Program

The primary difference between group and individual psychotherapy was the reliance on the one-to-one relationship between the therapist and client in individual therapy rather than a reliance on group processes in the group therapy. Due to the more flexible nature of the individual therapy, the unique needs of each client could better be met with each client receiving the therapist's full attention.

Subjects receiving individual therapy were assigned to Therapist A or Therapist B. One assessment session was conducted conjointly but apart from this subjects were involved with only one therapist. Therapist A saw 2 of 7 individual subjects and Therapist B 5 of 7. Therapist B was closely supervised by Therapist A. Those receiving individual therapy had individual sessions with the dietician and psychiatrist. The same material was used by the consultants for both the individual and group sessions.

DEPENDENT MEASURES

Diagnostic Survey for Eating Disorders: (DSED; Johnson, 1985): This questionnaire is essentially a

data base questionnaire which provides educational, medical and family background information, as well as, a history of eating problems, eating and exercise habits.

Eating Attitudes Test (EAT, Garner, Olmsted, Bohr and Garfinkel, 1982): This is a 40 item test which assesses the extent to which subjects have abnormal concerns about their eating and weight. The test includes subscales of dieting, bulimia, and oral control.

Eating Disorder Inventory (EDI, Garner, Olmsted and Polivy, 1983): The Eating Disorder Inventory, comprised of 64 items, is a scale which measures a variety of subject's attitudes, feelings and behaviors related to food and eating. The test contains eight subscales: drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness and maturity.

Beck Depression Inventory (BDI, Beck et al., 1961): This is a 30 item questionnaire used to measure psychological adjustment and specifically, the extent to which subjects are in a depressed affective state.

Irrational Beliefs Test (IBT, Jones, 1968): This is

an attitudinal test, comprised of 100 items, which measures the degree to which subjects subscribe to the ten irrational beliefs described by Ellis (1962).

Binge + Binge-Purge Record: Subjects throughout the treatment and follow-up portions of the study were required to maintain a daily record of the number of times they binged and purged.

Program Evaluation Questionnaire: This is an 8 item non-standardized questionnaire devised by the author to provide client feedback about the format of the treatment program and views on program component effectiveness. A copy of this questionnaire can be found in Appendix A.

TESTING

Pre-Treatment

Prior to commencing the 8 week treatment program subjects were requested to complete the assessment battery detailed above. At this time, subjects were also instructed to maintain a daily record of binge-purge episodes.

Post-Treatment

Following completion of the 8 treatment weeks subjects were requested to complete the EAT, EDI, BDI and IBT. As well, the program evaluation questionnaire was completed at this time and binge-purge data collected. Subjects were then asked to continue to maintain their binge-purge record until the follow-up meeting.

Follow-up

Follow-up testing occurred at 12-16 weeks after post-treatment testing. The median time lapse was 14 weeks. At this time subjects were again asked to complete the EAT, EDI, BDI and IBT. Binge-purge data for the follow-up period was collected and a brief interview inquiring as to the current status of the subject was held.

RESULTS

Results of the current investigation have been divided into those which are quantitative and those which are qualitative. Quantitative results are examined for the pre to post, post to follow-up and pre to follow-up time periods. The results are

organized and reported using this framework.

QUANTITATIVE

I Pre to Post Testing Results

Means, standard deviations, Analysis of Variance (ANOVA) and where appropriate Multiple Analysis of Variance (MANOVA) results are presented in Table 2. for all dependent variables and their subscales.

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insert Table 2. here

A. BDI

A repeated measures ANOVA was performed and as shown in Table 2. resulted in a non-significant Interaction effect. Both the Time and Group effects were significant. While both groups reduced their depression scores in a similar fashion those in the individual treatment group began and finished treatment with lower scores. These results are graphically presented in Figure 1.

Table 2. Overall results for the Pre to Post comparison for Total and Subscale scores on all dependent measures.

PRE-POST

DEPENDENT MEASURE	PRE GROUP $\bar{x}$	PRE GROUP Sd	PRE INDIV. $\bar{x}$	PRE INDIV. Sd	POST GROUP $\bar{x}$	POST GROUP Sd	POST INDIV. $\bar{x}$	POST INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Finter.
BDI	22.33	7.20	13.67	5.47	14.83	8.66	3.33	3.14	6	6	12.12*	14.48**	.37
BP	9.50	4.51	4.67	2.25	5.25	4.43	3.00	2.83	4	6	4.08'	5.01'	.96
EAT-TOTAL	55.33	18.04	44.67	15.64	38.83	16.52	16.33	12.11	6	6	3.92'	40.94**	2.85'
Overall										MANOVA	2.92	9.41**	1.59
-dieting	22.00	8.80	17.60	7.64	14.60	7.16	5.20	4.44	6	6	2.68	33.45**	2.13
-bulimia	11.80	3.03	8.40	4.04	9.00	5.39	.00	.00	6	6	10.05*	19.30**	4.89*
-oral control	4.00	4.80	2.60	2.61	3.80	5.22	2.60	1.82	6	6	.29	.81	.81

' = marginally significant $p < .10$
* = significant $p < .05$
**= significant $p < .01$

Table 2. cont'd

PRE-POST

DEPENDENT MEASURE	PRE GROUP $\bar{x}$	PRE GROUP Sd	PRE INDIV. $\bar{x}$	PRE INDIV. Sd	POST GROUP $\bar{x}$	POST GROUP Sd	POST INDIV. $\bar{x}$	POST INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Finter.
EDI-TOTAL	75.67	24.60	79.50	23.63	55.50	21.00	20.83	13.91	6	6	2.61	26.39**	6.29*
Overall										MAN.1-4	2.04	7.68*	2.70
										MAN.5-8	4.43'	1.60	.67
-drive	15.00	5.03	15.67	6.53	9.25	5.50	2.50	3.27	6	6	1.09	31.87**	4.90'
-bulimia	11.25	3.50	10.50	3.45	6.50	3.70	1.00	1.67	6	6	3.78'	37.40**	4.16'
-body dissat.	20.00	6.22	17.50	4.93	18.50	7.00	5.67	6.02	6	6	4.79'	17.98**	10.80**
-ineffective.	7.25	3.30	8.67	4.03	6.00	2.83	2.17	4.02	6	6	.37	8.72*	4.00'
-perfect.	5.25	3.59	10.17	5.42	5.25	3.10	6.17	1.84	6	6	1.76	3.34	3.34
-interpers.	7.00	1.41	3.17	1.94	6.00	4.16	.50	1.23	6	6	16.19**	3.95	.82
-interocept.	11.00	4.90	10.83	8.93	7.25	3.50	1.00	1.10	6	6	1.28	8.69*	1.74
-maturity	2.00	2.71	2.67	2.25	2.25	1.71	1.17	1.94	6	6	.03	.57	1.13

' = marginally significant $p<.10$
* = significant $p<.05$
**= significant $p<.01$

Table 2. cont'd

PRE-POST

DEPENDENT MEASURE	PRE GROUP $\bar{x}$	PRE GROUP Sd	PRE IDIV. $\bar{x}$	PRE IDIV. Sd	POST GROUP $\bar{x}$	POST GROUP Sd	POST INDIV. $\bar{x}$	POST INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Finte
IBT-TOTAL	311.17	28.11	319.17	36.92	287.67	52.06	283.50	34.77	6	6	.01	5.38*	.23
Overall										MAN.1-5	.15	3.19'	2.29
										MAN.6-10	1.89	.93	.45
-Love	37.67	7.69	35.67	7.89	32.33	9.61	31.67	9.59	6	6	.09	4.92*	.10
-Competence	36.17	3.66	40.50	4.93	34.33	6.28	30.67	8.34	6	6	.01	20.05**	9.43
-Villains	28.50	6.83	26.83	5.95	25.50	7.40	26.00	4.00	6	6	.03	1.77	.57
-Hopes	34.50	3.73	36.00	2.90	34.00	6.72	31.33	5.79	6	6	.06	2.72	1.77
-External	26.50	4.09	24.67	6.80	22.00	4.15	25.00	4.38	6	6	.06	1.43	1.92
-Negatives	33.83	2.14	35.00	7.18	32.83	4.26	27.67	4.93	6	6	1.20	3.56'	2.06
-Difficulties	29.83	5.31	33.83	5.67	32.17	4.96	28.00	6.03	6	6	.00	.59	3.22
-Others	27.67	4.80	31.83	5.78	28.33	4.08	32.67	2.16	6	6	4.32	.24	.00
-Past	30.00	7.01	29.00	5.14	28.50	5.47	24.17	4.67	6	6	1.18	2.19	.61
-Solutions	26.50	2.07	25.83	6.34	25.67	3.78	26.33	6.06	6	6	.00	.01	.12

' = marginally significant $p<.10$
* = significant $p<.05$
**= significant $p<.01$

insert Figure 1. here

B. Binge-Purge Data

Results of the binge-purge frequency scores were discouraging in that a number of subjects failed to consistently record their binge-purge incidents. Using those records which were maintained, a repeated measures ANOVA resulted in no significant Interaction effect. The Time effect was significant with a $p < .05$. As can be seen from the data and the graph (see Figure 2.) the two groups reduced the number of binge-purges in an undifferentiated fashion. However, as evidenced by the significant Group effect, the groups had different binge-purge rates at the beginning and end of treatment.

insert Figure 2. here

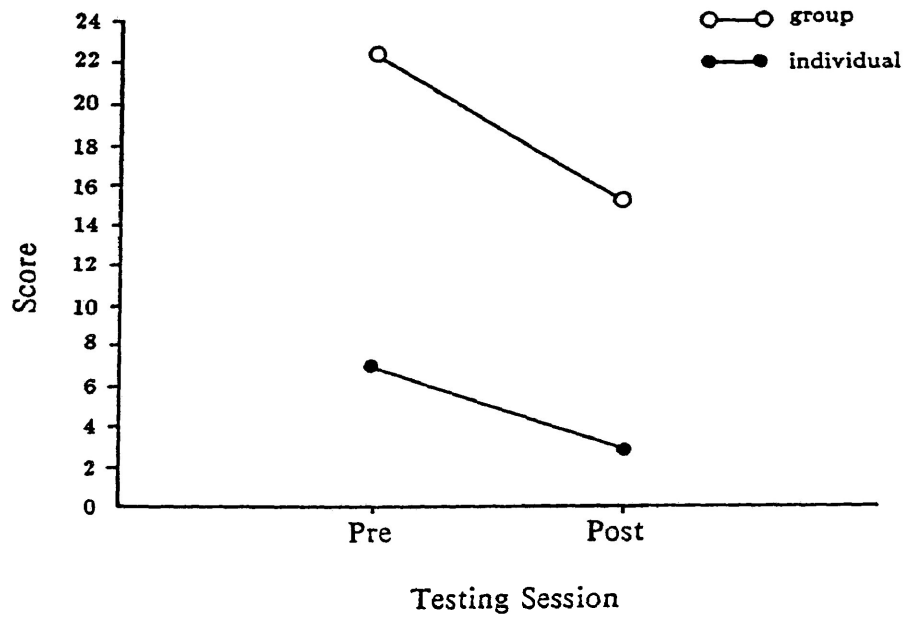

Figure 1: A comparison of pre and post treatment means for the Beck Depression Inventory as a function of treatment modality.

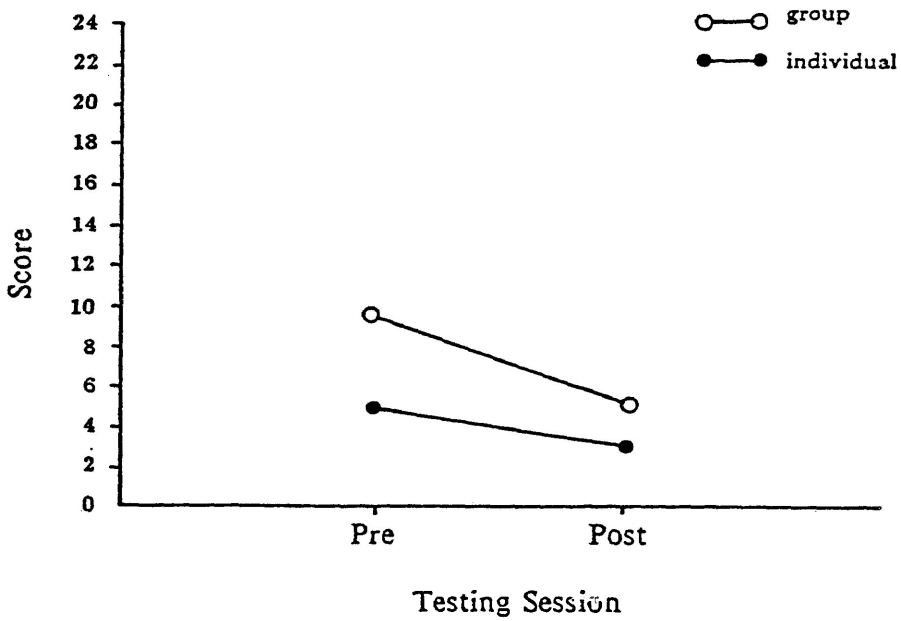

Figure 2: A comparison of pre and post treatment means for binge-purge incidents as a function of treatment modality.

C. EAT

The Total score results for the EAT, were analyzed using a repeated measures ANOVA. An Interaction effect approached significance with $p<.12$. This is suggestive of some support of differential rates of change across the two groups. Examination of the group means and Figure 3. show that while both groups reduced their Total scores those in the individual treatment mode changed at a slightly faster rate.

---

insert Figure 3. here

Subscale scores were assessed to examine in more detail patterns across the two groups. A MANOVA revealed the Time effect to be significant. ANOVAs were calculated to examine this overall effect. Both the dieting and bulimia subscales were highly significant. Subscale graphs, (refer to Figure 4.) demonstrate both treatment groups to have reduced their dieting and bulimia subscale scores.

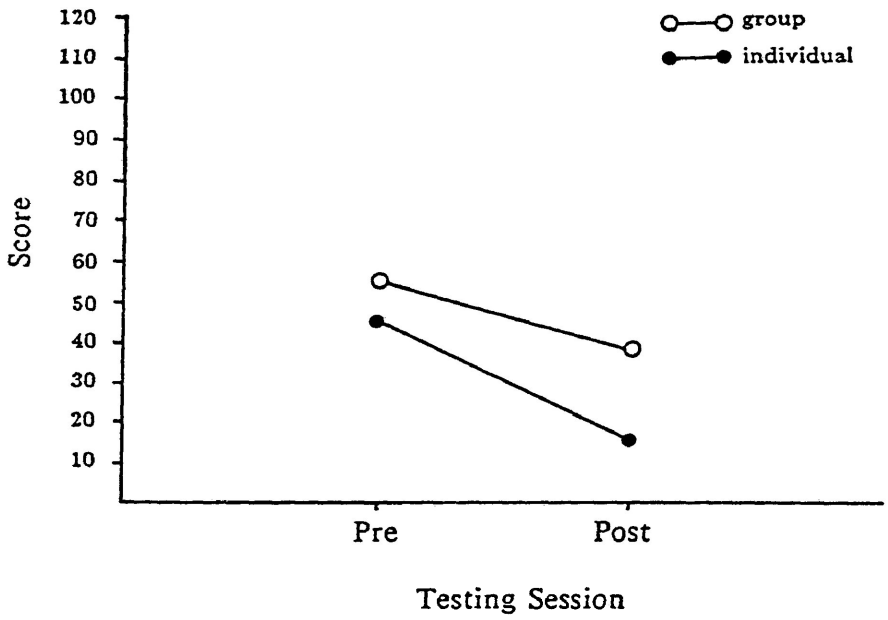

Figure 3: A comparison of pre andpost treatment means for total eating attitude test results as a function of treatment modality.

insert Figure 4. here

D. EDI

As in the case for the EAT, the EDI data were examined on both Total and subscale scores. A repeated measures ANOVA for the Total scores revealed a significant Interaction effect. The graph (see Figure 5.) of the Total scores reveals that those in individual therapy reduced their scores significantly more than those in the group treatment.

insert Figure 5. here

Subscale scores for the EDI were first assessed using MANOVA. As there were more variables (subscales) being examined than there were subjects within each group, it was necessary to group the scores and examine variables 1-4 separately from

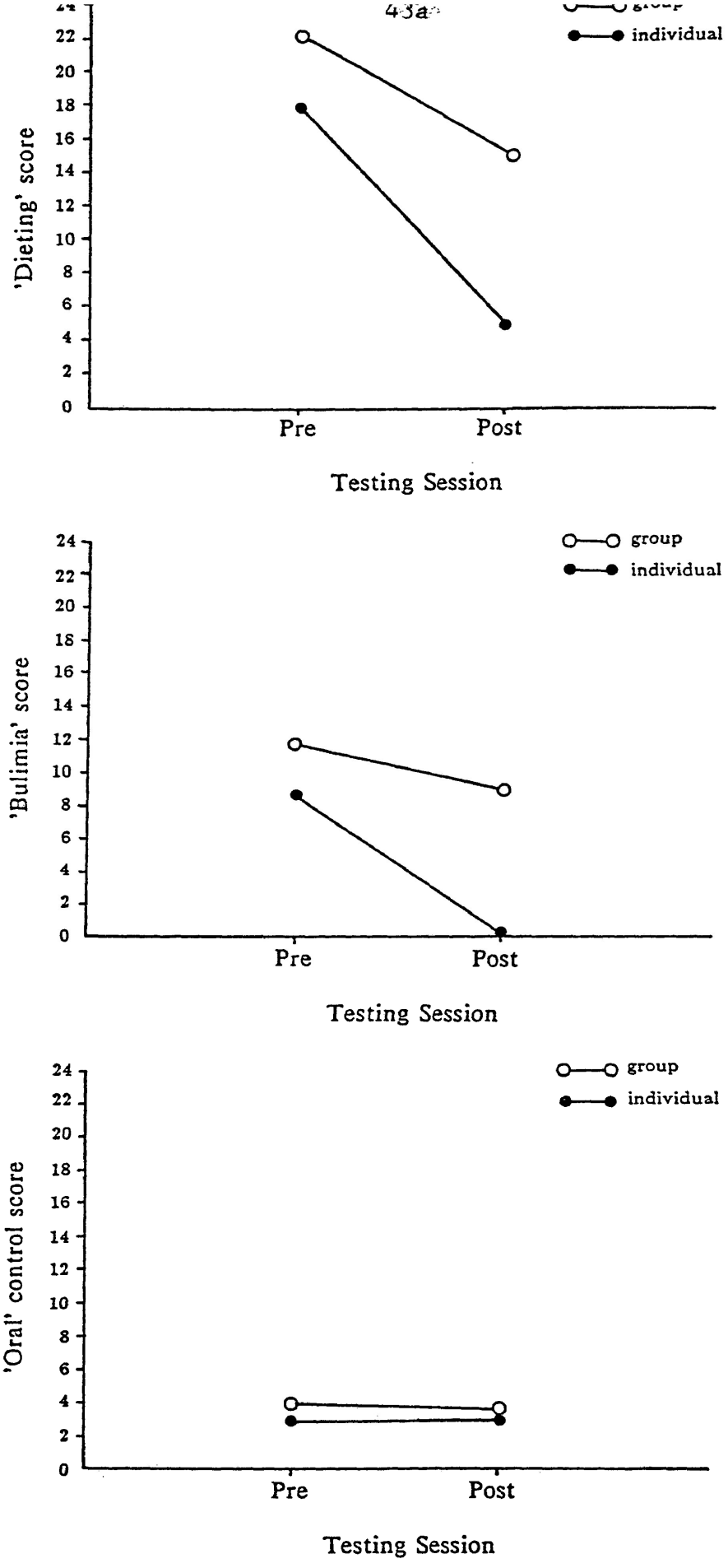

Figure 4: A comparison of pre and post treatment means for Eating Attitude Tests; sub scale bulimia scores as a function of treatment modality. (a)=dieting, (b)=bulimia, (c)=oral

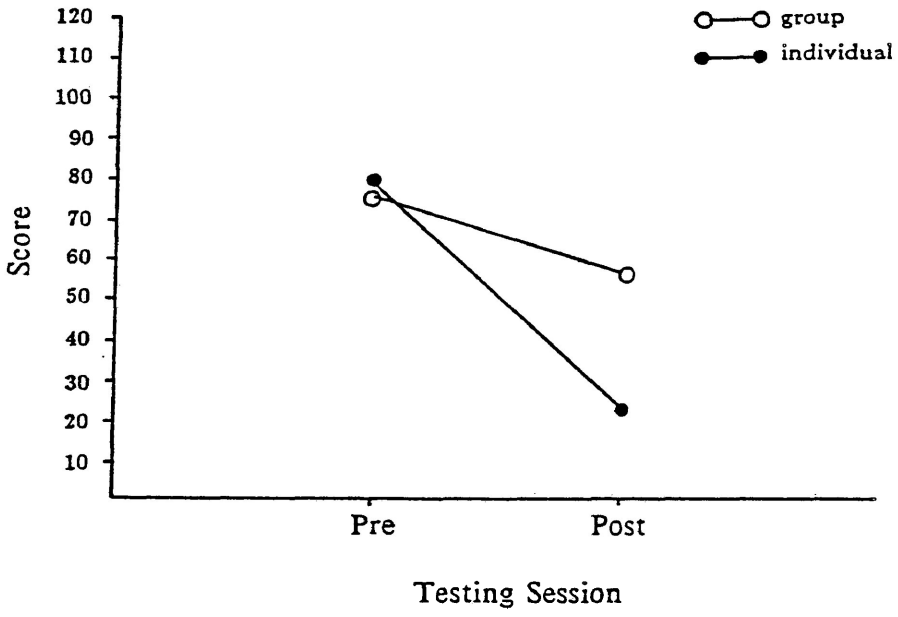

Figure 5: A comparison of pre and post treatment means for total Eating Disorder Inventory results as a function of treatment modality.

variables 5-8. For subscales 1-4 (drive for thinness, bulimia, body dissatisfaction and ineffectiveness) the multivariate Time effect was significant. ANOVAs revealed that both groups reduced their scores for variables 1,2, and 4. For subscales 5-8 (perfectionism, interpersonal distrust, interoceptive awareness and maturity) the multivariate Group effect approached significance, $p<.06$. ANOVAs showed that for variable 6 (interpersonal distrust) the two groups had different scores both at the start and at the finish of treatment.

E. IBT

ANOVA on the Total IBT scores revealed a significant Time effect. Figure 6. presents the Total scores in graphic form. As is depicted in the graph, both groups reduced their overall irrational belief scores although neither dramatically nor differentially.

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insert Figure 6. here

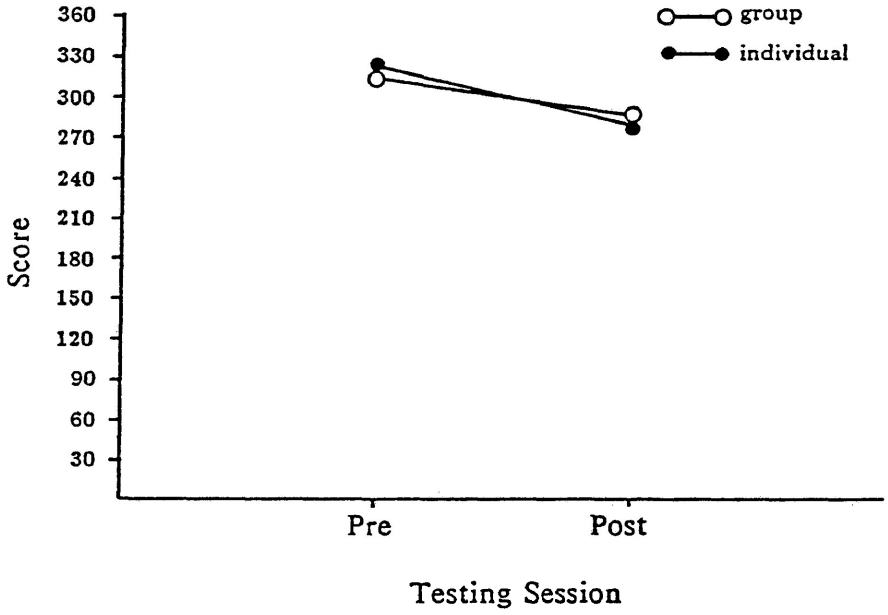

Figure 6: A comparison of pre and post treatment means for total Irrational Beliefs Test results as a function of treatment modality.

The IBT subscales also had to be grouped in order to proceed with analyses. Overall MANOVA for subscales 1-5 revealed a Time effect which approached significance with $p<.09$. Separate ANOVAs for time revealed scales 1,2 and 6 to be significant. This represents a reduction in perfectionistic thinking related to acceptance and competency.

F. ATTENDANCE

The rates of program attendance across sessions were assessed for both groups. In comparing the number of sessions attended, subjects in the group mode attended a mean of 5.75 sessions and those in the individual therapy a mean of 6.7 sessions. This difference was not statistically significant, $t= 0.94$ $p<.36$.

Alternatively, the per session rates of attendance were examined across treatment groups. These findings are presented in Figure 7. and show a gradual decline in attendance occuring in the group mode while consistent attendance was maintained in the individual therapy. Therefore the sessions missed by individuals tended to occur evenly over the treatment sessions, while group therapy attendance declined increasingly with approximately 1/2 of the

participants missing the final 3 sessions.

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insert Figure 7. here

II Post to Follow-up Testing Results

To further assess subject eating behaviours and related symptoms following treatment, an analysis of Post to Follow-up data was performed. Findings are presented in Table 3.

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insert Table 3. here

A. BDI

Results of the BDI indicate only the Group effect to be significant. While the groups did not change differentially from Post to Follow-up, their post treatment scores remain significantly different

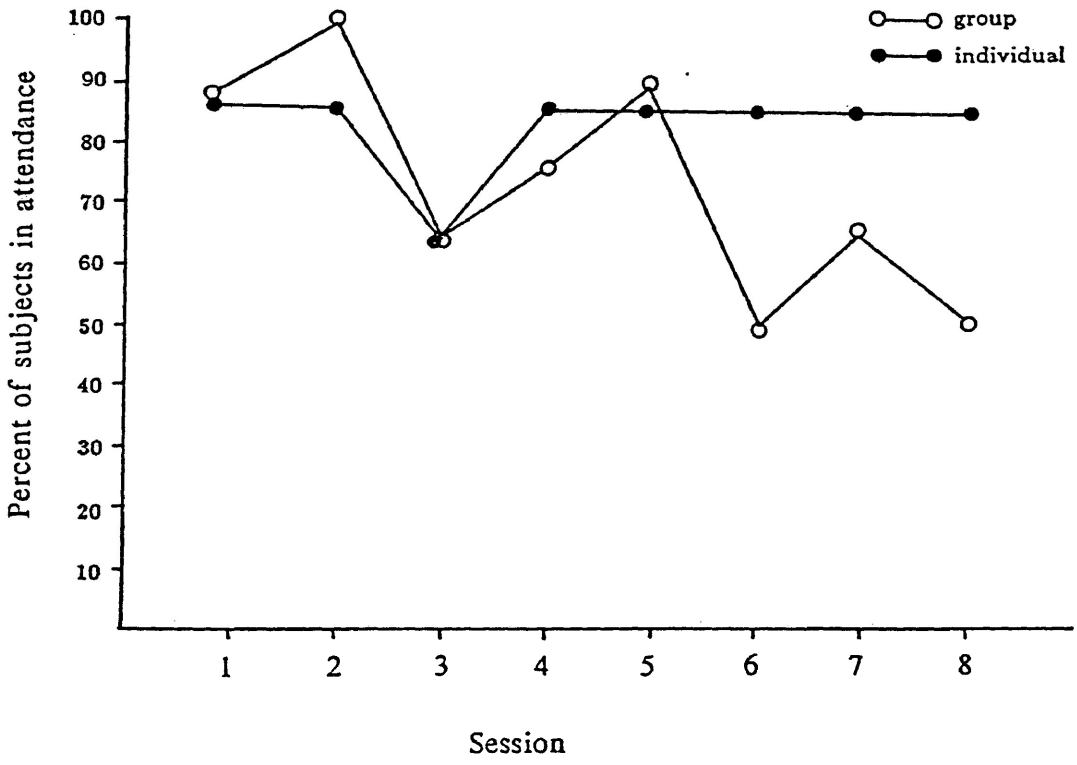

Figure 7: Rates of attendance per session across both the group and individual treatment modalities.

Table 3. Overall results for the Post to Follow-up comparison for Total and Subscale scores on all dependent measures.

POST-FOLLOW UP

DEPENDENT MEASURE	POST GROUP $\bar{x}$	POST GROUP Sd	POST INDIV. $\bar{x}$	POST INDIV. Sd	FOLLOW-UP GROUP $\bar{x}$	FOLLOW-UP GROUP Sd	FOLLOW-UP INDIV. $\bar{x}$	FOLLOW-UP INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Finter
BDI	15.75	11.00	3.33	3.14	12.50	9.68	3.50	4.18	4	6	6.43*	.95	1.17
BP	1.50	.71	3.00	3.16	.00	.00	.80	.84	2	5	.62	3.87'	.14
EAT-TOTAL	32.25	17.97	16.33	12.11	34.50	23.70	23.50	17.33	4	6	2.02	.62	.94
Overall										MANOVA	10.77*	.25	.51
-dieting	16.67	4.93	5.20	4.44	14.67	1.16	9.00	7.81	4	6	6.41*	.16	1.63
-bulimia	12.00	.00	.00	.00	11.00	2.00	3.20	4.60	4	6	47.53*	.59	2.14
-oral control	4.00	4.58	2.60	1.82	4.67	4.16	2.80	3.11	4	6	.58	.17	.05

' = marginally significant $p<.10$
* = significant $p<.05$
**= significant $p<.01$

Table 3. cont'd

POST-FOLLOW UP

DEPENDENT MEASURE	POST GROUP $\bar{x}$	POST GROUP Sd	POST INDIV. $\bar{x}$	POST INDIV. Sd	FOLLOW-UP GROUP $\bar{x}$	FOLLOW-UP GROUP Sd	FOLLOW-UP INDIV. $\bar{x}$	FOLLOW-UP INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Finter.
EDI-TOTAL	56.75	26.69	20.83	13.91	55.25	36.72	22.17	14.26	4	6	6.25*	.00	.09
Overall										MAN.1-4	1.33	2.91	1.90
										MAN.5-8	5.17*	3.13	4.11'
-drive	8.33	6.35	2.50	3.27	8.00	6.93	2.83	5.98	4	6	2.25	.00	.09
-bulimia	6.67	4.51	1.00	1.67	4.67	5.03	.50	1.22	4	6	6.15*	15.91**	5.73*
-body dissat.	17.33	8.08	5.67	6.02	14.67	11.02	6.17	5.88	4	6	4.01	1.92	4.11'
-ineffective.	6.00	3.46	2.17	4.02	4.00	4.00	2.67	4.18	4	6	.88	1.34	3.72'
-perfect.	5.33	3.79	6.17	1.84	5.33	5.51	4.17	3.06	4	6	.01	1.08	1.08
-interpers.	7.67	3.06	.50	1.23	6.00	6.56	1.00	1.67	4	6	10.78**	.32	1.09
-interocept.	7.67	4.16	1.00	1.10	8.00	5.20	.33	.82	4	6	15.80**	.11	1.00
-maturity	3.00	1.00	1.17	1.94	.33	.58	1.17	1.84	4	6	.19	4.09'	.08

' = marginally significant $p<.10$
* = significant $p<.05$
**= significant $p<.01$

TABLE 3.cont'd

POST-FOLLOW UP

DEPENDENT MEASURE	POST GROUP $\bar{x}$	POST GROUP Sd	POST INDIV. $\bar{x}$	POST INDIV. Sd	FOLLOW-UP GROUP $\bar{x}$	FOLLOW-UP GROUP Sd	FOLLOW-UP INDIV. $\bar{x}$	FOLLOW-UP INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Finter
IBT-TOTAL	311.00	28.34	283.50	34.77	304.25	28.66	279.50	26.99	4	6	1.97	.87	.06
Overall										MAN.1-5	5.37	1.08	1.03
										MAN.6-10	42.00**	1.12	.19
-Love	34.50	10.54	31.67	9.59	33.25	12.18	29.17	6.68	4	6	.33	1.57	.17
-Competence	37.25	5.25	30.67	8.34	34.25	4.27	32.33	7.06	4	6	1.12	.17	4.37'
-Villains	29.75	4.35	26.00	4.00	29.00	5.99	27.33	4.56	4	6	.95	.09	1.19
-Hopes	37.25	3.59	31.33	5.79	35.75	2.75	31.33	2.42	4	6	6.90*	.20	.20
-External	23.25	4.57	25.00	4.38	24.50	7.23	22.50	4.23	4	6	.00	.33	2.93
-Negatives	33.75	5.12	27.67	4.93	33.25	3.78	26.50	4.64	4	6	5.56*	.40	.06
-Difficulties	32.00	6.06	28.00	6.03	28.50	6.14	28.50	5.51	4	6	.34	.84	1.49
-Others	28.50	5.26	32.67	2.16	30.00	4.32	33.00	5.02	4	6	2.12	.57	.23
-Past	31.00	3.37	24.17	4.67	30.75	4.19	22.50	1.98	4	6	13.56**	.65	.36
-Solutions	23.75	2.99	26.33	6.06	24.50	4.80	26.33	3.27	4	6	.76	.06	.06

' = marginally significant $p<.10$
* = significant $p<.05$
**= significant $p<.01$

from each other. The individual treatment group continues to have lower depression scores (see Figure 8.). The non-significant Time effect suggests that pre to post reductions in depression scores were maintained through to follow-up.

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insert Figure 8. here

B. BP

Binge purge frequencies continued to diminish after treatment, as indicated by the borderline significant Time effect ($p<.11$). The ANOVA further revealed the Group and Interaction effects to be non-significant suggesting that the two groups had similar rates of change in binge-purge frequency. These results are presented in graphic form in Figure 9.

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insert Figure 9. here

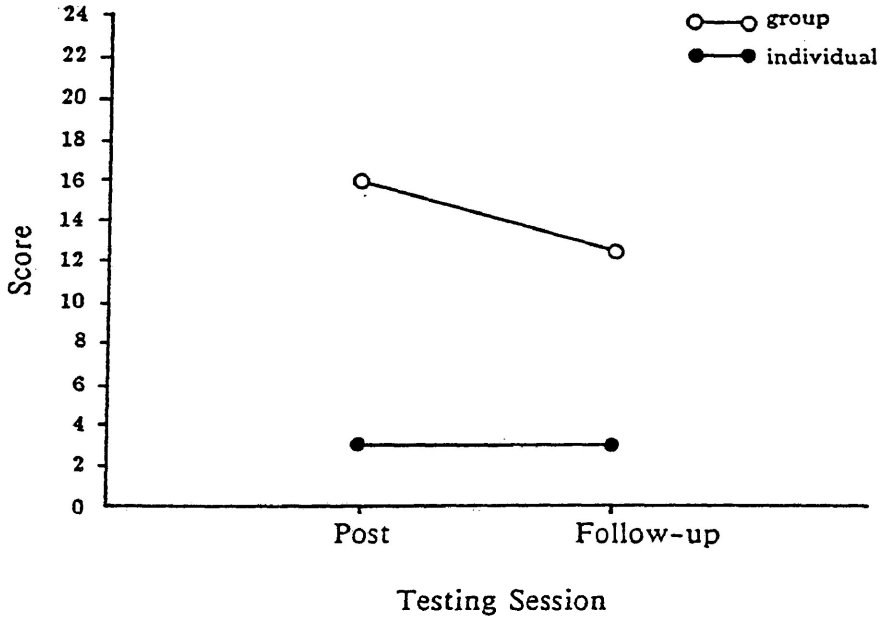

Figure 8: A comparison of post and follow-up treatment means for the Beck Depression Inventory results as a function of treatment modality.

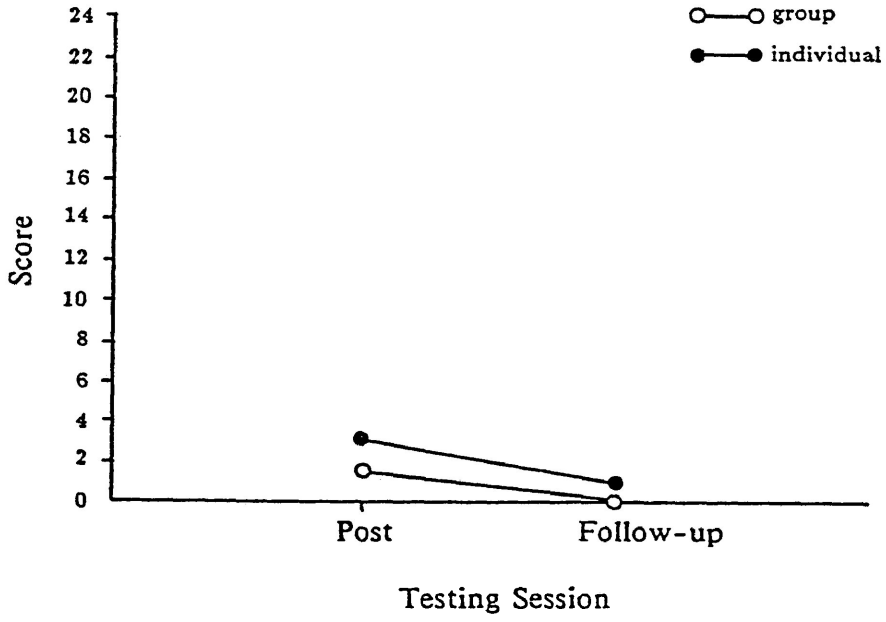

Figure 9: A comparison of post and follow-up treatment means for binge-purge incidents as a function of treatment modality.

C. EAT

The ANOVA for Total EAT scores revealed only a significant Group effect indicating that at Post treatment and at follow-up the two groups had significantly different scores. Scores did not significantly change from post-treatment levels (see Figure 10). MANOVA results revealed a significant Group effect. ANOVAs showed the groups to be significantly different on both the dieting and bulimia scales. Figure 11. shows on both scales that those receiving the individual treatment have lower mean scores than those receiving group therapy. These findings corroborate the marginally significant Interaction effect observed at post-treatment.

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insert Figure 10. here

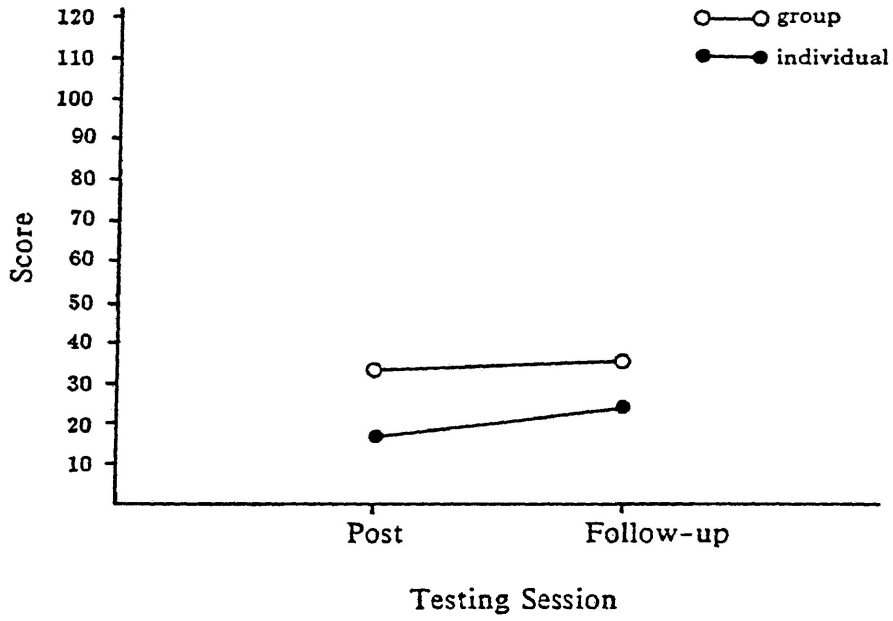

Figure 10: A comparison of post and follow-up treatment means for total Eating Attitudes Test results as a function oftreatment modality.

insert Figure 11. here

D. EDI

EDI Total score ANOVA results revealed a significant Group effect. The means found in Table 3 indicate the individual group to have the lower scores. This data is depicted in graphic form in Figure 12. MANOVA results for scales 1 to 4 were nonsignificant. MANOVA results for sales 5-8 revealed a significant Interaction effect. An examination of the ANOVAs for scales 5-8, reveals that the strong Group effects for scales 6 and 7 account for the overall Interaction effect.

insert Figure 12. here

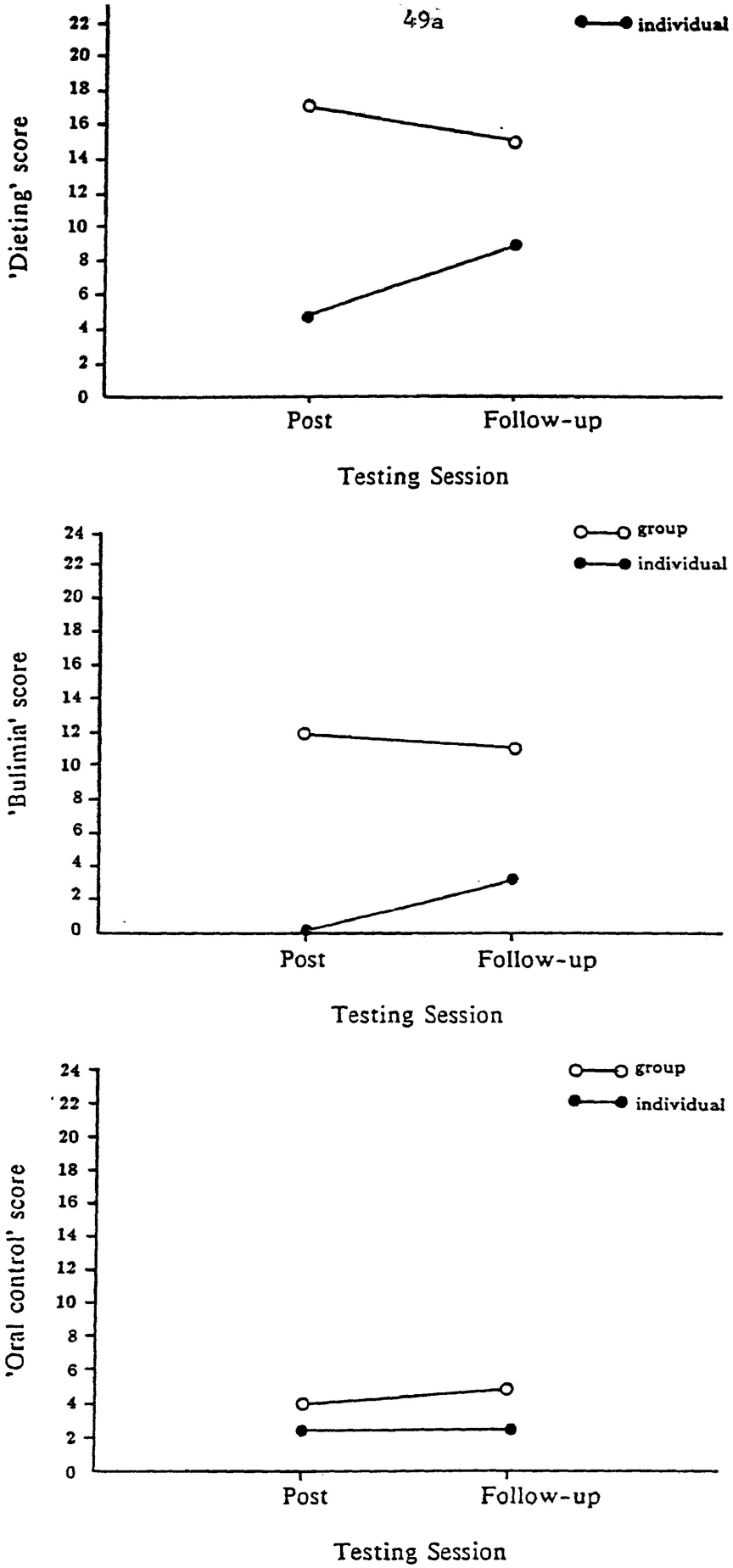

Figure 11: A comparison of post and follow-up treatment means for subscale results of the Eating Attitudes Test as a function of treatment modality: (a)=dieting; (b)=bulimia; (c)=oral control.

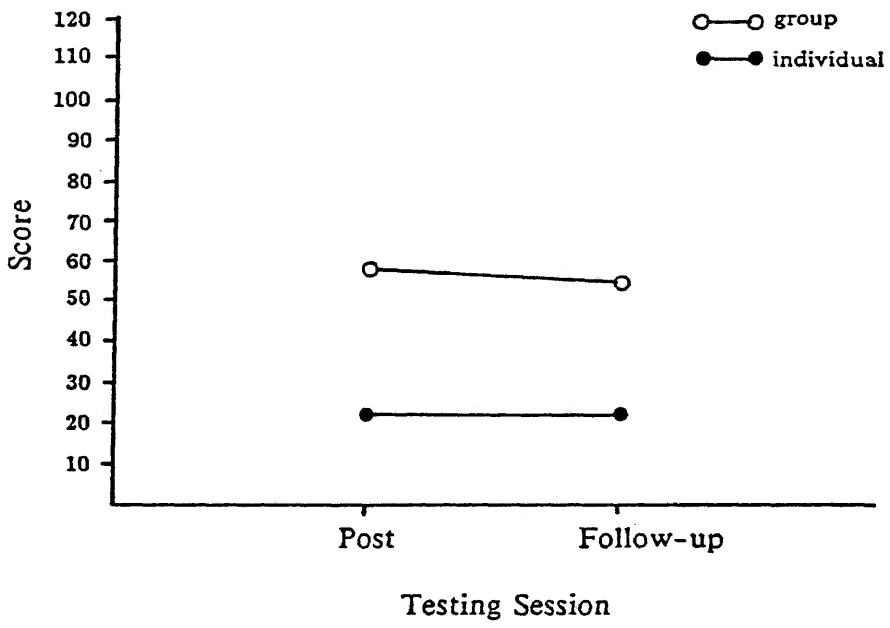

Figure 12: A comparison of post and follow-up treatment means for total Eating Disorders Inventory results as a function of treatment modality.

E. IBT

ANOVA for Total IBT scores showed no significant effects. The graph found in Figure 13. further substantiates this lack of activity. MANOVA results for the subscales revealed only a significant Group effect for variables 6-10. ANOVA results revealed significant Group effects for scales 4, 6 and 9. Overall, these findings indicate that at follow-up, subjects scores had not changed from post-treatment levels.

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insert Figure 13. here

III Pre to Follow-Up Testing Results

Results of these analyses are presented in Table 4.

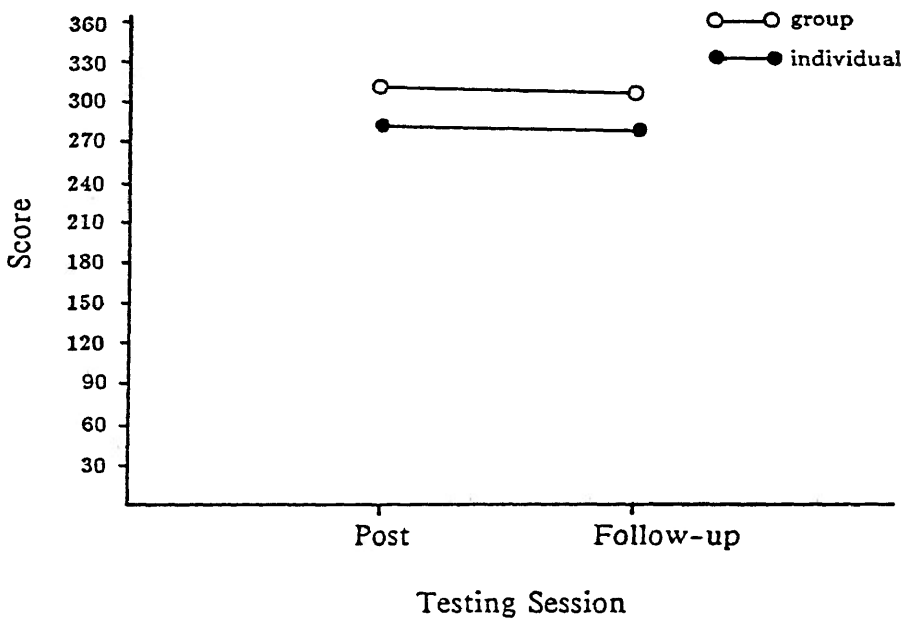

Figure 13: A comparison of post and follow-up treatment means for total Irrational Beliefs Test results as a function of treatment modality.

insert Table 4. here

A. BDI

ANOVA revealed a non-significant Interaction effect. This indicates both groups behaved similarly across the pre to follow-up testing sessions (refer to Figure 14.). The pre to follow-up Time effect is more highly significant than the pre to post Time effect indicating that subjects clearly maintained changes.

insert Figure 14. here

B. Binge-Purge Data

ANOVA revealed a significant Time effect representing a reduction in the incidence of binge-purging from pre-treatment levels. The

Table 4. Overall results for the Pre to Follow-Up comparison for Total and Subscale scores on all dependent measures.

PRE-FOLLOW UP

DEPENDENT MEASURE	PRE GROUP $\bar{x}$	PRE GROUP Sd	PRE INDIV. $\bar{x}$	PRE INDIV. Sd	FOLLOW-UP GROUP $\bar{x}$	FOLLOW-UP GROUP Sd	FOLLOW-UP INDIV. $\bar{x}$	FOLLOW-UP INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Fint
BDI	22.40	6.84	13.67	5.47	13.20	8.53	3.50	4.18	5	6	7.96	24.12**	.06
BP	6.50	4.95	4.20	2.17	.00	.00	.80	.84	2	5	.42	13.04*	1.28
EAT-TOTAL	51.00	14.67	44.67	15.64	37.80	21.81	23.50	17.33	5	6	1.09	19.73**	1.06
Overall										MANOVA	1.31	1.90	.85
-Dieting	22.00	8.54	18.50	7.18	18.67	6.43	10.33	7.71	5	6	1.53	6.53*	1.15
-Bulimia	12.00	1.73	8.67	3.67	11.67	1.16	4.33	4.97	5	6	5.23*	3.24'	2.38
-Oral Control	4.00	3.61	2.67	2.34	2.67	3.06	2.33	3.01	5	6	.19	1.39	.50

' = marginally significant $p < .10$
* = significant $p < .05$
**= significant $p < .01$

Table 4. cont'd

PRE-FOLLOW UP

DEPENDENT MEASURE	PRE GROUP $\bar{x}$	PRE GROUP Sd	PRE INDIV. $\bar{x}$	PRE INDIV. Sd	FOLLOW-UP GROUP $\bar{x}$	FOLLOW-UP GROUP Sd	FOLLOW-UP INDIV. $\bar{x}$	FOLLOW-UP INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Finter
EDI-TOTAL	69.40	23.20	79.50	23.63	60.00	33.53	22.17	14.26	5	6	1.55	12.51**	6.46*
Overall									MAN.1-4		.46	8.87*	1.68
									MAN.5-8		3.58'	1.73	2.87
-Drive	13.25	3.78	15.67	6.53	9.75	6.65	2.83	5.98	5	6	.54	12.20**	3.98'
-Bulimia	9.50	2.65	10.50	3.45	4.50	4.12	.50	1.23	5	6	.87	54.00**	6.00*
-Body Dissat.	17.25	6.85	17.50	4.93	15.75	9.25	6.17	5.88	5	6	1.66	8.45*	4.96*
-Inneffective.	8.50	4.04	8.67	4.03	3.75	3.30	2.67	4.18	5	6	.05	13.80**	.19
-Perfect.	6.75	4.99	10.17	5.42	6.75	5.32	4.17	3.06	5	6	.02	4.61'	4.61'
-Interpers.	7.00	1.41	3.17	1.94	6.00	5.35	1.00	1.67	5	6	9.09*	2.27	.31
-Interocept.	12.25	5.50	10.83	8.93	10.50	6.56	.33	.82	5	6	3.33	6.13*	3.13*
-Maturity	2.50	2.65	2.67	2.25	.50	.58	1.17	1.84	5	6	.19	4.09'	.08

' = marginally significant $p<.10$
* = significant $p<.05$
**= significant $p<.01$

Table 4. cont'd

PRE-FOLLOW UP

DEPENDENT MEASURE	PRE GROUP $\bar{x}$	PRE GROUP Sd	PRE INDIV. $\bar{x}$	PRE INDIV. Sd	FOLLOW-UP GROUP $\bar{x}$	FOLLOW-UP GROUP Sd	FOLLOW-UP INDIV. $\bar{x}$	FOLLOW-UP INDIV. Sd	n grp.	n indiv.	ANOVA Fgrp.	ANOVA Ftime	ANOVA Finter.
IBT-TOTAL	320.60	23.48	319.17	36.92	308.60	26.66	279.50	26.99	5	6	.85	15.81**	4.53'
Overall									MAN.1-5		.84	5.28*	4.10'
									MAN.6-10		2.45	4.38'	1.81
-Love	37.00	8.40	35.67	7.89	34.40	10.85	29.17	6.68	5	6	.48	5.73	1.05
-Competence	36.60	3.78	40.50	4.93	35.20	3.83	32.33	7.06	5	6	.03	24.41**	12.21**
-Villains	32.20	3.27	26.83	5.95	30.80	6.30	27.33	4.46	5	6	2.35	.14	.63
-Hopes	35.80	2.59	36.00	2.90	35.20	2.68	31.33	2.42	5	6	1.66	12.48**	7.44*
-External	27.00	4.36	24.67	6.80	25.60	6.73	22.50	4.23	5	6	.96	.78	.04
-Negatives	33.60	2.51	35.00	7.18	33.00	3.17	26.50	4.64	5	6	.99	8.97*	6.76*
-Difficulties	31.00	3.32	33.83	5.67	28.40	5.32	28.50	5.51	5	6	.29	7.34*	.87
-Others	28.60	4.34	31.83	5.78	29.40	3.98	33.00	5.02	5	6	1.65	.56	.02
-Past	32.80	8.38	29.00	5.14	32.00	4.58	22.50	1.98	5	6	4.97*	8.26*	5.04*
-Solutions	26.00	2.83	25.83	6.34	24.60	4.16	26.33	3.27	5	6	.12	.10	.46

' = marginally significant $p<.10$
* = significant $p<.05$
**= significant $p<.01$

Interaction effect remains non-significant indicating both groups change similarly (see Figure 15.).

---

insert Figure 15. here

C. EAT

Through ANOVA the Total EAT score Interaction effect was shown to be non-significant. This indicates that while there was a trend toward differential rates of change pre to post treatment, this trend is not supported when the more extensive pre to follow-up time period is considered. For a graphic representation of this data refer to Figure 16.

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insert Figure 16. here

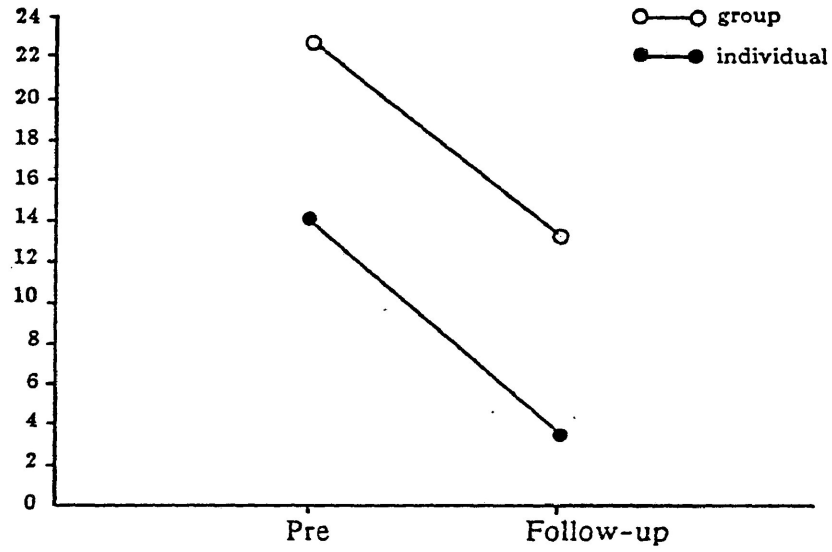

Figure 14: A comparison of pre and follow-up treatment means for the Beck Depression Inventory as a function of treatment modality.

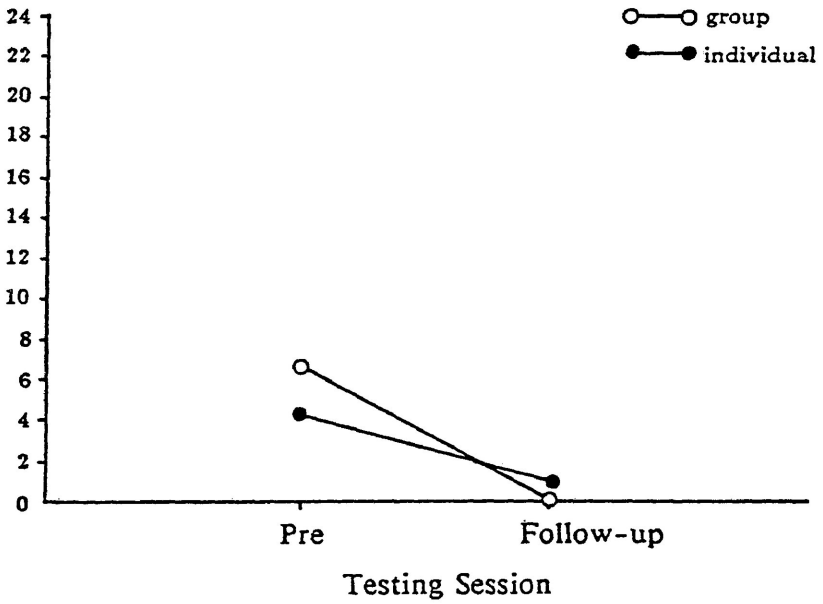

Figure 15: A comparison of pre and follow-up treatment means for binge-purge incidents as a function of treatment modality.

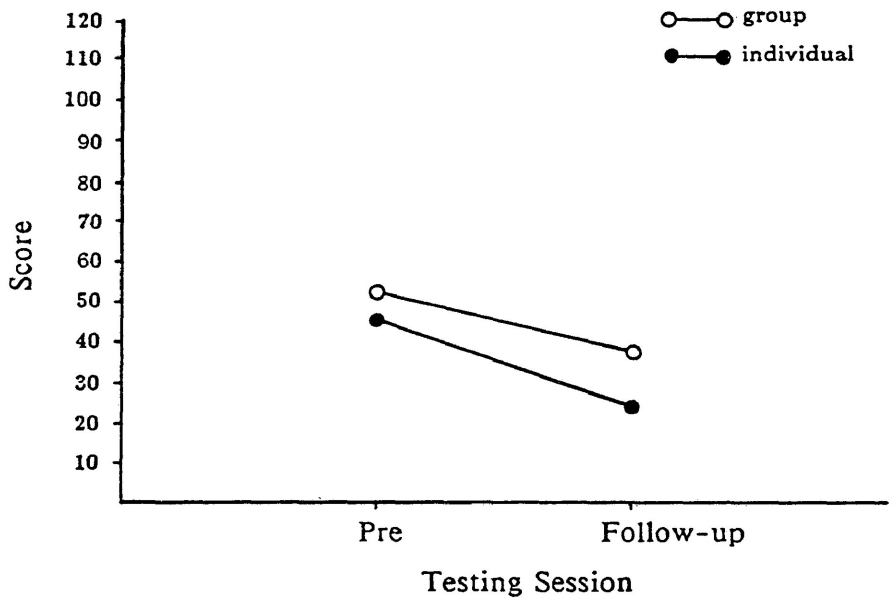

Figure 16: A comparison of pre and follow-up treatment means for total Eating Attitude Test results as a function of treatment modality.

MANOVA for the EAT subscales revealed no significant effects. The strong effects, particularly of Time, observed at pre-post have been lost. The graph presented in Figure 17. also demonstrates this finding.

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insert Figure 17. here

D. EDI

Total EDI ANOVA results revealed significant Interaction and Time effects. As is shown in Figure 18. the individual therapy group has reduced their Total EDI scores at a faster rate than those receiving group therapy.

MANOVA results for the EDI subscales reveal a significant Time effect for variables 1-4 and a marginally significant Group effect for variables 5-8. Significant ANOVAs revealed that both groups improved in their drive for thinness, bulimia, body dissatisfaction and ineffectiveness scales from pre to follow-up time periods. On the remaining subscales,

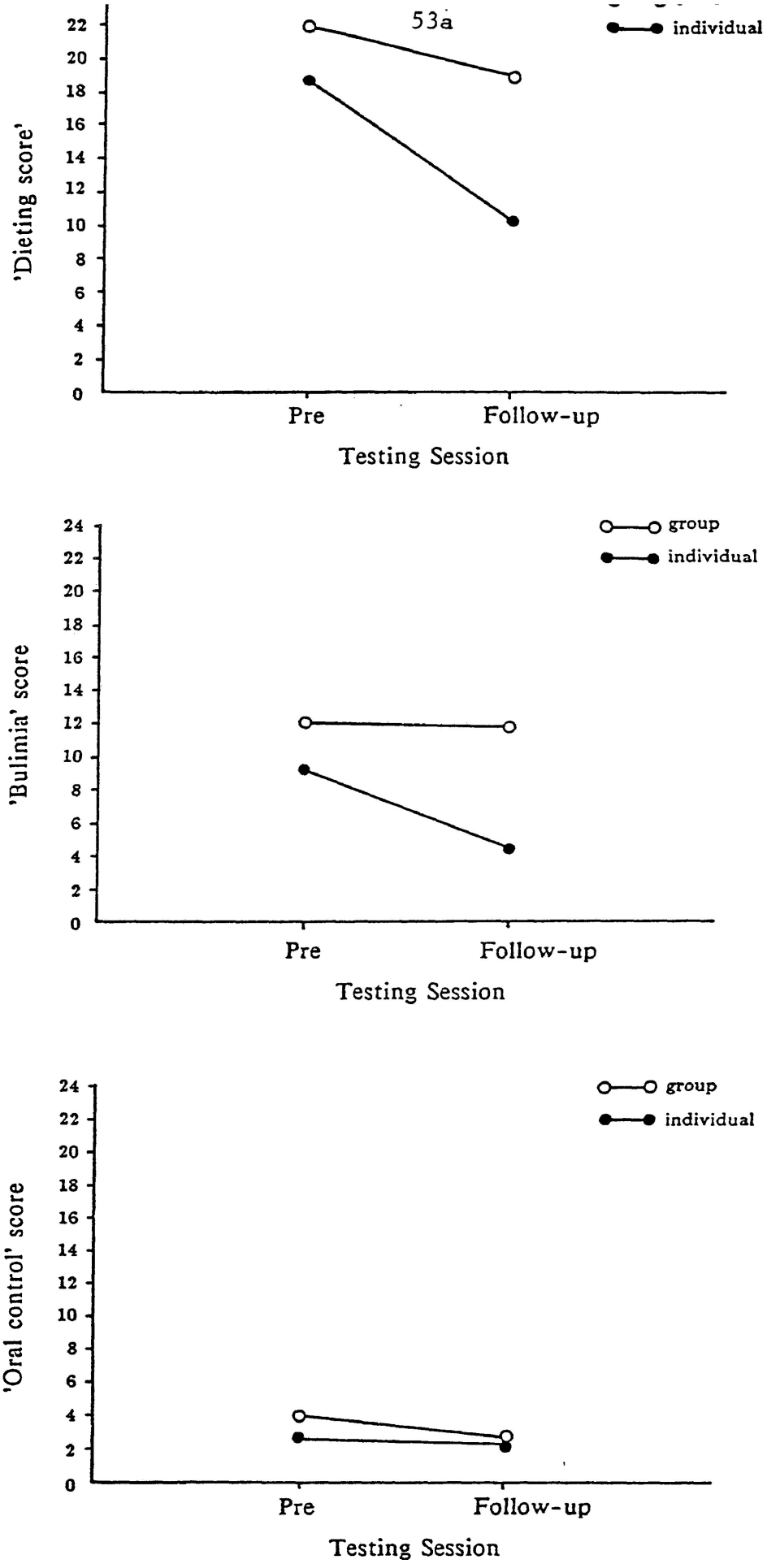

Figure 17: A comparison of pre and follow-up treatment means for Eating Attitude Test Subscale results as a function of treatment modality: (a)=dieting; (b)=bulimia; (c)=oral control.

ANOVAs revealed that group subjects showed less interpersonal awareness than individual subjects.

---

insert Figure 18. here

E. IBT

ANOVA of the Total IBT scores revealed a borderline Interaction effect ($p<.06$). As can be seen from Figure 19. the individual therapy subjects reduced their overall irrational thoughts more than those in the group modality.

MANOVA findings for subscales 1-5 revealed a marginally significant Interaction effect ($p<.07$). ANOVA results revealed that scales 2 and 4 supported the Interaction effects observed for the Total IBT scores. MANOVA for variables 6-10 showed a marginally significant Time effect. ANOVAs for scales 6-10 showed that for scales 6, 7 and 9 subjects reduced their irrational thoughts.

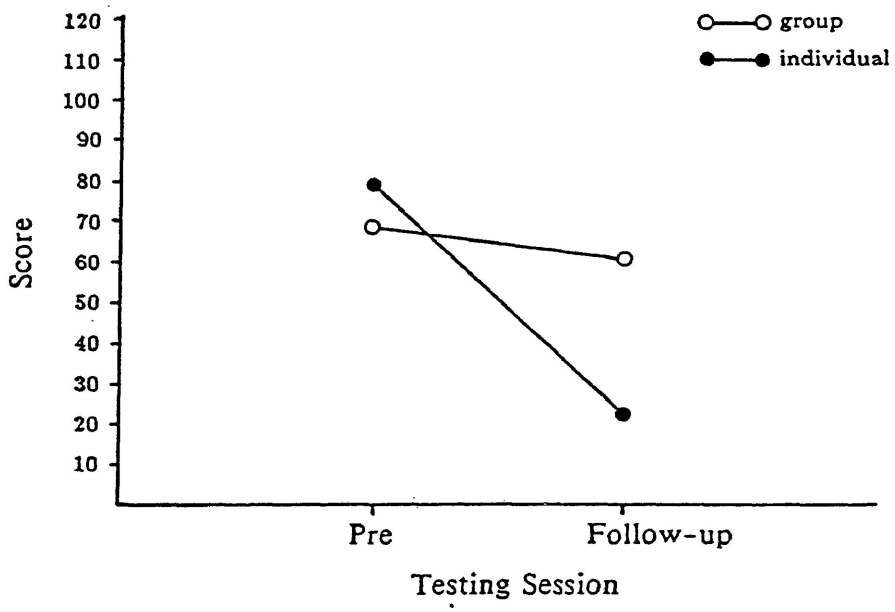

Figure 18: A comparison of pre and follow-up treatment means for total Eating Disorders Inventory results as a function of treatment modality.

insert Figure 19. here

QUALITATIVE

Results for the qualitative section are taken from the Program Evaluation Questionnaire (refer to Appendix A) administered to subjects at the termination of treatment. The questionnaire requested subjects to describe what they liked/disliked regarding the format and content of the treatment program.

In general, most subjects liked the format of weekly treatment sessions. However, three subjects in the group found the 90 minute sessions too short and suggested they be lengthened to 2 hours. Two of these same subjects felt that an additional two sessions would have been beneficial. Those in the individual therapy reported no desire to change either the per session time or the number of treatment sessions.

All subjects across both groups enjoyed the rapport established during therapy. Three subjects from the individual therapy expressed an interest in

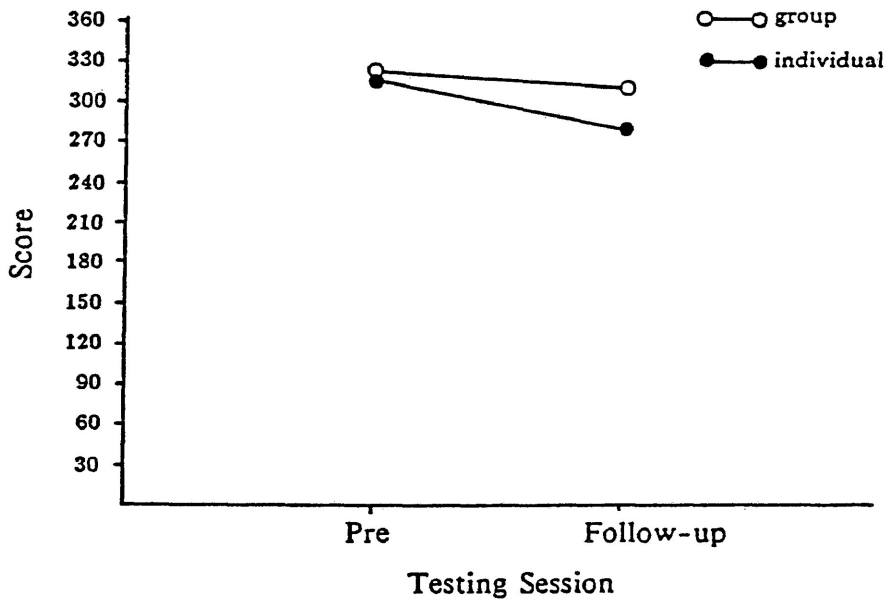

Figure 19: A comparison of pre and follow-up treatment means for total Irrational Beliefs Test results as a function of treatment modality.

having group contact with others experiencing the same difficulties as themselves. Two subjects in the group modality felt that more emphasis on the cognitive material would have been helpful. A third group treatment member suggested that a greater focus on society's role in eating disorders would have been useful. One individual therapy member felt that a greater focus on learning to listen to one's body for such things as hunger pains might have been beneficial. Other suggestions put forth by subjects for inclusion in the program were the use of books, a buddy system, a reward system, and an informal 'rap' session for participants.

On the evaluation questionnaire subjects were also requested to indicate those cognitive and behavioral items they found helpful in gaining control over their bulimia. As a note of caution, no treatment compliance measure was taken during the course of therapy. Consequently, the endorsement of components as effective or noneffective by subjects does not necessarily indicate that the items were in fact used or tried.

Four of the cognitive elements were thought to be effective by more than 60% of the participants. The first component and most effective (100%) was the

handout and discussion material pertaining to the irrational idea of setting perfectionistic standards for oneself. The second most effective component (80%) was the discussion of no longer needing to feel isolated because of the bulimia or in having to overcome it alone. Thirdly, subjects (75%) found the handout/discussion material about the irrational need to be loved or liked by everyone to be useful. Similarly (75%) of subjects found the fable entitled "Until you die" and subsequent discussion effective in helping them to put their decision making process in perspective. The remaining components were deemed effective by 30 to 60% of subjects.

The behavioral components did not receive as many high ratings as the cognitive ones. The highest rated component (75%) was the recommendation that subjects plan to eat 3 meals per day and include snacks. The next most effective behavioral component (70%) was slowing down the eating rate. Planning an activity for post-meal time was found by 60% to be effective. The remaining items received ratings ranging from 30 to 40%.

DISCUSSION

Results of this study revealed few differential effects. By far and large the groups changed similarly. However, in the few cases where there were differential rates of change those in the individual therapy showed the greater improvement. While no predictions were made at the onset of the study regarding treatment outcome, the research suggested that the overall treatment package would effectively reduce bulimic symptoms (Fairburn et al., 1986; Freeman et al., 1985; Kirkley et al., 1985; ordman and Kirscenbaum, 1985; Schneider and Agras, 1985; Wilson et al., 1986) and that individual therapy might be slightly more effective in doing so than group therapy (Fairburn, 1981).

As previously stated, in the cases where differential rates of change were detected, individual therapy was favored. For example, the pre to post comparison of Total EAT scores revealed a marginally significant Interaction effect and showed subjects in the individual therapy mode to have reduced their scores more than those in group therapy. Total scores at pre to post comparison for the EDI also demonstrated individual therapy subjects

to have lower scores than those in the group. Likewise, at pre to follow-up, total scores on both the EDI and IBT were lower for those in the individual therapy. It is possible that the nature of individual therapy allowed for some specific areas of concern to be more thoroughly addressed. Although non-significant statistically, individual members attended on average 1 session more than group members and this may have some benefit clinically.

While some effects did favor the individual therapy, the most consistent finding of the study was that the two treatment modalities showed similar rates of change through the testing sessions. One may be tempted to conclude from this that it makes little difference whether a group or individual delivery mode is used in the treatment of bulimics. However, there are several methodological limitations with this study which when considered suggest that such a conclusion might be premature.

First, the composition of the two groups, as established at pre-treatment, revealed some significant differences. Subjects receiving group therapy reported more frequent binge-purge episodes per week, had much higher depression scores and a longer duration of illness. The age of onset of the

illness was also older for those in the group modality. The effect these imbalances may have exerted on the treatment outcome cannot be ascertained. A matched pair design would have been ideal and no doubt would have greatly reduced the between group differences. However, in order to minimize the waiting time for referrals, the first eight subjects were assigned to receive group therapy.

To some extent it is not surprising that those in the group therapy were more severely ill. It has been observed in other studies that those who respond to advertisements first, tend to be those who are more seriously ill (Boskind-Lodahl and White, 1978; Fairburn, 1985).

Second, the distribution of individual therapy subjects between the two therapists was not equal. Therapist B treated 5 of the 7 individual therapy subjects. Therapist B was, however, fully supervised by Therapist A. A further factor relating directly to the role of the therapists is that of the delivery of therapy. In the group modality, therapy was delivered conjointly in all but two sessions. Conversely, in the individual therapy all sessions but one were delivered exclusively by the primary therapist

(excluding the time spent during sessions with the consultants).

A third factor requiring some attention is that of the lack of incorporation of a system of checks and balances between the therapists. While the program components were identical for all subjects, whether in group or individual therapy, differences in style of delivery were not monitored. Other studies have incorporated the use of tape recorded sessions, check lists and pre-treatment training sessions to ensure therapist consistency (Fairburn et al., 1986; Freeman et al., 1985; Ordman and Kirschenbaum, 1985) across groups and subjects. Discussions following each group session and regular reviews of the individual therapy participants sessions were, however, incorporated into the program. These discussions served as an informal, although not rigorous, system of checks and balances. It is possible that a more detailed, specific system could have altered the treatment outcome.

The exact impact of these methodological impurities on the final treatment outcome cannot be determined. They should be viewed as limitations of the study and further as recommendations for change in further efforts to compare group versus individual

delivery of therapy in the treatment of bulimics.

With regard to the treatment package as a whole, the results strongly suggest it to be effective. However, from a methodological point of view the possibility that changes would have occurred spontaneously without treatment cannot be ruled out. This is due to the lack of inclusion of a control group.

In conclusion, the current investigation has demonstrated neither group nor individual delivery of a cognitive-behavioral therapy program for bulimics to be more effective. To conclude from this, however, that delivery mode of therapy for bulimics is a non-factor would be an erroneous conclusion in light of the methodological limitations observed. It is hoped that future research efforts examining delivery mode consider the limitations found in this study and take precautionary measures against them. Perhaps then a clearer picture of the effectiveness of group versus individual delivery of cognitive-behavioral therapy in the treatment of bulimia could be obtained.

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APPENDIX A.

APPENDIX A (i)

Evaluation Questionnaire

We would like to have an idea of the kinds of things you felt were effective and/or ineffective in bringing about a change in your behavior. To accomplish this we would like you to complete the following brief questionnaire as honestly as possible.

1. How did you like meeting once weekly for 90 minutes? Would you have preferred a different time schedule?

2. What did you like most about the group and its program?

3. What did you like least about the group and its program?

4. What would you change or add to the format of the weekly sessions?

5. Do you have any other "tricks" which you feel have helped you which could be incorporated into the program?

Evaluation Questionnaire

6. Below is a list of all the cognitive "tricks" you were given. Indicate with a check mark (✓) which you felt were the most helpful and indicate with an "X" which you felt to be the least helpful.

cognitive "trick"	✓	X
1. concept of "Sharing problem"	_____	_____
2. "Larger than life" body image & the biased judge - you	_____	_____
3. irrational ideas & setting standards for self	_____	_____
4. irrational ideas & being loved/liked by everyone	_____	_____
5. "Until you die" - fable regarding judgements	_____	_____
6. "interview with Dr. David Garner": Obesity etc.	_____	_____
7. "principles" list/apologies to David poem	_____	_____
8. self knowledge/infallible judge poems	_____	_____

7. Below is a list of the behavioral "tricks" you were given. Indicate with a check mark (✓) which you feel were the most helpful and indicate with an 'X' those you felt to be least helpful.

behavioral "tricks"	✓	X
1. plan activity for post-meal time	_____	_____
2. calculate cost of each binge	_____	_____
3. sit at table to eat and eat with utensils	_____	_____
4. carry "motivator card" on person at all times	_____	_____
5. plan to eat 3 meals per day	_____	_____
6. incorporate one "bad" food into your diet	_____	_____
7. "permission" not to finish everything on plate	_____	_____
8. slow down eating rate (take longer to eat meals)	_____	_____

Evaluation Questionnaire

8. Do you have any other comments, suggestions and/or recommendations?

APPENDIX A (ii)

Evaluation Questionnaire

We would like to have an idea of the kinds of things you felt were effective and/or ineffective in bringing about a change in your behavior. To accomplish this we would like you to complete the following brief questionnaire as honestly as possible.

1. How did you like meeting once weekly for 90 minutes? Would you have preferred a different time schedule?

2. What did you like most about the individual sessions and program?

3. What did you like least about the individual sessions and program?

4. What would you change or add to the format of the weekly sessions?

5. Do you have any other "tricks" which you feel have helped you which could be incorporated into the program?

Evaluation Questionnaire

6. Below is a list of all the cognitive "tricks" you were given. Indicate with a check mark (✓) which you felt were the most helpful and indicate with an "X" which you felt to be the least helpful.

cognitive "trick"	✓	X
1. concept of "Sharing problem"		
2. "Larger than life" body image & the biased judge - you		
3. irrational ideas & setting standards for self		
4. irrational ideas & being loved/liked by everyone		
5. "Until you die" - fable regarding judgements		
6. "interview with Dr. David Garner": Obesity etc.		
7. "principles" list/apologies to David poem		
8. self knowledge/infallible judge poems		

7. Below is a list of the behavioral "tricks" you were given. Indicate with a check mark (✓) which you feel were the most helpful and indicate with an 'X' those you felt to be least helpful.

behavioral "tricks"	✓	X
1. plan activity for post-meal time		
2. calculate cost of each binge		
3. sit at table to eat and eat with utensils		
4. carry "motivator card" on person at all times		
5. plan to eat 3 meals per day		
6. incorporate one "bad" food into your diet		
7. "permission" not to finish everything on plate		
8. slow down eating rate (take longer to eat meals)		

Evaluation Questionnaire

8. Do you have any other comments, suggestions and/or recommendations?

APPENDIX B.

Ethics Form for Research

Employing the Introductory Subject Pool

Name of Researcher: Alison Reynolds

Supervisor (if appropriate): Dr. A. P. Thompson.

Title of Research: A comparison of group vs. individual therapy in the treatment of bulimics.

Number of Subjects Required: 8 (who meet DSM III diagnostic criteria)

Hours per Subject Required: 120 (8 x 1.5 hrs)

Total Subject Hours: 960

1. Please attach an abstract (maximum 250 words) describing your research project. Be sure to include in the abstract, clear information about the procedure and measures to be used. If the measures are not standard or commonplace, a copy, or detailed description, of them should be attached as well.

2. Please answer the following questions about your research.

   A. Is there deception involved in the research?

      YES (NO)

      (circle your answer)

      If yes, describe the deception and whether or not you are going to inform the subject about it.

      _____

      _____

      _____

      _____