CLINICAL RESEARCH

Controlled trial of psychotherapy for bulimia nervosa

C P L FREEMAN, F BARRY, J DUNKELD-TURNBULL, A HENDERSON

Abstract

In a randomised controlled trial of different types of psychotherapy for bulimia 92 women were assigned to receive cognitive-behaviour therapy (n=32), behaviour therapy (30), or group therapy (30) for 15 weeks and a further 20 (controls) assigned to remain on a waiting list for 15 weeks. Eating behaviour and psychopathology were assessed by standard methods. At the end of the trial the controls had significantly higher scores than the treated groups on all measures of bulimic behaviour. In terms of behavioural change all three treatments were effective, 71 (77%) of the 92 women having stopped bingeing. In addition, scores on eating and depression questionnaires were reduced and self esteem improved. Follow up was continuing, but of 24 women available at one year, 21 were not bingeing and had maintained their improved scores on psychometric scales.

Bulimia nervosa is amenable to treatment by once weekly structured psychotherapy in either individual or group form.

Introduction

The syndrome of bulimia nervosa has been recognised only comparatively recently. Over the past five years it has become the commonest type of eating disorder treated by psychiatrists and psychologists. The central feature is a powerful and intractable urge to overeat. The actual amount of food consumed in binges varies from patient to patient. The episodes of overeating are experienced as excessive, unpleasant, and beyond voluntary control. Studies show that bulimia tends to start in women in late adolescence or

early adulthood. A high prevalence of depressive symptoms has been found.¹⁻³ Bulimic women have been reported as extremely prone to attempted suicide.⁴ Bulimia has also been associated with self mutilating behaviour,^{5,6} alcohol and drug abuse,² and low self esteem.^{2,7}

Reports suggest that bulimia nervosa is comparatively easy to treat.^{8,9} Studies have not always included a control group, nor have differences between treatments been studied. Treatments have not been described in enough detail for the salient features affecting outcome to be identified. Studies have usually been on small numbers of subjects. The analysis of dropouts' scores has often been ignored. We describe a study that was designed to remedy these deficiencies. Women with bulimia are usually employed or in full time education, and in terms of time and resources one hour of psychotherapy a week is the maximum that the National Health Service can provide. The treatments were all designed to be within these parameters and to be delivered by therapists without prohibitively prolonged training.

Patients and methods

All patients met the criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* (DSM-III) for bulimia.¹⁰ We considered that these were too loose for our study, however, and so made further requirements. Patients had to be women aged 18 and over. The bulimia had to be established (bingeing, vomiting, and laxative abuse may occur as a passing phase in some young girls) and patients had to have binged at least three times in the previous month. In addition, they had to agree to stay in Edinburgh for the four months of the programme and to keep detailed diaries of eating and bulimic behaviour. Patients had to have no history of psychotic illness. With these further requirements we found in retrospect that all 112 patients in the series met the criteria of the revised DSM-III (DSM-III-R).¹¹ In addition, 106 patients (95%) met the more stringent criteria suggested by Fairburn and Garner¹² and 96 patients (86%) Russell's criteria.¹ In terms of age, chronicity, weight history, and so on the subjects were similar to those described in other British studies.^{9,12,13}

Patients were allocated to four groups. Women on a waiting list were assigned to serve as controls. The three treatment options were cognitive-behaviour therapy, behaviour therapy, and group therapy. Assignment to the different treatments was by restricted randomisation. In order that patients did not have to wait unduly before starting treatment the ratio of randomisation was altered as a new group was about to begin.

Power calculations with Pocock's formula were used to determine sample size.¹⁴ Pilot studies had shown that we could expect a 90% improvement in

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successfully treated patients and that a 50% improvement was not considered by sufferers or therapists as satisfactory. A sample size of 30 patients in each group would detect a 90% improvement in one treatment compared with a 70% improvement in another with values of alpha and beta being 0.05.

Treated patients kept detailed diaries of eating and bulimic behaviour during the two week assessment period and at regular times during treatment. At assessment very extensive personal histories and histories of weight and eating behaviour were taken and all the standard questionnaires on eating, dieting, and restraint administered. In addition, associated psychopathology was gauged by asking the women to complete self rating scales of self esteem, depression, and anxiety. The Montgomery and Asberg depression scale (MAD) was completed for each subject.¹⁵ All these measures were repeated halfway through and at the end of treatment. Weekly diaries of all food eaten, binges, and so on were also required at these times and at each three month follow up.

Controls were assessed more briefly to minimise the potential non-specific therapeutic effects of assessment. They kept an eating diary for a week to establish a basic rate of bulimic behaviour and completed the bulimic investigatory test (BITE) questionnaire. A further appointment was made for 15 weeks later, the patients being assured that by that time the accumulation of patients would have been cleared and they could then start treatment. At that interview the personal and weight and eating histories were taken, patients completed the end of treatment questionnaires, and they handed in their completed eating diaries.

TREATMENTS

Patients were randomly allocated to the three treatment groups (cognitive-behaviour therapy, behaviour therapy, or group therapy) and to one of two women therapists for individual treatment. The groups were run by both therapists working together. All treatments consisted of 15 weekly sessions of about one hour and were aimed at helping the patient to stop bingeing, inducing vomiting, and abusing purgatives and re-establish a normal eating pattern. Treatment sessions were recorded and discussed regularly. Occasionally videotape sampling was used to ensure adherence to the programme and groups were viewed through a one way screen.

Individual treatment—The two therapists gave both types of individual treatment to reduce the likelihood of any differences between the treatments being due to the therapists. To facilitate this structured formats were developed for each type of treatment, but which permitted flexibility to cope with patients who progressed at different rates.

Behaviour therapy focused on the eating pattern itself and was aimed at re-establishing a normal pattern, consisting of three meals a day with snacks between meals, with no self induced vomiting, purgative abuse, or dieting. Only behavioural techniques were used, which included self monitoring, systematic modification of eating behaviour using graded tasks, and the teaching of alternative coping strategies, including relaxation training.

Cognitive-behaviour therapy—The main focus of cognitive-behaviour therapy was the patients' dysfunctional beliefs about and preoccupation with food, eating, weight, and shape, which are strengthened by the bulimic pattern of behaviour and which maintain and perpetuate it. Patients were taught to identify and record these negative thoughts, to evaluate them, and to generate more reasonable and positive counterarguments. They were encouraged to test these alternatives by trying to alter their behaviour in accordance with them using graded behavioural tasks similar to those used in behaviour therapy.

Group therapy—The group therapy sessions were supportive and educational in orientation. The emphasis was on mutual support and on providing information on bulimia nervosa. Sessions were semistructured in that there was a specific topic for each week, which the therapists talked about for around 15 minutes. Group members then discussed the topic, with only non-directive intervention from the therapists. Behavioural tasks—whenever possible related to the topic which had been discussed—were agreed on each week for each group member and discussed in the subsequent session.

STATISTICS AND ETHICS

All statistical analysis was carried out with SPSSX (the statistical package for the social sciences) and the Minitabs program on an ICL 2988 mainframe computer running on the Edinburgh multiaccess system. In most cases non-parametric statistics were used and the tests used are stated below. 95% Confidence intervals are reported. In some cases despite a significant difference between medians the associated confidence interval contains the value 0. This is because exact levels of confidence could not be attained by

distribution free methods and only certain end points were available for the intervals.

All patients gave informed consent and the trial was approved by the local ethical committee.

Results

The 112 women recruited for the trial were predominantly single ($n=89$; 79%), childless (96; 86%), Protestant (67; 60%), from social classes I and II (55; 49%), and living with both parents when their eating problems began (92; 82%). Fifty six (50%) were educated to graduate level. Nineteen (17%) had been less than three quarters of their matched population mean weight and 50 (45%) more than 125% of their matched population mean weight.¹⁶ Table I gives their clinical details.

TABLE I—Clinical details of patients studied

	Mean	SD	Minimum	Maximum
Age (years)	24.2	5.6	18.0	42.0
Height (cm)	164.7	6.4	149.0	180.0
Age at onset of bulimia nervosa (years)	18.2	4.6	10.0	37.0
Age at onset of vomiting (years)	19.1	4.4	11.0	40.0
Age at onset of laxative abuse (years)	20.8	5.4	15.0	40.0
Duration of bulimia nervosa (years)	6.0	4.9	0	19.0
Age at menarche (years)	12.9	1.3	10.0	16.0
Weight (% of matched population mean weight)*:				
At assessment	108.2	16.1	75.0	161.0
At end of treatment	111.0	14.4	84.0	154.0
Highest past as adult	123.4	18.3	79.0	171.0
Lowest past as adult	89.3	14.1	60.0	122.0
Patient's desired ideal at assessment	93.3	7.2	73.0	110.0
Patient's desired ideal at end of treatment	96.8	7.6	73.0	112.0

*Geigy Pharmaceuticals, *Scientific Tables*.¹⁶

TABLE II—Mean weekly frequency of bingeing in treatment and control groups at various times during trial

	Behaviour therapy	Cognitive-behaviour therapy	Group therapy	Controls
Before treatment	4.6	6.2	6.3	5.7
Mid-treatment (week 8)	0.9	2.1	3.0	—
End of treatment (week 15)	0.6	1.3	0.8	3.7
Three months	0.3	0.7	0.8	—
One year	0.9	0.3	0	—

Randomisation—Twenty of the women were assigned to remain on the waiting list (controls). Of the other 92 women, 32 were assigned to receive cognitive-behaviour therapy, 30 to receive behaviour therapy, and 30 to receive group therapy.

Dropouts—Dropout rates of 30-40% are commonly reported in treatment studies of bulimia nervosa.¹⁷⁻¹⁹ In this study four of the controls failed to keep their appointments at the end of the 15 week period and 27 of the 92 women assigned to treatment dropped out before it was completed. The χ^2 test showed no significant difference among the treatment groups in rates of dropping out (11 women assigned to cognitive-behaviour therapy, five assigned to behaviour therapy, 11 assigned to group therapy).

Comparability of control and treatment groups—There was no significant difference at the outset between patients assigned to the control group and those randomised to receive treatment (χ^2 analysis). Scores of the 16 controls who returned at the end of the 15 weeks were therefore compared with those of the 65 women who continued until the end of treatment. The bulimic investigatory test scores obtained by the controls were significantly different from those of patients in the treatment groups ($U=89$; two tailed $p=0.0005$), as were the eating attitudes test (EAT26) scores ($U=195.5$; two tailed $p=0.0038$) (Mann-Whitney U test). Table II shows the rates of bingeing in the controls at initial assessment and 15 weeks later. Results of sign tests on rates of bingeing, vomiting, and laxative abuse in the controls before and after the waiting period were all non-significant.

Associated impulse related behaviour at assessment—Detailed characteristics of the patients will be reported separately. Compared with other series, however, comparatively few of the women had shoplifted (five), attempted

suicide (four), or mutilated themselves more than five times in adulthood (eight). Four women reported taking illegal drugs regularly. Only seven women drank more than 20 units of alcohol a week.

Differences among treatment groups at assessment— χ^2 Analysis showed no significant differences among the treatment groups at assessment in terms of class, religion, or other personal details. There were no differences significant at the 1% level among the treatment groups at assessment in rates of bulimic behaviour, scores on the eating questionnaires, or on psychopathological scales. The Wilcoxon test showed no significant differences in rates of bulimic behaviour of each patient between the first and second weeks of assessment, so that mere attendance for treatment and the completion of all the tasks of assessment had no detectable effect.

EFFECT OF TREATMENT

Table II shows the rates of bingeing before, during, and at the end of treatment or the control period and at the three month and one year follow ups. Treatment was clearly much more effective than no treatment in reducing bingeing. Table III shows the rates of bingeing, vomiting, and laxative abuse before and after the three treatments. Rates of bingeing and self induced vomiting were significantly reduced.

The efficacy of the different treatments was calculated by comparing

TABLE III—Pretreatment and post-treatment mean (SD) weekly rates of bingeing, vomiting, and laxative abuse for each treatment group

	Binges	Self induced vomiting	Laxative abuse (mean No of tablets)
	<i>Before treatment</i>		
Cognitive-behaviour therapy	6.2 (5.0)	7.4 (10.7)	6.2 (13.3)
Behaviour therapy	4.6 (3.4)	3.6 (4.3)	5.1 (13.0)
Group therapy	6.3 (4.5)	8.9 (9.6)	14.6 (49.8)
Controls	5.7 (4.7)	8.0 (7.4)	10.4 (23.3)
	<i>After treatment</i>		
Cognitive-behaviour therapy	1.3 (3.4)**	1.0 (2.5)*	1.3 (4.4)
Behaviour therapy	0.6 (2.0)**	0.3 (0.8)**	0
Group therapy	0.8 (1.5)**	0.6 (0.9)**	4.3 (16.4)
Controls	3.7 (3.6)	9.7 (7.7)	13.5 (28.2)

Compared with before treatment: * $p < 0.05$; ** $p < 0.01$.

TABLE IV—All subject scores on questionnaires before and after treatment

Questionnaires	Estimated median of differences between pretreatment and post-treatment scores	Value*	95% Confidence interval
Bulimic investigatory test†	21.0	<0.001	18.0 to 24.0
Eating attitudes test‡:			
Total	20.0	<0.001	16.5 to 24.0
Bulimia	8.0	<0.001	7.0 to 9.5
Dieting	10.5	<0.001	8.0 to 13.0
Oral control	0.5	0.002	0 to 1.5
Eating disorders inventory§:			
Desire for thinness	7.0	<0.001	5.5 to 9.0
Bulimia	8.0	<0.001	6.5 to 9.5
Body dissatisfaction	4.0	<0.001	2.0 to 6.5
Ineffectiveness	5.5	<0.001	4.0 to 7.5
Perfectionism	2.0	<0.001	1.0 to 2.5
Interpersonal distrust	1.5	<0.001	1.0 to 3.0
Interceptive awareness	7.0	<0.001	5.5 to 8.5
Maturity fears	1.5	<0.001	0.5 to 2.0
Self esteem¶	2.0	<0.001	1.5 to 2.5
Montgomery and Asberg depression scale	7.0	<0.001	4.5 to 9.0
Irritability, depression, and anxiety scale**:			
Depression	2.0	<0.001	1.0 to 2.5
Anxiety	3.0	<0.001	2.5 to 4.0
Outward irritability	2.0	<0.001	1.5 to 2.5
Inward irritability	3.5	<0.001	3.0 to 4.5

*Two tailed test with Wilcoxon matched pairs signed ranks non-parametric test.

†Henderson and Freeman.²⁴

‡Garner *et al.*²⁵

§Garner *et al.*²⁶

¶Rosenberg.²⁷

||Montgomery and Asberg.¹⁵

**Snaith *et al.*²⁸

TABLE V—Questionnaire scores before and after behaviour therapy

Questionnaires	Estimated median of differences between pretreatment and post-treatment scores	Value*	95% Confidence interval
Bulimic investigatory test†	22.8	<0.001	18.0 to 27.5
Eating attitudes test‡:			
Total	22.0	<0.001	15.5 to 29.0
Bulimia	8.0	<0.001	6.0 to 10.0
Dieting	11.0	<0.001	7.5 to 14.5
Oral control	0.5	NS	0 to 2.5
Eating disorders inventory§:			
Desire for thinness	9.0	<0.001	6.0 to 12.0
Bulimia	8.0	<0.001	6.0 to 10.0
Body dissatisfaction	6.0	0.004	2.0 to 9.0
Ineffectiveness	8.5	<0.001	5.5 to 11.0
Perfectionism	1.5	0.02	0.5 to 3.0
Interpersonal distrust	3.0	<0.001	1.5 to 4.0
Interceptive awareness	7.0	<0.001	5.0 to 10.5
Maturity fears	1.5	NS	0 to 3.0
Self esteem¶	2.5	<0.001	1.5 to 3.5
Montgomery and Asberg depression scale	9.0	<0.001	5.5 to 12.5
Irritability, depression, and anxiety scale**:			
Depression	2.5	0.001	1.5 to 3.0
Anxiety	4.0	<0.001	2.5 to 5.0
Outward irritability	2.5	<0.001	1.5 to 4.0
Inward irritability	4.5	<0.001	3.0 to 6.0

*Two tailed test with Wilcoxon matched pairs signed ranks non-parametric test.

†Henderson and Freeman.²⁴

‡Garner *et al.*²⁵

§Garner *et al.*²⁶

¶Rosenberg.²⁷

||Montgomery and Asberg.¹⁵

**Snaith *et al.*²⁸

TABLE VI—Questionnaire scores before and after cognitive-behaviour therapy

Questionnaires	Estimated median of differences between pretreatment and post-treatment scores	Value*	95% Confidence interval
Bulimic investigatory test†	22.0	<0.001	17.0 to 28.5
Eating attitudes test‡:			
Total	18.5	<0.001	13.5 to 24.0
Bulimia	8.0	<0.001	6.5 to 10.0
Dieting	10.5	<0.001	6.5 to 14.5
Oral control	0.5	NS	0 to 1.0
Eating disorders inventory§:			
Desire for thinness	6.0	0.002	2.5 to 10.0
Bulimia	8.0	<0.001	5.5 to 10.5
Body dissatisfaction	4.0	0.009	1.0 to 7.0
Ineffectiveness	4.5	0.007	1.5 to 8.5
Perfectionism	1.5	NS	0 to 3.5
Interpersonal distrust	1.5	NS	-0.5 to 3.5
Interceptive awareness	6.5	<0.001	4.0 to 9.5
Maturity fears	1.0	NS	0 to 2.5
Self esteem¶	1.5	0.01	0.5 to 3.0
Montgomery and Asberg depression scale	6.0	0.006	2.5 to 9.5
Irritability, depression, and anxiety scale**:			
Depression	1.5	0.03	0 to 3.0
Anxiety	3.0	<0.001	2.0 to 4.0
Outward irritability	2.0	0.002	1.0 to 3.0
Inward irritability	3.5	0.001	2.0 to 5.0

*Two tailed test with Wilcoxon matched pairs signed ranks non-parametric test.

†Henderson and Freeman.²⁴

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§Garner *et al.*²⁶

¶Rosenberg.²⁷

||Montgomery and Asberg.¹⁵

**Snaith *et al.*²⁸

patients' scores at assessment with those at the end of treatment. Wilcoxon matched pairs signed ranks tests were used. Dropouts were included in this analysis. As most patients who dropped out did so very early in treatment assessment ratings were used as their final scores. Highly significant differences were found both on eating scales and on scales of psychopathology (tables IV-VII). There were no significant changes in the controls on any measure.

TABLE VII—Questionnaire scores before and after group therapy

Questionnaires	Estimated median of differences between pretreatment and post-treatment scores	Value*	95% Confidence interval
Bulimic investigatory test†	17.0	<0.001	11.5 to 23.0
Eating attitudes test‡:			
Total	19.5	<0.001	13.5 to 26.5
Bulimia	8.5	<0.001	6.0 to 11.0
Dieting	10.5	<0.001	5.0 to 15.0
Oral control	1.0	0.04	0 to 3.0
Eating disorders inventory§:			
Desire for thinness	5.5	0.002	2.0 to 9.0
Bulimia	7.5	0.002	6.0 to 10.0
Body dissatisfaction	1.5	NS	-1.0 to 8.0
Ineffectiveness	3.0	0.05	0 to 6.0
Perfectionism	2.0	NS	0 to 4.0
Interpersonal distrust	0	NS	-1.0 to 2.5
Interceptive awareness	6.5	0.003	3.0 to 10.0
Maturity fears	1.5	0.004	0.5 to 3.5
Self esteem¶	1.5	0.005	0.5 to 3.0
Montgomery and Asberg depression scale	4.5	NS	0 to 8.5
Irritability, depression, and anxiety scale**:			
Depression	2.0	0.04	0.5 to 3.0
Anxiety	2.5	0.002	1.0 to 5.0
Outward irritability	1.0	0.05	0 to 2.0
Inward irritability	3.0	0.006	1.0 to 4.5

*Two tailed test with Wilcoxon matched pairs signed ranks non-parametric test.

†Henderson and Freeman.²⁴‡Garner *et al.*²⁵§Garner *et al.*²⁶¶Rosenberg.²⁷||Montgomery and Asberg.¹⁵**Snaith *et al.*²⁸

DIFFERENCES IN RESULTS OF ACTIVE TREATMENTS

Several significant differences among the treatments were found by using the Mann-Whitney U test (table VIII).

Behaviour therapy v group therapy—All the significant differences between behaviour therapy and group therapy related to lower scores in the behaviour therapy group on certain measures of disorder at weeks 8 (midway

Group therapy v cognitive-behaviour therapy—There were no significant differences between the results of group therapy and cognitive-behaviour therapy at the end of treatment but patients given cognitive-behaviour therapy had lower bulimic investigatory test scores at week 8, suggesting that bulimic behaviour and attitudes improved more quickly with this treatment. Numbers at follow up were small but there appeared to be longer term differences between the treatment groups. Patients given cognitive-behaviour therapy had lower scores in outward irritability on the irritability, depression, and anxiety scale (IDA) at the six month follow up and higher scores on the DIET subscale of the eating attitudes test at nine months.

Patients in both groups given individual treatment had significantly lower scores on the interoceptive awareness scale of the eating disorders inventory at week 8 than patients given group therapy. This suggests that they became more aware of their feelings, both physical and emotional, more quickly than patients given group therapy.

Behaviour therapy v cognitive-behaviour therapy—The two groups given individual treatment showed no difference on any measure at week 8. Women given cognitive-behaviour therapy, however, had higher scores on the body dissatisfaction scale of the eating disorders inventory at week 15; this may be a predictor of relapse, as body dissatisfaction is a central feature of bulimia nervosa. In order to ensure that there were no therapist effects results were analysed separately; no differences were found.

FOLLOW UP

At the time of reporting 55 patients were coded for analysis at three months after treatment, 38 at six months, 28 at nine months, and 24 at one year. Follow up was intended to continue for up to two years. It was already clear that some patients were very resistant to follow up when they perceived themselves to be cured and others when they had lapsed after successful treatment.

Discussion

This study shows that bulimia nervosa may effectively be treated by psychological means. We had thought that cognitive-behaviour therapy might be the most powerful treatment for this condition, but this was not the case. Most of the advantages that were found

TABLE VIII—Significant differences among treatments on certain questionnaires at week 8 (mid-treatment), week 15 (end of treatment), and three month follow ups

	Median A	Median B	p Value*	95% Confidence interval
<i>Behaviour therapy (A) v group therapy (B)</i>				
Bulimic investigatory test (week 8)	16.0	25.0	0.008	-17.0 to -2.0
Bulimic investigatory test (week 15)	9.0	15.0	0.03	-15.0 to -1.0
Eating disorders inventory: interoceptive awareness (week 8)	3.0	8.5	0.004	-8.0 to -2.0
Eating disorders inventory: bulimia (week 15)	0	1.0	0.05	-4.0 to -0.01
Eating disorders inventory: interpersonal distrust (week 15)	1.0	3.0	0.03	-3.0 to -0.01
Irritability, depression, and anxiety scale: anxiety (week 8)	6.0	8.0	0.03	-3.4 to 0.01
Irritability, depression, and anxiety scale: inward irritability (week 8)	2.0	4.5	0.009	-3.4 to -1.0
Irritability, depression, and anxiety scale: inward irritability (three months)	2.0	3.5	0.04	-4.0 to -0.01
<i>Group therapy (A) v cognitive-behaviour therapy (B)</i>				
Bulimic investigatory test (week 8)	25.0	16.0	0.02	1.0 to 15.0
Eating disorders inventory: interoceptive awareness (week 8)	8.5	5.0	0.009	1.0 to 7.0
Irritability, depression, and anxiety scale: outward irritability (six months)	4.0	3.0	0.04	0.01 to 5.0
Eating attitudes test: diet (nine months)	0	6.5	0.02	-18.0 to -1.0
<i>Cognitive-behaviour therapy (A) v behaviour therapy (B)</i>				
Eating disorders inventory: body dissatisfaction (week 15)	20.0	12.0	0.03	1.0 to 11.0

*Mann-Whitney U test.

through treatment) and 15 (end of treatment). Patients in the behaviour therapy group had lower bulimic investigatory test scores and lower scores on the bulimia scale of the eating disorders inventory (EDI), which suggests that they had lower rates of bulimic behaviours and fewer bulimic attitudes at the end of treatment. Patients in the behaviour therapy group also had lower scores on the interpersonal distrust scale of the eating disorders inventory, which suggests that they may have benefited from the one to one relationship with their therapist. That behaviour therapy yielded lower scores than group therapy on certain scales at week 8 suggests that behaviour therapy acted more quickly.

were for straightforward behaviour therapy, which had the lowest dropout rate (17%) and tended to modify symptoms earlier than the other two treatments. There seemed to be no advantage in adding cognitive elements; they did not produce greater or more sustained behavioural change, nor did they produce more substantial attitudinal change. It was our distinct impression that tackling the presenting symptoms of bingeing and self induced vomiting and purgative abuse directly was the most important element and that any subsequent attitudinal change occurred as a consequence of

behavioural change rather than vice versa. In other words, once the patient began to get her bingeing and vomiting under control she felt better, her self esteem increased, and her distorted view of herself and her relationship to food began to alter.

It may be that more intensive approaches such as those suggested by Fairburn, whose patients were seen two or three times a week for the first three weeks,⁸ and Lacey, whose patients were seen for half a day a week,⁹ have an advantage. Such intensive treatment, however, is not often possible in an NHS setting and from our results it may not be cost effective. Most of our patients (71; 77%) were neither bingeing nor vomiting at the end of treatment, a success rate comparable with those reported by Fairburn (81%) and Lacey (80%). Possibly our dropout rate would have been less had we seen people more intensively in the initial stages of treatment.

From the therapists' point of view group therapy was the least satisfactory. The dropout rate was highest (37%) and there was a tendency for the overall improvement to be less. Patients expressed more dissatisfaction with this treatment. Nevertheless, it still proved remarkably effective for those who continued with it, and clearly it is the most cost effective approach to the disorder.

The other main treatment of bulimia nervosa has been with antidepressants. Imipramine, phenelzine, and desipramine have all been found superior to placebo in double blind controlled trials.²⁰⁻²² There have also been several open studies on newer antidepressants. All these studies have been short term without follow up, and many have not controlled for patients with severe depressive disorder who have bulimia as a symptom. It is not clear from these drug trials whether antidepressants are having a primarily antibulimic, antidepressant, or antianxiety role. What is clear is that the magnitude of change that occurs with drugs is smaller than with psychotherapy. Patients may show a 50-70% reduction in their bulimic behaviour at the end of treatment, but this means that many are still bingeing and vomiting at quite high rates. What little evidence there is therefore suggests that psychotherapy for bulimia produces greater magnitude of change, a wider range of changes across target behaviours, and more stability in terms of maintenance of any change that occurs.

Our patients showed much lower rates of other impulse related behaviours than some reported studies. Only a small proportion had engaged in shoplifting, street drug use, self mutilating behaviour, or attempted suicide. Their mean weekly alcohol consumption was exactly as reported in other surveys of Scottish women.²³ The reasons are not clear but may be due to differences in referral patterns among centres. We are the only clearly defined treatment centre in the south east of Scotland, and most of our patients were first or direct referrals. The higher rates reported elsewhere may be due to an overrepresentation of such multi-impulsive patients being referred to specialist units.

The study highlights one or two other methodological issues. It is essential to define patients in terms of all the available diagnostic criteria for bulimia and bulimia nervosa. The looseness of DSM-III criteria means that it is no longer tenable simply to state that patients meet these criteria. It is also important in such studies to ensure that all patients who are randomised are included in the analysis. Nearly all other studies of both psychotherapy and drug treatment have excluded dropouts from their analyses, which clearly biases results in favour of finding a definite treatment effect.

We conclude that bulimia nervosa is amenable to treatment by structured once weekly psychotherapy in either individual or group form. With such treatments, provided that patients complete the course roughly three quarters will be symptom free at the end of 15 weeks.

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ONE HUNDRED YEARS AGO

Admiral Inglefield, reporting on the Lady Strangford Hospital, which has now been in working order for some months, and has been of great service to many sufferers landed from steamers passing through the Suez Canal, points out that, judging from the number already received, more than 200 patients may be expected in a year; and of these, many are likely to be serious cases, chiefly sailors. Last month, 60·8 per cent. of the beds were filled. There have been seven deaths, and fifty-three patients have been discharged cured. Not only from the ordinary steamers, but also from Her Majesty's Indian troopships and other vessels of the Royal Navy, have sick been sent to the hospital. The committee have still to make up a deficiency of £1,700, and £500 more will be needed to build a separate ward for isolated cases. So many persons are interested, directly or indirectly, in those who pass through the Canal, or many have friends in India, China, or Australia and New Zealand, and not a few are concerned in Egypt, the Canal, or in ships that pass through, that the committee do not hesitate to make this appeal, in hopes that the £2,200 still required for the building fund will be supplied speedily and willingly.

(*British Medical Journal* 1888;i:9)

Correction

Antigen detection in primary HIV infection

We regret that two editorial errors occurred in this paper by Dr M von Sydow and others (23 January, p 238). The heading for table II should have read, "Time course of appearance of different serological markers of infection with HIV in a patient with primary symptomatic infection." Also, in the third paragraph of the discussion Mathiesen was twice incorrectly spelt Mathieson.