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Clinical Research Reports

Treating Bulimia Nervosa With a Stratified-Care Approach

Moria Golan, PhD, Noa Heyman, MSc, and Roni Enten, MSc

Abstract: *This study examines the long-term outcome of a stratified-care regimen for patients with bulimia nervosa. Each patient admitted to the program is stratified by severity of illness, comorbidity, and level of functioning in the community and offered a personalized program from 2 to 16 hours per week. Of 398 candidates for treatment in the community-based eating disorder treatment facilities, 257 were admitted and 141 were interviewed and served as controls. Symptoms and global outcome were assessed using the 17-item Outcome Scale devised by Eckert et al. Of the admitted patients, 24% dropped out after less than 2 months, 91% of those treated for at least 2 months achieved improvement of symptoms and general functioning, 62% were fully recovered, 22% were nearly recovered, 7% were symptomatic but less than at baseline, and 9% experienced no remission. At the 5-year follow-up from termination, 77% of treated patients were fully recovered, 3% were nearly recovered, 16% felt remission but still were symptomatic, and 4% were in poor condition. The above services address the needs of patients based on course of illness and level of functioning, allowing them to stay in the community and avoid hospitalization while discouraging enrollment in unsuccessful therapy and minimalist programs.*

Keywords: bulimia nervosa; eating disorder; treatment

The high prevalence of bulimia nervosa and of subthreshold bulimia nervosa among women, ranging from 1.0% to 5.4% across Western Europe and the United States,[1,2] highlights the need for efficient and clinically appropriate services. The existence of several effective treatments, none of which is completely effective, is common to most psychiatric conditions. Although reliable predictors of treatment outcome have yet to be identified,[3] different modifications of stepped-care treatments have been suggested in an attempt to maximize the effectiveness of treating patients, based on the assumption that treatment should be less intensive and hence less expensive and intrusive at the start.[4] However, the results of a recent large survey reported poor results.[5,6]

In the case of bulimia nervosa, the research findings suggest that cognitive behavioral therapy (CBT) is the first level of treatment and that both antidepressant medication and interpersonal psychotherapy (IPT) have potential effectiveness as second-level treatments.[7] A recent review, which included 47 randomized controlled studies of medication only, behavioral interventions only, and medication plus behavioral interventions for adults or adolescents, concluded that the evidence for behavioral treatment for bulimia nervosa is strong, but the evidence

> **"It is important to identify clients who may not respond to specific therapies and to empirically support ways to treat them."**

for self-help is weak. For harms related to medication, the evidence is strong, but the evidence is either weak or nonexistent for other interventions.[8] Positive outcomes are associated with greater social adjustment and a higher body mass index (presumably indicating less dietary restriction), as well as early progress (reduction of symptoms by session 6) in therapy.[7,8]

Because it takes longer for IPT to work, CBT may be preferred as the initial choice of therapy. For patients who

do not respond to CBT, either antidepressant medication or IPT can be considered, but the efficacy of this second-tier treatment is limited to approximately 20% of the patients. In fact, Mitchell et al[9] failed to find advantages to second-level treatments for patients with bulimia nervosa who do not succeed with initial treatment. A combination of CBT and pharmacotherapy seems to offer advantages over single treatment in the long term.[7,8,10] Because a combination of treatment is superior to single therapy,[11] and lengthy sequential treatment appears to have little value,[9] a different treatment approach is needed. This article describes the results of an integrative program using a stratified approach for the management of bulimia nervosa.

Levels of Intervention in the Stratified Management of Eating Disorders

Six levels of intervention can be envisaged in the treatment of eating disorders. The first level is some form of dietary counseling and education. This form is appropriate for a patient who is highly motivated and the symptoms are modest. The second is dietary counseling and education plus CBT, preferably in a group setting. Self-help groups are appropriate for highly motivated patients with a moderate intensity of symptoms. The third is a combination of CBT with IPT or pharmacotherapy, on an individual basis, appropriate for patients who have different levels of symptom intensity, have a regular occupation, and are motivated for recovery. The fourth level is intensive outpatient treatment, modified on an individual basis in which different combinations of the following therapies are delivered (some individually and some in group settings): nutrition counseling, psychoeducation, CBT, IPT delivered by different forms (psychologist and/or art therapist, drama or psychodrama therapist), and pharmacotherapy. This type of treatment is suitable for patients who do not respond to limited intervention, sometimes need structured eating, and yet have an occupation, which may be continued. The fifth level is a day hospital intervention or partial-day hospital program facility that provides services for patients who would otherwise receive traditional inpatient care, need step-down treatment when discharged from inpatient care to full-time life in the community, or need a step-up treatment from the outpatient program.[12] This treatment is suitable for patients who are severely ill and need more than a limited program but do not need 24-hour medical attention. Such a program provides structured eating while allowing occupations to be continued. In addition, there is evidence to show that day patient treatment may be as effective as inpatient treatment,[13,14] which is the sixth level of intervention. Hospital admission for bulimia nervosa is rather uncommon but may be indicated for patients who are medically unstable or those with psychiatric symptoms that impair the treatment of the eating disorder in a less restrictive setting.[15] This form of treatment is appropriate for a patient who requires intensive support and structure with intensive medical monitoring, psychiatric assessment, and psychotherapy.

Matching Treatment to Patients' Needs

Several predictors have been shown to be associated with positive treatment outcome in bulimia nervosa. Psychiatric comorbidity (mainly Axis I disorder), low weight at intake,[16] and unemployment[17] are the 3 pretreatment predictive variables for poor outcome. Employment rate depends more on whether the treatment is successful than on the type of treatment.[17] Dissatisfaction with body image[18] and not getting treatments[19] are the 2 posttreatment variables that predict unfavorable behaviors and relapse in patients.

On the basis of these findings, the treatment plan stratification in our facility was tailored mainly to severity of symptoms, comorbidity, and status of occupation. Those patients with psychiatric comorbidity or unemployment entered the more intensive programs. Issues of body image and intensity of intervention received special focus in the treatment plan, although there are currently no established criteria for matching the client's specific needs to the appropriate treatment and program intensity. Such criteria could be helpful for matching programs rather than changing treatment in a sequential order once the patient has failed to improve or has dropped out.[20]

Presented here are the long-term results of a cohort and comparison, natural design study with 257 patients with bulimia nervosa who were stratified to different program intensities in an outpatient facility, with treatment compared to controls with bulimia nervosa who were interviewed but did not receive treatment in this program. The relationship of treatment intensity and success is discussed.

Methods

Patients

In total, 398 female patients with bulimia nervosa were candidates for treatment in the community-based facilities for the treatment of eating disorders. Of the patients, 257 were admitted to the community facilities during 1997-2001, whereas 141 were only interviewed and did not participate in the program. These patients dropped out while on the waiting list for admission and served as controls. The patients' clinical and demographic features at baseline are summarized in Table 1. Both groups were middle class. At baseline, 2-tailed distribution, nonpaired t tests did not find any significant differences between the treated patients with bulimia and the nontreated patients with bulimia in all tested variables (age, duration of sickness, number of hospitalizations, body mass index [BMI] at start, and comorbidity). The 2 groups were also similar in terms of severity of symptoms, history of illness, and demographic data. After a complete description of the study to the patients and their parents (in cases where the patient was younger than 18 years of age), written informed consent was obtained.

Assessments

An experienced psychiatrist diagnosed the studied population for comorbidity. Assessment of psychiatric diagnoses other than eating disorders was based primarily on psychiatric interview using the Structured Clinical Interview for DSM-IV Axis I and Axis II.[21] Weight and height

Table 1.

Baseline Demographic and Clinical Features of Patients

	BN Intention to Treat (n = 257)	BN Controls (n = 141)
Demographic features		
Age, y (range, 11-40 years), mean ± SD	22.5 ± 6.1	21.6 ± 6.5
Duration of illness, y, mean ± SD	6.54 ± 6.5	5.7 ± 3.2
Employed (school, job), %	86	83
Previous treatments		
Hospitalization (times), mean ± SD	0.24 ± 0.7	0.18 ± 0.5
Outpatient, mean ± SD	3.4 ± 2.1	3.9 ± 1.5
Symptoms		
BMI, mean ± SD	22.48 ± 3.2	21.0 ± 4.9
Absence of menses, %	0	0
Binge eating, %	100	100
Vomiting, %	95	95
Laxative abuse, %	9.3	8
Comorbidity, %		
PTSD	1	0
Personality disorders	18	20
Multi-impulsive bulimia	4	3

BN, bulimia nervosa; BMI, body mass index; PTSD, posttraumatic stress disorder.

Program Structure

Treatment is personalized and modular, modified to meet the particular needs of each patient. Different levels of intensity are offered, starting with 2 hours a week and, for very intensive programs, from 6 to 16 hours a week. Medication is given when needed, and treatment is delivered through a multidisciplinary team (physician, psychiatrist, psychologists, family therapists, dietitians, social workers, art therapists, and drama therapists) in an outpatient clinic as well as via outreach services. Most sessions are held during afternoons and evenings to avoid intruding on normal activities. Clinical mentors, who are graduate-level psychology students and social workers trained to connect with clients in an intensive, informal manner (6-16 hours/week), address the outreach services in the intensive programs. Senior clinical psychologists supervise them once a week, individually and in a group setting. The mentors address the need for a holding and containing object as well as the presence of a strong source who is open for the patient emotionally. Both serve to contain those feelings that threaten to overwhelm the patient's immature emotional status by demonstrating an ability to experience those feelings while still staying safe. They also assist in verbalizing those feelings and thinking together with the patient about coping strategies. In addition, the mentors also serve as meal companions and soothing figures, representing the healthy self-caring image, which counters the maladapted patterns of interaction, cognition, and behavior. Similar to Winnicott's "good enough mother," the mentors use a time lag between a patient's demands and the satisfaction of those demands and progressively increase it with time. By postponing the satisfaction of patients' demands, the mentors induce the patients to compensate for this temporary deprivation by increasing their mental activity and understanding. As a result, patients learn to tolerate, for increasingly longer periods, both their ego needs and their instinctual tensions. Social skills training as well as leisure time activities are encouraged using cognitive behavioral

were measured during treatment and the follow-up period. Change in symptoms and global outcome were assessed using the 17-item Outcome Scale devised by Eckert et al.[22] This instrument is based on the Average Outcome Score developed by Morgan and Russell[23] and on the global clinical score of Garfinkel et al,[24] although reliability and validity data were not reported. In this scale, outcome is scored on the global rating of clinical outcome. Beside weight status, it assesses starvation and purging behaviors, laxative use, anxiety level, menses, sexual attitudes and behavior, social adjustment, educational and/or vocational adjustment, and psychological adjustment. Global outcome is defined by 4 categories:

- *Fully recovered:* full remission lasting more than 12 months
- *Good condition:* partial remission/infrequent occurrence of the symptoms

- *Intermediate condition:* improvement with frequent symptoms
- *Poor condition:* no improvement

The patients' condition was assessed after 12 months, 24 months, and 4 years. For the purpose of this study, only the 12-month and 4-year outcomes are presented.

All information was obtained via interviews with the participants (patients and controls). Dropout was defined as less than 2 months in the program. Relapse and recurrence rates were evaluated according to Kordy et al's definitions,[25] with relapse defined as a return to symptoms satisfying the full-syndrome criteria for an episode that occurs during the periods of remission but before recovery. A recurrence is the appearance of a new episode of the disorder and thus can occur only after recovery.

skills to promote less reliance on the mentors. Further along in the process, patients are encouraged to direct their hunger for relationships away from the mentors and toward new friendships.
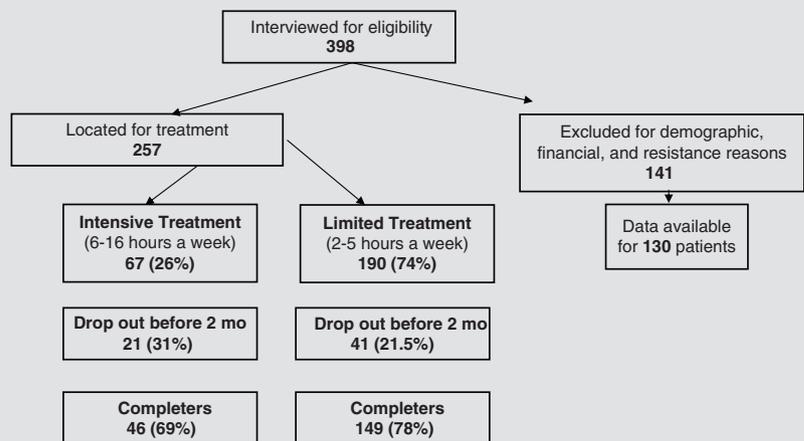
Admission Requirements

Patients must meet the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* criteria for bulimia nervosa. Patients must also be medically stable and express motivation to recover. All must sign a treatment contract outlining their agreement to attend the program regularly and to work toward normalizing eating behaviors and increase functioning.

Data Analysis

Statistical analysis was performed with the Statistical Package for the Social Sciences (SAS Institute, Cary, North Carolina). Results are given as means ± SD. Nonpaired *t* tests were used to analyze the differences between the treated patients and those in the control group at baseline and during follow-up regarding the serial variables. The Mann-Whitney *U* nonparametric test was used to test the differences between groups in the ordinal variables. Paired *t* tests were used to assess the change in the parametric dependent variables (BMI, frequency of symptoms, etc) within each group. *P* values <.01 were considered statistically significant as a result of multiple comparisons. The Wilcoxon signed rank test was used to compare change in categorical variables within each group. Correlation tests were done using Kendall's tau-b test. Logistic regression with the stepwise selection procedure was performed to study the main predictors for good global outcome (recovered or nearly recovered) at treatment termination and at the 4-year follow-up. Cox proportional hazards models were used to identify prognostic factors. To consider the predictiveness of the intensive versus limited program, we stratified the sample by program plans (limited vs intensive with clinical mentors), and models were run on the stratified samples. Covariates considered as prognostic factors include age at onset of first eating disorder episode, time since

onset of first eating disorder, comorbidity, BMI, and occupation.

Results

Of the 257 patients with bulimia nervosa who were admitted to the program, 67 (26%) were advised to be allocated to the intensive program, and 190 (74%) were advised to be allocated to the limited programs. Of those allocated to the intensive program, 55 (82%) were diagnosed as having comorbid personality disorder, posttraumatic stress disorder (PTSD), or multi-impulsive bulimia. Of the 141 patients who did not receive the treatment, the follow-up data of 130 patients were available and are presented here.

Course of Illness

Of the 257 bulimic patients admitted, 62 patients (24%) dropped out after less than 2 months in the program and before symptom withdrawal. Treatment outcome was considered in relation to those patients who were in treatment for at least 2 months (ie, 195 patients), given that the

main aim of this study was to explore predictors for success and extend the information regarding matching criteria. Data of these patients and those who served as the control are presented in Figure 1.

Symptom Remission

During the program, only 9% (n = 17) of those treated at least 3 months and 6% from the intention-to-treat sample did not experience symptom remission. Of those treated for at least 3 months, 91% achieved symptom remission. Among those who served as controls, 51 participants (39%) reported remission of symptoms.

Symptom Abstinence

Of those who terminated the program, 72% achieved symptom abstinence at program termination. The rate of symptom abstinence increased to 77% at the 5-year follow-up. Among those who served as controls, 4% reported symptom abstinence at the 1-year follow-up as an outcome of intensive treatment (hospitalization). The

Figure 1.

Flow of participants through each stage of the trial.

	Completers of extensive program	Completers of limited program	Total completers	Control group
Symptom remission:	37 (80%)	140 (94%)	177 (91%)	51 (39%)
Symptom abstinence				
At termination:	20 (43%)	120 (80%)	140 (72%)	5 (4%)
At 5-yr follow-up:	22 (48%)	128 (74%)	150 (77%)	28 (21.5%)
Recurrences:	3 (6%)	2 (1%)	5 (2.5%)	

rate of symptom abstinence among the controls increased to 21.5% at the 5-year follow-up.

Relapse Rate

Twenty-seven (14%) patients left the program before recovery was achieved, although many things in their lives had been changed. Their results are included in the treated population outcome.

Recurrence Rate

At the 12-month follow-up (after program termination), 2.5% of the treated population could be defined as recurrent.

Long-Term Outcome

At the 5-year follow-up, 77% of the treated bulimic patients were categorized as fully recovered, and 2% were in good condition (almost recovered), with improvement in symptoms but some still having (binging and rarely even vomiting) symptoms infrequently (less than once a month). All patients progressed very well in social interactions and occupation, with only 16% of the patients in intermediate condition and 5% in poor condition. Among the nontreated patients, at the 5-year follow-up, only 21.5% achieved recovery (symptom abstinence) and 12% achieved almost-recovered status, 27% were diagnosed in intermediate status (with the presence of significant eating or weight control behavior [ie, binge eating, vomiting, laxative abuse, or undue dieting or significant body image disturbance]), and 39% were still in severe condition. The difference between the treated patients and the nontreated patients was statistically significant (Wilcoxon 2-group tests; $Z = 4.29$, $P < .0001$).

Abnormal Eating Behavior

Wilcoxon signed-rank statistics found that the reduction in starvation, binging, purging, and laxative use was statistically significant in the treated bulimic patients ($P < .0001$ for the first 3 and $P < .004$ for laxative use). None of these symptoms changed significantly in the nontreated group. The Mann-Whitney U nonparametric test found significant differences

between the treated and the nontreated patients in the outcome of these parameters ($P < .0001$). Use of diuretics is not common among our clients and seems to be uncommon in Israel.

Concern About Weight and/or Shape

A significant change in the fear of becoming fat (rated from 0 = no fear to 3 = extreme fear) as well as in body image disturbance (0 = normal body image, 1 = infrequently disturbed, 2 = frequently disturbed, 3 = distorted body image) was observed in both groups, but the improvement was greater in the treated patients (statistically significant at $P < .0001$). At the 5-year follow-up, 52% of the treated patients did not have a fear of becoming fat, whereas only 7% of the nontreated patients were relieved of this preoccupation.

Menses and Sexuality

All bulimic patients had cyclical menses at the outset of treatment. At the 1-year and 5-year follow-up, 93% of the patients had normal development and attitude toward sexuality. The rest reported disturbance in their attitudes to some extent. A significant improvement in sexuality was observed among the treated patients ($Z = 390$; $P < .0001$), whereas none was observed in the nontreated group, as tested by Mann-Whitney U nonparametric tests ($Z = –6.1$; $P < .0001$).

Social and Occupational Adjustment

Social functioning was defined as follows: 0 = good couple, familial, and friendship relationships; 1 = having connections only with 2 of the 3 areas; 2 = having connections only with 1 of the 3 areas; and 3 = the connections are disturbed in all 3 areas. Occupational functioning was defined as follows: 0 = regular presence at school or work, 1 = arrive at occupational place but function less than the potential, 2 = frequently missing from school or work, and 3 = do not work or learn. There was a significant improvement in the social adjustment as well as in the occupational status of the treated patients (both had $P < .0001$

tested by Wilcoxon signed-rank statistic). Although the nontreated group also had significant improvement ($P < .002$ in both parameters) in these 2 parameters, statistically significant differences were noted between the 2 groups when tested by Mann-Whitney U nonparametric tests ($Z = –6.1$, $P < .0001$ for social functioning; $Z = –4.6$, $P < .0001$ for occupation improvement). In addition, before the treatment, 14% of the treated patients were unemployed or dropped out of school. At the end of the program, none were unemployed or out of school.

Psychological Adjustment

Psychological adjustment refers to the degree that patients suffer from depression symptomatology, anxiety, obsessions and compulsion, substance-dependent behaviors, or antisocial behaviors. Eckert et al[22] scored psychological adjustment as follows: 0 = when absent, 1 = when it is minor and hardly an impediment to functioning, 2 = when it is intermediate regarding its impediment to functioning, and 3 = when there is a severe impediment to functioning. A significant improvement was observed in both groups at the 5-year follow-up, although the differences in the rate of improvement were statistically significant, with superiority in the treated patients (Mann-Whitney U nonparametric tests, $Z = –4.49$, $P < .001$). The mean global score of the status (mean of scores that ranged from 0 to 3) at the 5-year follow-up was 0.48 ± 0.8 for treated patients and 2.25 ± 0.6 for nontreated patients. Two-sided t tests showed a statistically significant difference between the mean global score of the 2 groups ($T = 4.33$, $P < .0001$). Kendall tau correlation coefficients found a statistically significant correlation between comorbidity and the global outcome score ($r = .30$, $P = .03$). Those who had more severe comorbidity (personality disorders, PTSD, multi-impulsive bulimia) had the lowest global scores at the 1-year and 5-year follow-ups. These correlations were found only in the treated group. Logistic regression with the stepwise procedure, where the global outcome was the independent variable, selected the fear of becoming

fat (by the procedure) as the independent variable with the highest predictive value for success. The odds ratio of those who had a higher fear of becoming fat was 7.65 (*P* for chi-square <.009).

However, when the global score at the 5-year follow-up was the dependent variable, the procedure chose the improvement in psychological adjustment as the parameter with the highest predictive value for long-term success (full or nearly full recovery). The odds ratio for the improvement in the psychological adjustment was 21.15 (*P* for chi-square <.005).

Treatment Intensity

Ninety-one patients (35% of the admitted patients) were diagnosed as having comorbid personality disorder, multi-impulsive bulimia, or PTSD. Fifty-five (60%) were assigned to one of the intensive programs (6-16 hours a week), and the others (45%) managed well with one of the nonintensive programs. Twelve (4.5%) more patients from the admitted population were assigned to intensive programs, although they were not diagnosed as having comorbid personality disorder, PTSD, or multi-impulsive bulimia, but they had severe symptoms and a very low functioning status. On average, those participating in the intensive programs with clinical mentors received 12 ± 3.7 hours per week. The mean length of the intensive programs was 16 ± 2.4 months.

Those who were assigned to the nonintensive programs (programs that did not include clinical mentors) incorporated between 2 and 5 hours a week (average 3.4 ± 1.3 hours per week). The mean duration of treatment with nonintensive programs was 11 ± 3.6 months.

A comparison between the characteristics of those who were selected for the intensive programs and those who did not need the intensive program was performed. Those who were selected for an intensive program had a significantly more problematic history regarding number of hospitalizations (independent sample, 2-tailed *t* test with *F* = 28, *P* = .009). They had significantly longer treatment duration (16 months on average in the intensive program compared

to 11 months for those selected for the nonintensive programs), and the total cost was also higher, with statistical significance (*F* = 7.3, *P* = .014). Garfinkel's mean global score of the less severe patients at the 5-year follow-up was 0.22 ± 0.7 (very close to full recovery is scored as 0), whereas those assigned to intensive programs were scored as 1 ± 1.13 (which is an "almost recovered" status). The correlation coefficient between global outcome at the end of the treatment and treatment intensity was .354 (*P* = .01), whereas the long-term outcome had higher correlations reaching .62 (*P* = .000) with Kendall's tau-b for nonparametric variables.

Costs

The average cost of the nonintensive programs was $11 000 per program. The mean duration of these programs was 11 ± 3.6 months. The intensive programs' costs ranged between $22 500 and $40 000, with a mean cost of $22 270 per program, and mean length was 16 ± 2.4 months. Kendall tau correlation coefficients found a statistically significant correlation between the costs and the comorbidity (*r* = .22, *P* < .01), costs and duration of illness (*r* = .52, *P* < .0001), and costs and global outcome after 5 years (*r* = .22, *P* < .001). Those that had longer duration of illness had comorbidity and got more intensive programs with better results in the long term.

Discussion

Although there has been much study of long-term outcome in bulimia nervosa treatments, the response rate is low and treatment resistance is common.[3,8,26,27] Widely differing patient needs and available therapeutic modalities, ranging from simple advice to intensive inpatient care, call for matching therapeutic strategies, programs, and settings to particular patients' needs. Because reliable predictors of treatment outcome have yet to be identified,[3] different modifications of stepped-care treatments were suggested in an attempt to maximize the effectiveness of treating patients, based on the assumption that treatment should be less

intensive and hence less expensive and intrusive at the start.[4]

The present study aimed to evaluate the efficacy of a stratified-care facility for the treatment of bulimia nervosa, where therapeutic interventions were tailored to the stage of the course and morbidity to optimize the outcome. The long-term outcome in our study indicated that 91% of the treated population in the described facilities achieved symptom remission, and 72% of those who terminated the program achieved symptom abstinence at program termination and 77% at the 5-year follow-up. In comparison, only 22% of those who were not treated achieved symptom abstinence at the 5-year follow-up. In addition, 12% achieved improvement and were diagnosed as almost recovered, whereas all the others—66%—were still symptomatic.

Very little is known about the long-term prognosis of patients with untreated bulimia nervosa. Over a 1- to 2-year period, a community sample reported modest degrees of spontaneous improvement, with roughly 25% to 30% reduction in binge eating, purging, and laxative abuse.[27] The results reported here in the intensive facilities are very promising with regard to recent publications. The overall short-term success rate for patients receiving psychosocial treatment or medication has been reported to be 50% to 70%.[28] Relapse rates between 30% and 50% have been reported for successfully treated patients after 6 months to 6 years of follow-up, and some data suggest that slow improvement continues as the period of follow-up extends to 10 to 15 years.[27-31] In a large study of the long-term course of patients with bulimia nervosa, 6 years after successful treatment in an intensive program,[30] outcomes of 60% of the patients were rated as good, 29% were of intermediate success, and 10% were poor, with 1% deceased. Kordy et al[25] also reported a 60% improvement in symptoms among bulimic patients at a 2.5-year follow-up, but only 18% achieved full remission and 16% were considered recovered. Only 30% experienced remission at treatment termination. The high odds ratio (OR = 21)

of the improvement in the psychological adjustment for recovery at the 5-year follow-up of the studied patients in our program supports the importance of prolonged psychotherapy in the treatment of bulimia nervosa. Still, the literature indicates that psychotherapy-only approaches fail to treat bulimia nervosa.[3,7,8] Recently, Le-Grange et al[32] evaluated a family-based treatment and supportive psychotherapy for adolescents with bulimia nervosa. Categorical outcomes at posttreatment demonstrated that 39% of those who received the family-based treatment and 18% of those who received supportive psychotherapy were binge-and-purge abstinent at 6 months after treatment termination. The number of women who continued to meet full criteria for bulimia nervosa as well as impaired social functioning and interrelationships after long periods of treatment and a few integrative or stepped-care interventions[28,33] required implementation of procedures. Dalle et al[34] suggest that CBT should be the preferred first treatment for patients with bulimia nervosa. Wilson et al[6] suggest that those who did not achieve 70% reduction of purging by session 6 during CBT should be assigned to a second step treatment: medication, IPT, or both.

In comparison with the numerous trials supporting the efficacy of CBT, the evidence sustaining similar therapies (eg, IPT or pharmacological therapy) is weaker.

We argue that patients who have certain criteria, such as comorbidity, multi-impulsive bulimia, and social dysfunction, as well as treatment-resistant patients should be assigned to intensive programs from the beginning to avoid unnecessary frustrations, failures, and demoralization as well as the negative impact on the patients' self-esteem and the danger of reducing their motivation to continue trying to change. The studied population presented in this article had a comorbidity rate of 23%, which is within the range described in the literature. Studies showed high rates of diagnostic co-occurrence between eating disorders and personality disorders.[35-37] Johnson et al[38] showed that borderline patients with bulimia had poorer treatment outcome than nonborderline patients with

bulimia. Several studies have noted that patients with multi-impulsive bulimia nervosa and patients with bulimia and borderline personality tend to be refractory to treatment and often need inpatient care in a highly structured environment where the patients are able to be prevented from acting out in self-destructive ways.[36-38]

Most of the patients allocated to the intensive program (quarter of applicants) had comorbidity of personality disorders or multi-impulsive bulimia, and one third were socially dysfunctional. The intensive programs address the desire to avoid unnecessary hospitalization of patients with severe eating disorders while challenging the patients' rehabilitation and integration in the community. Clinical mentors served as their outreach agents of change, accompanying them while trying to cope with the severe behavioral symptoms and the dysfunctional status of their natural environment, in parallel to the multidisciplinary team that also participated in this plan. In most of our cases (above 90%), the intensive outpatient support succeeded in preventing hospitalization.

Intensive programs, such as hospital day programs, have both financial and clinical advantages over traditional inpatient care, but most of all, they allow the patient to maintain social and vocational roles. The course of treatment of those in the intensive program differed from the rest of the population in its higher rate of dropout and lower rate of symptom abstinence, even though these patients were allocated to a more intensive intervention. This subgroup showed a similar eating pathology but more severe general psychopathology. This is in contrast to the findings by Zeeck et al,[39] who reported that only a minority (13.8%) of bulimic patients had a borderline personality disorder. Over the course of treatment, borderline patients started with higher levels of pathology, but they were reduced to a similar extent by the end of treatment. The authors support the notion that bulimic patients with a personality disorder are more often in need of an intense treatment setting not because of bulimia nervosa but because

of the more severe general psychopathology. Therefore, treatment should focus not only on eating pathology but also on interpersonal and social problems, self-destructive behaviors, self and body image, and impulse and affect regulation. All these parameters are included in the intensive program that we provide to our patients.

We often see desperate bulimic patients, who need intensive community treatment, become hospitalized because of a to lack of facilities. For approximately half the cost of 1 month of inpatient care followed by weekly therapy, patients could be provided with a year of 4 outpatient sessions per week, divided between psychotherapy and meal planning or exposure sessions.[6] If the average stay in the hospital for patients in Israel is 4 months, with a cost of about $34 000, for the same price, a patient could get intensive outpatient services with clinical mentors practicing different kinds of skills for 1 year (which is the average period needed for recovery). Striegel-Moore et al[40] computed that the mean cost for patients in inpatient programs in the United States lasting an average of 15 days was $9000. In comparison with other serious mental disorders, costs for treatment of bulimia nervosa were significantly lower than for schizophrenia but significantly higher than for obsessive-compulsive disorder. The differences were explained by the severity of cases and by the suggestion that a considerable subset of patients is being treated at a level of intensity that may be less than adequate. A flexible program may also be needed by those patients in the position of transition from inpatient units to the community, an extremely difficult transition where there is a need to bridge the gap.[41,42]

Because patients with eating disorders were found to be more dysfunctional in all domains, even after 2 years of treatment and follow-up, compared with women in the general population, they often need to practice interpersonal skills, which are often impaired among bulimic patients, even those who already have recovered from their symptoms.[28] The clinical mentors in the intensive program presented here train patients in

this domain as well. Patients who function well and have milder symptoms at the start of treatment, and who are therefore more likely to need less intensive treatments, benefit from the possibility of being treated by a multidisciplinary team with a program that is tailored to the patients' special needs. These patients often have a better prognosis than those who function poorly and whose disordered eating symptoms are of sufficient severity to merit hospitalization.[31]

As expected, the control group, which was not treated in our program, had statistically significant lower scores regarding symptom withdrawal, as well as for sexuality and social adjustment scores. However, although most patients in this group did not receive multimodal treatment, many had spontaneous improvement in the measured variables. This is consistent with Fairburn et al,[43,44] who found that statistical improvement over time was obtained for most symptoms among treated patients. Keel et al[27,45] suggested that longer term follow-up reflects the assumption that the type of treatment intervention has limited effects on longer term recovery rates.

Several limitations of this study should be noted. Although all participants in the control group were interviewed, we are not certain that they were not treated during this period. Moreover, as was explained in detail earlier, the 2 groups were not randomized, as often occurs in clinical settings. The issue of correspondence between problem severity and the intensity of the intervention needs further exploration. Unfortunately, there is little information guiding the discrimination of patients who will require treatment that is more intensive or a certain modality of treatment. Yet severity of symptoms, degree of comorbidity, and level of functioning served for the primary determination of program intensity. The lack of more standardized criteria for tailoring program intensity to patient needs is one of the study limitations. However, the high correlations found between program intensity and global outcome at short- and long-term follow-up indicate that program intensity is a very important factor in the treatment of bulimia nervosa.

The reported findings possibly reflect a selection effect and thus cannot be generalized to different populations. In addition, this is not a random sample of all women with eating disorders; all patients were treatment seeking, met the *DSM-IV* criteria for bulimia nervosa, and could finance the treatment (middle class). Participant selection biases can reduce the generalizability of research findings and lead to misestimates of intervention effectiveness. In Israel, eating disorders are not included in the community public health insurance, so patients are referred either to psychiatric hospitalization or to outpatient clinics, with no publicly funded solution for those who need intensive outpatient treatment. Because health care systems differ between countries, conclusions must be drawn with caution. Despite the study's limitations, the results are encouraging.

Further research is needed to explore clinical criteria for stratification and implementation of such an approach for different levels of morbidity. Therapists, health managers, and indeed patients might benefit from the ability to more accurately match the facilities to the patients' needs. Because the multimodal services consume time and money, enforcing certain academic structures and ongoing professional training and supervision should also be defined. It is important to identify clients who may not respond to specific therapies and to empirically support ways to treat them.

Conclusion

We have described services that address the need of a wide range and continuum of care for patients with eating disorders. Shahaf is a cost-effective facility with different levels of intensity while encouraging independence, challenging the patient's integration in the community, and focusing on wellness rather than on illness. It provides the intensity often sought in hospitalization, supplies structured eating situations when needed and active treatment interventions, and allows the individual to live at home and continue to attend school or work. Such programs prevent hospitalization, as well as

discouragement on the part of patients who undergo unsuccessful therapy in minimal programs. Moreover, those who need less intensive treatment are assigned to personalized programs, thus maximizing efficiency of resource allocation in therapy. A stratified integrative approach challenges clinical researchers on important issues such as the need to create empirically validated criteria for determining the appropriate level of care for individual patients based on disease severity, comorbidities, patients' social functioning, and other factors not yet recognized.

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