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Bulimia Nervosa: Treatment with Exposure and Response Prevention

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Fear of weight gain, binging, and self-induced vomiting are the salient features of bulimia nervosa in normal weight individuals. An exposure plus vomiting response prevention procedure was evaluated in a multiple baseline design across three classes of food stimuli for a patient suffering from chronic bulimia nervosa. Amount of food consumed without vomiting increased and subjective discomfort after eating decreased when exposure plus response prevention treatment was sequentially applied to each class of food. Complete cessation of vomiting and binging and minimal discomfort were subsequently achieved during a postexperimental response prevention phase. Treatment effects were maintained at 10-month follow-up. The results suggest that binging in bulimia nervosa is more a consequence of vomiting than vomiting is a consequence of binging. They also support the hypothesis that vomiting in bulimia nervosa is an escape-avoidance response reinforced by anxiety reduction, similar in function to compulsive hand washing and checking rituals in obsessive-compulsive neuroses.

Because binge eating and/or self-induced vomiting are common symptoms in anorexia nervosa, reported in one study to occur in as many as 56% of the cases (Casper, Eckert, Halmi, Goldberg, & Davis, 1980), there has been considerable confusion as to whether these behaviors in *normal weight* individuals reflect an interphase, a subtype, or a separate disorder from anorexia nervosa. Recently this "gorging-purging" syndrome has been recognized as an independent disorder, distinguishable as well from episodic bulimic episodes in obesity (American Psychiatric Association, 1980). Terms used to describe this disorder include bulimarexia (Boskind-Lodahl, 1977) bulimia nervosa (Russell, 1979), dysorexia (Guiora, 1967), and dietary chaos syndrome (Palmer, 1979).

Some individuals suffering from this disorder—most often college-aged females—may vomit as much as several times a day, every day of the week. Others will only do this several times a week (Pyle, Mitchell, &

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Eckert, 1981). Some will always binge before vomiting; others may induce vomiting not only after binging but also after moderate food intake; still others will vomit only after eating certain specific types of food, regardless of amount. It is a very distressing disorder, since it elicits a great deal of self-disgust and fear of discovery. Like many compulsive disorders, it is also an all-consuming preoccupation. Concern with bulimia nervosa stems not only from its psychological and social disabling properties, but also from its poor prognosis (Beumont, George, & Smart, 1976; Hsu, Crisp, & Harding, 1979; Theander, 1970). Moreover, in severe cases it can be life threatening because of potassium loss (Wolff, Vecsei, Kruck, Roscher, Brown, Dusterdieck, Lever, & Robertson, 1968).

Most often, bulimia has been treated in the context of family therapy and individual psychodynamic psychotherapy for anorexia nervosa. There are no studies of treatment outcome with these approaches. Using "consciousness raising" groups, Boskind-Lodahl (1977) reported improvements in self-esteem in a mixed population of individuals with bulimia and other eating disorders. However, no effect on binge eating or vomiting was reported. Behavioral treatments including aversive conditioning (Kenny & Solyom, 1971) and positive reinforcement (Geller, Kelly, Traxler, & Marone, 1978; Monti, McCrady, & Barlow, 1977) have eliminated vomiting in anorexia nervosa. Vomiting in bulimia nervosa without concurrent anorexia was eliminated using a cognitive-behavioral approach (Grinc, Note 1). To date, however, there have been no controlled behavioral treatment studies of bulimia nervosa.

In bulimia nervosa, binge eating and self-induced vomiting seem linked in a vicious circle by anxiety. As in anorexia nervosa there is a morbid fear of weight gain. Eating elicits this anxiety (binging dramatically so); vomiting reduces it. Once an individual has learned that vomiting following food intake leads to anxiety reduction, rational fears no longer inhibit overeating. Thus the driving force of this disorder may be vomiting, not binging; binging might not occur if the person could not vomit afterwards. (In fact some patients report that the only reason they binge is to make it physically easier to vomit.) By analogy to obsessive-compulsive disorders, the best way to extinguish these fears of weight gain and of uncontrolled eating behavior may be to attack the problem not from the binging side but instead from the vomiting side, through an exposure plus response prevention model of intervention.

METHOD

Subject

The subject was a 21-year-old female university student. At the start of the study she was 5 ft. ½ in. tall and weight 95 pounds. The subject reported binging or overeating at least once per day, and usually vomiting several times per day. From the onset of the habit at age 15, she recalled only 3 days without bulimia episodes. She binged on two classes of food. One she termed Snack Food, which included brownies, cookies, and

crackers. The other, Junk Food, included spaghetti, pizza, bagels, and french fries. Her binges lasted as long as 1 hour, and she was capable of consuming large amounts including, for example, a box of cookies, a loaf of bread, a bowl of mashed potatoes. Binging was not always required for vomiting. A small amount of these foods under certain circumstances also could precipitate vomiting. A regularly scheduled large meal would also prompt her urge to vomit. Occasionally, she binged and vomited just to rid herself of the mental preoccupation with food or with anxiety provoking social interactions.

Following one of these three eating episodes (i.e., snack food binge, junk food binge, or large meal) she would become distressed by a variety of sensations and thoughts which she could not dispel. They included (a) a bloated, heavy feeling and a tightness around her waist, (b) terror of gaining weight, and (c) worry over ill health or even contamination from the food consumed. Frequently she tried to prevent herself from vomiting. This caused worsening of the anxiety which could only be relieved by vomiting.

Procedure

Supervised exposure and response prevention. The first part of intervention—supervised exposure and response prevention—was carried out and assessed in a multiple baseline design. The stimuli used for each phase, were as follows: large meal—a large dinner with several courses; junk food—alternately, pizza and meatball submarine sandwiches; snack food—cream filled chocolate cookies. There were six response prevention sessions for each phase. Originally, sessions were scheduled for every other day, but illness and other practical exigencies did not permit such an even spacing. The sessions for phases large meal and junk food were conducted at local restaurants. Snack food sessions were conducted at the clinic.

The subject was told that her binging was maintained by the availability of vomiting as an escape response and that her vomiting was maintained by the relief from discomfort that it provided. Furthermore, she must practice experiencing the discomfort after overeating without vomiting in order to eliminate the habit. During each treatment session, the subject was instructed to eat an amount of food which caused her to feel a strong urge to vomit, to the point where she ordinarily would vomit. She knew in advance, however, that she would not be permitted to do so. The therapist then directed her attention to the anxiety provoking thoughts described above. She focused on the discomfort until the urge to vomit vanished completely. In order to assess unprogrammed transfer effects during this segment of the study, the subject was *not* instructed to avoid binging or vomiting between sessions.

Scheduled response prevention: Postexperimental period. After these three phases of supervised exposure and response prevention, the subject was instructed in a schedule of gradually decreased vomiting. To this point in treatment, her longest consecutive period without vomiting at

home was two days. She was instructed to gradually decrease the number of days of vomiting over successive weeks. This treatment phase lasted 44 days.

Assessment

Standardized meals. Effects of the supervised exposure and response prevention were assessed at the end of each phase of the multiple baseline with three standardized meal situations. For large meal, the subject ordered a dinner (including steak, baked potato, and fruit cocktail) at a local fast food steak house. For junk food, the subject ordered a medium pizza. And for snack food, the subject bought a box of cream filled chocolate cookies. The measures included (a) ounces of food consumed in the large meal and junk food situations (This was determined by subtracting the weight of the food uneaten from the weight of the food after preparation; the restaurants provided this information.), (b) the number of cookies eaten for snack food, and (c) a 0–100 subjective unit of discomfort (SUD) rating at the end of the meal. The subject was instructed to eat as much as possible and to agree that she would not vomit. The standardized meals were unsupervised in that the therapist was not present at these times. They were conducted in 3 consecutive days under similar circumstances. Although no reliability check was taken for the amount of food consumed, the validity of these reports is suggested by the fact that the data are discrete and easily quantifiable and that the increase in consumption corresponded to the increased intake when the subject was being observed during treatment sessions.

Treatment session data. To assess improvement during the treatment sessions, the subject provided a SUD rating after each practice meal, and the time to overcome the urge to vomit was recorded. Because the food stimuli varied during the actual treatment sessions, the amount eaten was not employed as a measure.

Self-monitoring. The subject kept an eating diary throughout treatment. This yielded three measures of daily eating behavior: (a) SUD (the mean of individual ratings for each eating episode), (b) frequency of vomiting, and (c) frequency of binging. A binge was defined as an episode of large food intake which exceeded hunger and desire for the food itself.

RESULTS

The standardized meal assessment at the end of each multiple baseline phase provided both a measure of the amount of food the patient could eat without vomiting and a measure of the amount of subjective anxiety evoked by eating. Following baseline measurement for each type of food, the first phase of exposure and response prevention treatment was directed solely at large meal. As shown in Fig. 1 the patient consumed 14 ounces of a 22.5 ounce steak dinner, and rated her discomfort at 90 prior to the start of treatment. After treatment for large meal, she was able to finish the complete meal and her SUD declined to 40. There was only a slight change in the untreated foods. In the second phase, pizza (and

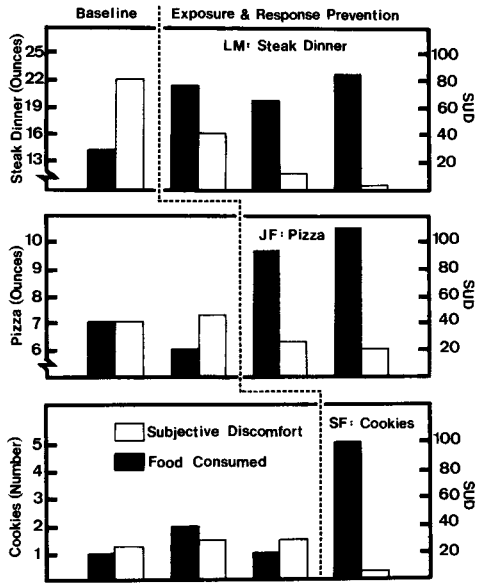

FIG. 1. Ounces of food eaten and subjective units of discomfort (SUD) at standardized assessment meals during baseline and treatment for large meals (LM), junk food (JF), and snack food (SF). Maximum possible ounces were 22.50 for LM and 19.50 for JF.

meatball submarines) were targeted for the next six response prevention sessions. The amount of pizza consumed increased, from a baseline average of 6.5 ounces to 9.75 ounces, and discomfort declined from an average baseline of 42.5 to 25. After the final phase, exposure and response prevention treatment with cookies, the number of cookies eaten increased from one to five and discomfort declined from 28.33 to 5. The subject also ate the entire large meal, and 10.5 ounces of the pizza. Discomfort for both foods reached negligible levels.

Degree of anxiety and time to overcome the urge to vomit across successive response prevention treatment sessions is pictured in Fig. 2. In the first large meal treatment session, more than an hour and a half elapsed from the end of eating until the urge to vomit disappeared. By the sixth session, the urge was eliminated in about 30 min. Meanwhile ratings of subjective discomfort declined from 85 to 45. Junk food and snack food treatment sessions showed a similar pattern; however, the time needed to overcome the urge to vomit was less in both the beginning and end of this phase than in the large meal phase. The sharpest rate of decline in time to overcome the urge to vomit and discomfort tended to occur between the first and second response prevention sessions. The urge to vomit following food intake was never eliminated from one treatment session to the next. Instead it simply lasted a shorter time and was much less distressing.

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