

EATING DISORDERS REVIEW

Current Clinical Information for the Professional Treating Eating Disorders



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UPDATE

Body Dysmorphic Disorder: Chronic, Unremitting

People with body dysmorphic disorder, or BDD, have a distressing and often harmful preoccupation with an imagined or slight defect in their appearance. Their distress can lead to thoughts of suicide (70% of patients) or suicidal attempts (22%-24% of patients) (*Br J Psychiatry* 1996; 169:196; *J Nerv Ment Dis* 1997;185:570).

Despite its seriousness, until recently no prospective follow-up studies of the course of the disease had been done. Katherine A. Phillips, MD, and colleagues at Brown University and Decision Science Institute at Butler Hospital, Providence, RI, obtained data with the Longitudinal Interval Follow-up Evaluation on weekly BDD symptom status for 183 subjects diagnosed with BDD. The 183 patients were followed for one year (*Am J Psychiatry* 2006;163:907).

Most had long-term symptoms. Two-thirds of those with BDD were female; most were single; and most cases of BDD symptoms were moderate to severe. The mean duration of BDD symptoms was 16.0 years, and 148 subjects reported a continuous lifetime course of BDD.

The chronic and unremitting course of disease was apparent: during the year of follow-up--only 9% of the patients experienced full remission of symptoms and only 21% had partial remission. To underscore the seriousness of BDD, 15% of the subjects who had full remissions subsequently relapsed.

ALSO IN THIS ISSUE

Fighting the Stigma Attached to Eating Disorders	3
Improving Mother and Infant Interactions Through Video Feedback	4
Yogurt Improves AN Immune Status During Refeeding	4
Study Tracks Use of Artificial Sweeteners among Patients with ED	5
Evaluating Residential Treatment Programs	6
Does Nitric Oxide Have a Role in Eating Disorders?	7
Review: <i>Annual Review of Eating Disorders, Parts 1 and 2</i>	7
Care for Caregivers	8
Q&A: Treating the Night-Eating Syndrome	8

Report Calls for Major Improvements in Eating Disorder Research

By Mary K. Stein
Managing Editor

A landmark review of the eating disorders literature may well help improve the design of future eating disorders research. The recently released report, *Management of Eating Disorders*, also analyzes treatment efficacy and outcome for anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED). The review was released by the Health and Human Services Agency for Healthcare Research and Quality early in April. (To obtain copies of the study, see the box on page 3.)

A Major Finding: Study Designs Varied Widely

One of the major findings from reviewing the treatment efficacy and outcomes for patients with AN, BN, and BED is that the literature is highly variable. The researchers found that for AN, for example, the literature on medications turned out to be "sparse and inconclusive." For example, not a single study combining medication with behavioral interventions met inclusion criteria.

According to Cynthia Bulik, PhD, Jordan Distinguished Professor of Eating Disorders in the Department of Psychiatry, Professor of Nutrition, and Director of the Eating Disorders Program at the University of North Carolina at Chapel Hill, and an author of the report, many eating disorders management studies were not well designed.

Many studies included too few participants, provided too little information about the participants, and ignored the possible harms associated with of some types of treatment. For example, studies that address the optimal approach to re-nourishing patients or the optimal conditions under which a patient should be stepped down or discharged from inpatient treatment are absent from the literature.

Two areas that need to be changed: study size and design.

AN: No Effective Medications

No medications currently available are effective for patients with AN. This was not surprising, said Dr. Bulik. She added, "It is a common frustration that there aren't any medications that are effective in AN, especially in the underweight state." She noted that most medications that have been tried have been used in the hopes that their side effects (that are usually undesirable for the disorders they are used to treat--such as weight gain in depression or weight gain with atypical antipsychotics)--somehow assist with weight gain in AN. This report is not about specific cases and does not mean that medications may not be effective for an individual. The report simply summarizes the randomized controlled trials that have been published. "However, the trials were far too small to have included meaningful, preplanned subgroup analyses that could indicate whether there are certain groups of patients who may respond better than others," she said.

continued on page 2

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Editorial questions should be addressed to Joel Yager, MD or Mary K. Stein c/o MD Communications, 302 S. Pinto Place, Tucson AZ 85748-6902, 520/296-6400, fax 520/296-6464; marykaystein1@aol.com.

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continued from page 1

Treatment for BN and BED: A More Positive Picture

The case seemed to be different for BN, however. Several medications and behavioral therapies are helpful for patients with BN and BED. The researchers found that several types of medications were helpful for BED patients, at least in the short term. Reflecting the state of the science, fluoxetine is the only FDA-approved drug for any eating disorder (approved for BN), and it does not work across the board. Renewed efforts to determine how to treat individuals who do not respond to fluoxetine and do not respond to cognitive behavioral therapy (CBT) are critical next steps, according to Dr. Bulik.

Several behavioral therapies also helped combat BN and BED. Individual or group CBT and interpersonal psychotherapy were useful for reducing the core symptoms of binge eating and purging and for alleviating the psychological symptoms of the disorder. For BED, CBT reduced the number of binge days or binge episodes. It did not, however, help BED patients lose significant amounts of weight.

Family Therapy Was Effective for Some Patients

Another finding from the study was that most types of traditional family therapy were ineffective for adults with longstanding AN. One form of family therapy, which encourages parents to control their child's nutrition, appeared to be helpful. Dr. Bulik notes that this form of family therapy seems to be effective for younger patients still living in a family context where parents can still take control of the refeeding process. This becomes less feasible as patients grow older, when the issues become quite different, she said. No studies have yet explored other types of therapy with couples, for example, for adult married or partnered patients. "We know virtually nothing about other types of family therapy that could be tried for older patients," Dr. Bulik said.

Sex, Race, Ethnicity, Gender, Age Ignored

According to Dr. Bulik, the review revealed a virtual lack of information about treatment needs by sex, race, ethnic group, or age. She added, "It was absolutely striking how little we know about these questions. Moreover, we have little to no information about optimal refeeding strategies for anorexia nervosa. Although we emphasize on a daily basis that the first and most critical steps in treating AN are weight gain and re-nutrition, there were no trials that actually looked at how best to help underweight individuals gain weight effectively."

Stereotypes limited studies. Older studies were affected by stereotypes about eating disorder patients. Some studies did not even include information about gender, assuming that all patients were white and female.

Most studies were too small. Another area that needs improvement is the size of eating disorder trials. Most eating disorders treatment studies are still small, single-site studies. The average study of AN treatment involves 23 patients, said Dr. Bulik. Compared with other specialty areas, studies with such small numbers of patients would not even be considered valid. Future multi-site trials will improve patient recruitment, help buffer high dropout rates, and improve the generalization of results. Working in partnership with insurance companies to enable such trials in the current reimbursement setting may be critical to success.

Challenges for AN treatment in other settings. As the report noted, most clinical trials for AN, in particular, do not adequately reflect the type of treatment usually delivered in the community. In addition, clinical trials for AN do not address some of the key challenges facing the clinicians in inpatient, partial hospitalization, or residential settings. No clinical studies address the best approach to inpatient weight restoration that can achieve the most lasting gain.

Lack of correlation between types of studies. Another weakness that appeared in the review was the lack

Most eating disorders treatment studies are small, single-site studies. The average study included 23 patients.

of “cross-talk” between the outcomes and the treatment literatures. As the report notes, outcomes literature reveals intriguing problems that persist years after the onset of AN. An example is the presence of autism spectrum disorders reported in a cohort of individuals with AN followed for years in Göteborg, Sweden. Such observations could provide critical information to individuals designing new interventions for AN.

More data on recovery time. Studies that address factors associated with successful outcomes in AN and BN should explore recovery patterns and examine how current diagnostic language captures those trajectories, said Dr. Bulik. An example would be a patient with AN who is evaluated 5 years after the onset of the illness and is given a diagnosis of EDNOS. This pattern fails to acknowledge that the patient is on a recovery trajectory from AN and her symptoms may reflect “residual AN” rather than a different diagnostic entity.

Questions of cost-effectiveness. Another area that needs work is analysis of cost-effectiveness of treatment. Only rarely did studies assess the cost-effectiveness of interventions for AN, BN, or BED, according to the researchers.

There also were gaps in the overall evidence base. The researchers found that the literature on AN, BN, and BED was geographically imbalanced. Although the U.S. has contributed greatly to the literature on BN and BED, it has spent much less time on treatment and outcome of AN. This is one area that could be improved.

Much Work Lies Ahead

Obviously, there is much work to do. Partnerships with industry and universities will enable researchers to study larger groups of patients. Patients face real barriers to insurance, and better education about the seriousness of and cost of treating eating disorders will help. This was one of numerous topics recently addressed at a Congressional briefing and the Lobby Day held by the Eating Disorders Coalition. Senators and members of Congress were urged to support legislation that would lead to mental health parity and ensure coverage for eating disorders treatment.

About the Study

The 160-page-plus report represented more than a year’s work by a team at Research Triangle Institute (RTI) International in collaboration with five health professions schools and the Cecil G. Sheps Center for Health Services Research at the University of North Carolina, Chapel Hill (UNC). RTI International operates the RTI-UNC Health Care Practices and Technology Center as an Evidence-Based Practice Center (EPC) for the Agency for Healthcare Research and Quality (AHRQ).

The idea for the project came from an ad hoc expert working group on eating disorders, and was requested by the American Psychiatric Association and the Laureate Psychiatric Clinic and Hospital, then funded by the Office of Women’s Health at the Health Resources Service and Administration. The project began late in 2004.

Dr. Bulik explained that the RTI-UNC Evidence-Based Practice Center is available as a resource to the entire health care community. The organization produces systematic reviews and analyses of the scientific evidence (evidence reports and updates) on a variety of health care and health policy topics. It also builds on these reports to create materials and messages for patients and clinicians relating to health care decisions. EPC personnel also conduct research into the best practices and methods for conducting reviews of the scientific literature.

Vivian W. Pinn, MD, Director of the National Institutes of Health Office of Research on Women’s Health, noted that *Management of Eating Disorders* “highlights research needs in the field of eating disorders, and will help inform a future research agenda.”

PDF Available Online

Copies of *Management of Eating Disorders* are available online, in PDF format, at:

<http://www.ahrq.gov/downloads/pub/evidence/pdf/eatingdisorders/eatdis.pdf> or can be obtained free of charge by calling the AHRQ Publications Clearinghouse at 800-358-9295 or by sending an e-mail requesting the report to: ahrqpubs@ahrq.gov.

Fighting the Stigma Attached to Eating Disorders

Only a small percentage of persons with eating disorders ever seek treatment. One possible reason may be the fear of being stigmatized for having an eating disorder.

Maria-Christina Stewart, Pamela Keel, PhD, and R. Steven Scivo, PhD recently a survey in the streets of Boston, asking 91 people to evaluate certain characteristics of four fictitious persons: one with asthma, one with schizophrenia, a healthy person, and a person with anorexia nervosa (AN) (*Int J Eat Disord* 2006;39:320). The people surveyed were given one of four questionnaires, identical except for the order of the measures presented.

AN elicited the most negative responses

Evaluations of personal characteristics were most negative for persons with AN. Respondents believed the fictitious person with AN was most to blame for his/her condition, and was best able to “pull himself/herself together if he or she wanted to.” There was a general consensus that the eating disorder was probably just an attempt to gain attention. The respondents also felt that biological factors were least likely to be involved in the disorder.

According to the authors, stigmatization of people with AN may lead to decreased self-esteem and increased shame, which in turn may prolong the recovery process from AN and increase the possibility of relapse. They feel that AN patients may benefit from treatment approaches that work to reduce the stigma of the disease. In addition, although grassroots movements, such as the Changing Minds Campaign directed by the Royal College of Psychiatrists in London, seek to decrease stigmatization against mental illness, eating disorders have largely remained on the sidelines of such organizations. Researchers and clinicians have an important role to play in reaching out to people with eating disorders and their families to give them information to help fight inaccurate stereotypes about people with eating disorders.

Improving Mother and Infant Interactions Through Video Feedback

Eating disorders are common among women of childbearing age and can have a significant impact upon their relationship with their children. For example, mothers with eating disorders are more likely to be involved in major mealtime conflicts with their infants, which can lead to lower infant weights.

Alan Stein, FRCPsych, of the University of Oxford, and a group of researchers recently evaluated the effects of video-feedback treatment versus supportive counseling among 80 mothers who were attending routine well-baby clinics. The infants were 3 to 6 months of age. The women were 18 to 45 years old and all met *Diagnostic and Statistical Manual for Mental Disorders (DSM-IV)* diagnostic criteria for BN or a similar eating disorder, such as a bulimic subtype of an eating disorder not otherwise specified (*Am J Psychiatry* 2006;163:899).

Two treatment groups

The mothers were randomly assigned to one of two interventions: a video-feedback program (40 mothers), or a control treatment of supportive counseling only (40 mothers). Both groups had 13 one-hour treatment sessions presented in the mothers' homes.

Mothers in both groups were given a self-help manual, adapted for the postnatal period from two established treatments that contained information about eating problems and explained the program's six steps through guided cognitive behavioral self-help. The manuals aimed to help the mothers gain control over their eating, reduce episodes of vomiting and laxative abuse, and reduce extreme concerns about shape and weight. Both groups were assessed before treatment began, when the infants were 4 to 6 months old, and after treatment, when infants were 13 months of age.

Video-feedback treatment

Video-feedback intervention to promote positive parenting is relatively new, and is designed to prevent or re-

duce conflicts and enhance interactions between mothers and infants, primarily during mealtimes. The visual feedback helps mothers recognize and respond to their infants' cues and also improves awareness of infants' developing skills and needs.

A therapist videotaped the mother and infant at home during mealtimes, usually at the principal solid meal of the day. At the next visit, the therapist and mother watched and discussed selected segments of the previous video session that highlighted the infant's signals.

The control group: support only

Treatment in the control group was aimed at giving the mother support with empathetic listening. This helped her reflect on self-selected aspects of her life and related feelings. The aim was to encourage and support any changes she initiated, helping her develop a sense of self-empowerment and self-confidence.

Feedback had unique benefits

Seventy-seven mothers completed the study. The group that received video feedback showed significantly less conflict than the group that received supportive counseling alone, according to scores on the conflict rating scale. Marked or severe conflicts were noted for 23.7% of the mother-infant pairs in the video-feedback group and 53.8% of those in the control group. Children in the video-feedback group also showed significantly more autonomy during mealtimes; in addition, there was evidence of greater help given to the infants and a higher level of appropriate nonverbal response to infant cues in the video feedback group. There was no difference between treatment groups in appropriate verbal responses to cues and no difference in the terms of maternal intrusiveness (this one factor was reduced by about 30 % in both groups at the end of the study).

The estimated 73% reduction in the odds of a marked or severe conflict in the video-feedback group was striking and important because of the central

role of mealtime interaction in the mother-infant relationship, especially in the face of a maternal eating disorder. Infant-mother conflict and lessening of infant initiatives and autonomy can make mealtimes an unpleasant experience for an infant, with lasting negative impressions around food.

According to the authors, one of the reasons that video feedback is particularly suited to studying mothers with eating disorders and possibly also to studying those with postnatal depression is that these disorders often involve a narrowed focus of attention to issues surrounding the eating disorder, including body shape, weight, and eating. This may in turn impair the mother's ability to respond, especially to her infant's attempts to communicate with her. Video-feedback treatment focuses the mother's attention away from her eating preoccupations and back to her infant.

Yogurt Improves Immune Status Among AN Patients During Refeeding

Adding yogurt to a refeeding program for patients with anorexia nervosa (AN) may have a positive effect upon their immune system, according to the results of a study by a team of nutritionists in Madrid, Spain (*Eur J Nutr* 2006;45:225).

Yogurt is fermented milk that contains live lactic acid bacteria, and has been reported to have a number of beneficial effects, such as balancing intestinal microflora, improving lactose tolerance, and shortening episodes of diarrhea. Even though few studies have been done among humans, animal studies have shown that lactic acid bacteria can improve immune status.

The authors, Esther Nova and colleagues at Hospital Infantil Universitario Niño Jesús, had previously reported immunocompromised status in patients with AN that shared characteristics with typical malnourished patients. In these studies, the authors reported that patients had leukopenia and impaired cell-mediated immunity, reflected by

reduced delayed hypersensitivity tests, depleted T cell subcounts, and altered cytokine production.

In the recent prospective, randomized, controlled and parallel study, 16 patients with AN and 16 healthy controls consumed 375 gm/day (1 cup equals 227 gm) of natural yogurt containing the common bacteria *Lactobacillus bulgaricus* and *Streptococcus thermophilus*. The control groups of AN patients (14 patients) and healthy subjects (19) consumed 400 ml/day of semi-skimmed milk; the amount of milk was selected to approximately match the energy and nutrients supplied by the 375 gm of yogurt. Blood lymphocyte subsets were then assessed by flow cytometry and the in-vitro production of IL-2, IFN- γ , IL-2, IL-6, and TNF.

Results

After 10 weeks, patients with AN who consumed yogurt had improved immune system status, particularly in the immunologic marker ratio CD4+/CD8+ and the production of IFN- γ by lymphocytes. The CD4+/CD8+ ratio, an indicator of nutritional status, has been found to be decreased in malnourished children with kwashiorkor. This ratio was decreased significantly among the healthy controls and patients with AN who drank semi-skimmed milk. Leukocyte and lymphocyte counts were lower in the AN patients than in the healthy adolescents during the entire study.

Artificial Sweeteners and Patients with Eating Disorders

Artificially sweetened foods, such as nonfat yogurt and soft drinks, are especially attractive to people with eating disorders. But how often are such foods consumed? Do they cause adverse effects? Do people with eating disorders consume more of these products than do the general public? These and other questions led a team at New York State Psychiatric Institute, New York, NY, to what is believed to be the first attempt to quantify the use of artificially sweetened, low-calorie products by women with anorexia nervosa (AN) and bulimia

nervosa (BN) (*Int J Eat Disord* 2006; 39:341).

Diane A. Klein, MD and colleagues enrolled 78 women with eating disorders and 38 healthy women without histories of eating disorders in their study. Among the eating disorders patients, 18 had restricting subtype AN (AN-R), 12 had AN-binge-purge subtype AN (AN-B/P), and 48 had BN. The women were surveyed with a questionnaire assessing use of artificial sweeteners during the previous month, and for inpatients with AN, use of artificially sweeteners the month prior to their hospitalization. The survey was completed in written form by the participants or by telephone interview with a research assistant.

Some differences emerged among the groups

As expected, the body mass indexes of groups with AN were significantly lower than those of women in the other groups. And, although the women with AN-B/P and BN were somewhat more likely to report using of each of the product categories, the only areas where significant differences between groups appeared was for chewing gum and packets of sweeteners. Analysis showed that the difference in the use of sweetener packets was attributable to participants with AN-B/P, who were more likely to report use than were the other groups. The difference in use of artificially sweetened gum appeared to be attributable to lower use among the AN-R group. However, all three of the groups drank equal amounts of diet drinks.

In a second analysis, the researchers examined the amount of artificially sweetened food among the participants during the last month. Women with AN-B/P and BN used more diet drinks and chewing gum than did controls. Both AN patient groups used more packets of sweetener than did controls, and use among women with AN-R was greater than that among women with BN.

Amounts used were often striking

Although there was some suggestion that the proportion of women endorsing the use of artificially sweetened

products differed by eating disorder, a much more striking finding, according to the authors, was the amounts of substances used by study participants. For example, one patient told of adding dozens of artificial sweetener packets to popped corn and another described eating "Equal® sandwiches." Others reported that they ate sweetener directly from the packet, and often used as many as 100 packets a day.

The role of dietary restraint

Dr. Klein and her co-workers speculate that the excessive use of these products by persons with AN and BN is a manifestation of dietary restraint characteristic of these disorders. Dietary restriction stimulates appetite, which, coupled with the strong motivation to resist food intake, may lead individuals to choose foods that provide maximal orosensory stimulation with minimal calories.

The association between semistarvation and a heightened drive for orosensory stimulation has been described in other populations, such as the Minnesota men who voluntarily participated in a study of the effects of starvation during World War II. During that study, these previously healthy men developed several unusual food-related behaviors, such as chewing 40 or more packets of gum per day.

The authors also reported a distinct pattern of product use across subject groups. The greater use of diet beverages among women who purge is consistent with a higher tolerance for gastric distention and the use of fluids to facilitate vomiting. Diet beverages often contain caffeine, which appears to have a higher rate of abuse among women who binge and purge.

The lower overall use of artificially sweetened products among women with restricting type AN compared to those with AN-BP may reflect a higher degree of dietary restraint among the former group.

No clinical side effects were reported. Despite its small size, the study did show that consumption of artificial sweeteners among persons with eating disorders, especially those with AN, may be a sign of appetitive drive induced by semistarvation.

Evaluating Residential Treatment Programs

The number of residential treatment programs designed for persons with eating disorders is growing, but such centers vary widely and are still largely unregulated, according to the results of a recent study (*Int J Eat Disord* 2006; 39:434). These programs offer an alternative to inpatient care, particularly when managed-care companies limit coverage and individuals become responsible for their own care.

A survey of program directors

To evaluate current residential treatment centers, Maria J. Frisch, David B. Herzog, MD, and Debra Franko, PhD surveyed program directors at 22 residential eating disorders treatment programs across the United States. The programs were selected based on availability of residential treatment services, treatment for persons with anorexia nervosa or bulimia nervosa, and location within the U.S.

The authors used e-mail to gather information about each treatment program including treatment theories, methods, licenses, extra services, completed outcome and in-process outcome studies, education levels of staff members and types of staff in the organization. The online questionnaire included open-ended questions about length of stay, demographic characteristics, growth rates, treatment methods, and research involvement.

Results

Thirteen of the 22 residential treatment programs completed the survey. Information about 6 of the programs was obtained through a combination of publicly available information and telephone verification. Three refused to participate. Thus, the study results included information from 18 of the 22 programs contacted (82%).

The authors noted a surprising inconsistency in licensure. Most programs held a general state license, although few if any states required licenses specific to the treatment of eating disorders. The type of licenses reported included communal living licenses to foster care licenses. About 28% of programs had received Joint Commission of Healthcare

Organization accreditation.

Females had greater access to residential treatment for eating disorders than did males. All programs accepted females for treatment, whereas only 22.2% of programs accepted males.

Length of stay and costs

The average length of stay in residential treatment, a mean of 83 days, was more than three times that of a recently reported study of inpatient length of stay for treatment of eating disorders; however, treatment length was highly individualized. The average cost per day in U.S. dollars was \$956 (range \$550-\$1,500). Therefore, according to the authors, an average length of stay in residential treatment costs approximately \$79,348.

Treatment

Most of the residential treatment centers used an eclectic, integrative approach to treatment. Therapeutic orientation and techniques varied widely. Eighty-nine percent of programs reported using cognitive-behavioral therapy (CBT) as the primary method of treatment. Only 16.7% of programs reported using interpersonal therapy and 33.3% reported using dialectical behavioral therapy.

The authors gathered information on types of therapy by quantifying weekly resident schedules for each program. They categorized therapies as: traditional group, nontraditional group, and individual therapy. Clients received an average of 5.9 hours of nontraditional therapy for every 10 hours of traditional group therapy. Clients also received an average of 1.8 hours of individual therapy for every 10 hours of traditional group therapies. The most common nontraditional therapies were arts-based (334 minutes per patient per week), recreational-experiential (175 minutes per patient per week) and yoga/meditation (122 minutes per patients per week).

Slightly more than half (55.6%) of all programs reported they were currently conducting treatment outcome studies, 11.1% responded that they were not currently conducting treatment outcome studies, and 33.3% did not re-

spond at all to the question. More than a third of the programs reported having at least one doctoral-level staff member specifically engaged in research. Those programs that did not conduct research reported lack of time, staff and financial resources as the main reasons.

Lack of regulations, standard measures of efficacy

The authors found that the number of residential programs has more than tripled over the past 10 years; between 2000 and 2004 alone, the number of residential programs expanded by 44.4%. Most residential treatment centers are found in the Southwest. According to the authors, even though residential treatment programs are becoming increasingly available, they are still highly varied and largely unregulated. Effectiveness measures are currently underutilized and, in many programs, nonexistent. Although daily program costs range from \$550 to \$1500, there are no published data about effectiveness or quality, aside from the varying accounts of treatment success found in promotional brochures. Many operate with licenses not related to treatment of eating disorders, including licenses for group homes, foster care, or no license at all.

Compared to the average \$2,000 a day cost for inpatient care, residential treatment care may be a very cost-effective option for short and longer-term care. One area that surprised the authors was that no programs offered services exclusively for males.

Little information on treatment outcome

Finally, even though a higher proportion of residential treatment programs had conducted current and past outcome research, the authors found that few studies have been published concerning treatment outcomes for individuals with eating disorders. There are several possible reasons for this: Health organizations may conduct internal quality assurance research, but not submit their data to peer-reviewed publications, and may not be motivated to do so. Some consider their data to be proprietary information. Also, outcome

research originally produced for internal management purposes or for reporting to insurance companies may not meet the standards of peer-reviewed publication. The authors found that one-third of all programs evaluating treatment effectiveness relied only on client-initiated post-treatment telephone calls as a measure of the effectiveness of treatment.

The authors recommend that residential treatment facilities conduct empirically sound studies to measure the effectiveness of their treatment approaches. Given the length and cost of residential treatment, information about effectiveness of treatment is crucial.

Does Nitric Oxide Have a Role in Eating Disorders?

A team of researchers at the University of Florence, Italy, has turned a spotlight on the possible actions of nitric oxide in the etiology of eating disorders. Nitric oxide (or NO, not to be confused with the anesthetic, nitrous oxide) is a neuromodulator involved in the regulation of body energy balance and food intake. Most of the actions of this gaseous mediator are due to production of cGMP (cyclic guanosine monophosphate).

Animal studies have shown that NO/cGMP is involved in regulation of eating behavior. Nitric oxide plays an important role as a mediator of several hormones involved in body weight control, such as leptin, ghrelin, and cholecystokinin.

A study of 50 patients

To assess the effects of NO in eating disorders, Dr. Alfredo Vannacci and colleagues at the University of Florence studied 62 consecutive female Caucasian outpatients referred for treatment of eating disorders. To be included in the study, persons had to be seeking treatment for an eating disorder for the first time, and could not be taking any medications known to interfere with eating behavior and attitudes. Of the 50 patients in the final study group, 15 (30%) met DSM-IV criteria for anorexia nervosa, restricting subtype (AN-R), 10 (20%) for AN, binge-purge subtype (AN-

Annual Review of Eating Disorders, Part 1 (2005)

Annual Review of Eating Disorders, Part 2 (2006)

(Edited by Stephen Wonderlich, James E. Mitchell, Martina de Zwaan, and Howard Steiger. Radcliffe-Oxford Publishing Ltd, Oxon, U.K. Part 1, 172 pages; Part 2, 176 pages. Each volume: \$49.95)

If they are harbingers of annual reviews in the future, these two volumes, published under the aegis of the Academy for Eating Disorders, promise that the field can look forward to an extremely high-quality yearly update. The editors, several of whom serve on the *EDR* Editorial Board, have combed the ranks of those doing significant research and scholarly work and recruited cutting-edge contributors.

At the start of the project, 20 key topics were identified, and the plan was to produce the first two volumes, each with 10 chapters. The first group of chapters covered work published in 2002-2003, and the second group addressed work published in 2003-2004. Therefore, this material appears much more rapidly than is usually the case with textbooks. The chapters are succinct but authoritative, directed to professionals who are presumed to know

BP), and 25 (50%) for bulimia nervosa, binge-purge subtype (BN).

Researchers measured plasma nitrite and cGMP levels among the patients and 24 normal female Caucasian controls. About 12 ml of peripheral venous blood was drawn from each student, and then analyzed.

What the levels showed

Plasma nitrite and cGMP levels were significantly higher in eating disorder patients than in healthy controls. Eating Disorder Examination scores were also significantly higher in eating disorder patients than in controls. No significant correlation between clinical and psychopathologic variables, nitrites, and cGMP levels was observed among control. In contrast, among AN patients as a group, nitrites correlated inversely with body mass index. Among BN patients, nitrites correlated directly with the frequency of binge-eating episodes. When AN patients

the basics and who need to know what's new and what's controversial.

It's not clear as to how the editors decided to sequence the chapters in each volume, since the rationale behind the organization of presentations is not obvious.

Volume 1 updates prevention, family issues, the treatment of binge-eating disorder, psychiatric comorbidity, psychosocial risk, self-help, assessment, medical complications, psychological trauma, and classification—in that order.

Volume 2 reviews psychobiology, genetics, sociocultural issues, epidemiology, body image, personality, brain imaging, eating disorders in children and adolescents, treatment of bulimia nervosa, and treatment of anorexia nervosa—in that order.

Suffice it to say that the authors comprise a "Who's Who" in the field, and that readers will not be disappointed. The quality of the information and the writing and editing is very high. Although the price of these volumes may seem steep, they have been distributed at a half-price discount to members of the Academy for Eating Disorders (\$25 to members). This is one more good reason to join the Academy (<http://www.aedweb.org/>).

— J.Y.

were divided into subgroups, nitrite and cGMP levels were significantly higher in AN-BP patients than in AN-R and BN subjects. According to the authors, this latter result seems to be related to the inverse correlation between nitrite levels and BMI noted in AN patients and to the direct correlation between nitrite levels and binge eating observed in BN patients.

A significant relationship between NO and cGMP levels and the degree of psychopathological impairment (assessed through the EDE) was also observed in BN patients, while the higher levels of nitrites and cGMP reported in AN patients were more strictly correlated with low BMI and high number of binge episodes.

The authors note that a limitation of the study was the small number of participants, and larger studies will help define whether the higher NO and cGMP levels result from AN and BN or play a role in their development.

QUESTIONS & ANSWERS

Treating the Night-Eating Syndrome

One of my patients is a 45-year-old obese attorney who describes a 15-year pattern of eating voraciously at night, including awakening at night to eat. My assessment is that he meets criteria for the "night-eating syndrome." He's very skeptical about taking medication. Are there any evidence-based treatments I can offer him? (G. L., Chicago)

As of now, the evidence base for the treatment of night-eating syndrome is rather sparse. If your patient is concerned about "evidence-based treatment," he should be informed about the results of a very recently published eight-week double-blind controlled study involving a group of 34 patients with night-eating syndrome. These patients were randomly assigned to receive 50 to 200 mg/day of sertraline, a well-known selective serotonin reuptake inhibitor (SSRI), or to placebo. Seventy-one percent of the patients receiving sertraline responded, with improvement of symptoms, whereas only 18% of those receiving placebo improved in this time period. Of note, among the 14 obese and overweight patients receiving sertraline, the average amount of weight lost was 2.9 kg, whereas among the 14 obese and overweight patients receiving placebo

weight loss was only 0.3 kg. Of course, this was a very short-term study, and it's not clear how lasting either the clinical improvement of night-eating syndrome symptoms or weight is likely to be in these patients (O'Reardon et al, *Am J Psychiatry* 163: 893, 2006). However, since night eating is likely to contribute to obesity and overweight, curtailing this eating pattern may reduce overall daily caloric intake and help in weight reduction.

—J.Y.

Care for Caregivers

Little is known about the impact of caring for a person with an eating disorder. When Astrid Mueller, MD and colleagues at the University of Erlangen-Nuremberg, Germany, surveyed 34 caregivers, they found that many needed support for their own stresses.

The authors administered the General Health Questionnaire and the German translation of the Carers' Needs Assessment Measure (CaNAM) to 34 caregivers. In addition, all patients were interviewed with the Eating Disorder Examination (EDE) to assess the severity of their eating disorder.

Most needed more information, better support

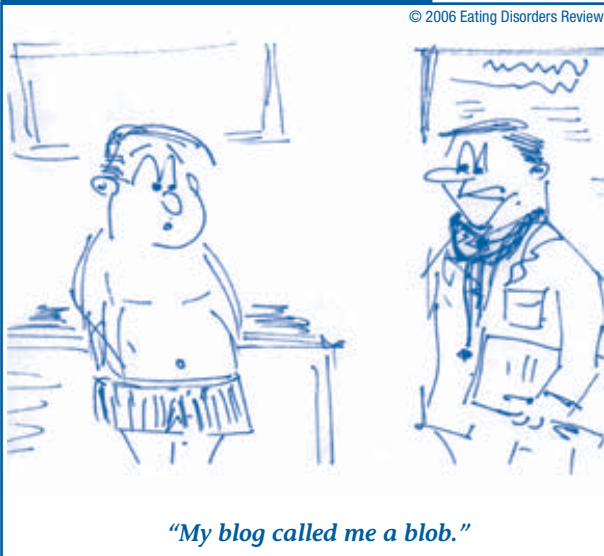
Sixteen patients had anorexia nervosa and 18 had bulimia nervosa, and the mean duration of illness was 6 years. Most of the caregivers were mothers or partners. All reported having high levels

of unsatisfied needs on the CaNAM, including a need for more information about treatment, prognosis, and plans for future treatment.

Most of the caregivers also asked for more support for themselves. The authors note that caregivers themselves have high levels of distress that may be overlooked. The researchers reported their findings at the Eating Disorders Research Society Meeting last fall.

Nibbles by Hunter

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"My blog called me a blob."

IN THE NEXT ISSUE

- Highlights from the International Conference on Eating Disorders in Barcelona
- 2006 American Psychiatric Association Practice Guidelines
- Endocrine Markers Predict Menstrual Recovery in AN
- The International Olympic Committee's Position on the Female Athlete Triad
- What is 'Excessive Exercise' in Eating Disorders?
- Disordered Eating Attitudes in Grade School
- Sauna Treatment for Patients with AN

and much more...

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Continuing Education Quiz for Eating Disorders Review

May/June 2006 - Volume 17 - No. 3

You are eligible to receive one (1) Continuing Education (CE) credit by completing this quiz based on this issue of Eating Disorders Review (80% correct for a pass). INSTRUCTIONS: Circle the best answer to each of the following questions and return the completed test with a check for \$25 (payable to PER) to PER at PO Box 2196, Keystone Heights, FL 32656.

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Your CE credits will be documented and you will be sent a letter and certificate of completion. CE credits can be used in support of your license renewal, to maintain your managed care board memberships, to obtain discounts on your professional liability insurance policy, and to document your commitment to ongoing professional development. Learning Objectives: 1) Increase your knowledge regarding recent research developments concerning eating disorders, and 2) Enhance your clinical knowledge regarding disordered eating.

-
1. Approximately ____ % of individuals with Body Dysmorphic Disorder experience thoughts of suicide?
 1. 15%
 2. 25%
 3. 50%
 4. 70%
 2. In a recent longitudinal study of Body Dysmorphic Disorder, the mean duration of the BDD symptoms was
 - a. 2 years
 - b. 5 years
 - c. 11 years
 - d. 16 years
 3. In the longitudinal study of Body Dysmorphic Disorder, what percentage of patients experience full remission of symptoms during the year of follow-up?
 - a. 1%
 - b. 9%
 - c. 16%
 - d. 29%
 4. True or False: A recent review of medications used for treating Anorexia Nervosa has concluded that there are no effective medications for treating this disorder at this time.
 - a. True
 - b. False
 5. True or False: A recent review of medications used for treating Bulimia has concluded that there are no effective medications for treating this disorder at this time.
 - a. True
 - b. False

(continued on other side)

6. In a recent study of the stigma attached to eating disorders, researchers found that, compared to a fictitious person with asthma, a person with anorexia was viewed as
- more likely to be just trying to gain attention for him/herself
 - more to blame for the disorder
 - less likely to be associated with biological factors
 - all of the above
7. A recent study explored the use of videotape feedback during mealtimes for eating disordered mothers and their infants. Results indicated that mealtime conflicts occurred in about _____% of the parent-infant pairs without video feedback, compared to _____% in the video feedback group.
- 77%; 9%
 - 54%; 24%
 - 97%; 18%
 - none of the above
8. Adding yogurt to a refeeding program for anorectic patients has been associated with
- greater weight gains and maintenance
 - greater gains in cardiac muscle tissue
 - greater improvement in immune system functioning
 - all of the above
9. In a recent survey of residential treatment programs for people with eating disorders, the average length of stay was
- about the same as in inpatient hospital treatment
 - roughly half the length of the average stay in a hospital for inpatient treatment
 - nearly three times longer than inpatient treatment
 - none of the above
10. The most commonly utilized form of psychotherapy in residential treatment programs for eating disorders appears to be
- dialectical behavioral therapy
 - interpersonal therapy
 - cognitive behavioral therapy
 - family systems therapy

Name and degree as you wish them to appear on your certificate (please print):

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I confirm that I personally have completed the above test, and I am submitting it for evaluation and certification.

Signature: _____ Date of completion: _____

Evaluation: Overall, this issue of Eating Disorders Review: (circle appropriate response)

Provided informative updates	5	4	3	2	1	Was not informative
Expanded my knowledge	5	4	3	2	1	Did not expand my knowledge
Provided useful resources	5	4	3	2	1	Did not provide useful resources
Was appropriate for my training level	5	4	3	2	1	Was not appropriate