Progress in Obesity Research: 7, edited by A. Angel, H. Anderson, C. Bouchard, D. Lau, L. Leiter and R. Mendelson
©1996 John Libbey & Company Ltd./7th International Congress on Obesity, pp. 471–474.

Chapter 65

Two eating disorders: binge eating disorder and the night-eating syndrome

Albert J. Stunkard, Robert I. Berkowitz, Thomas A. Wadden, Cigdem Tanrikut, Elizabeth Reiss and Lisa Young

Weight and Eating Disorders Program, University of Pennsylvania, School of Medicine, Department of Psychiatry, 3600 Market Street, Suite 734, Philadelphia, PA 19104–2648, USA

Summary

The aim was to determine the prevalence of two eating disorders – binge eating disorder and the night-eating syndrome – in a sample of 102 obese women. Interviews were conducted with 102 responders to a television show recruiting subjects for a medication trial of binge eating disorder. 19.6 per cent of respondents met criteria for binge eating disorder – the consumption of large amounts of food in a discrete period of time together with a subjective sense of loss of control, distress over the disorder, no compensatory behaviours to limit weight gain and a frequency of binging of at least twice a week. The night-eating syndrome – morning anorexia, evening hyperphagia and insomnia – was manifested by 8.8 per cent of the sample. There was little overlap between the two disorders.

Binge eating disorder may be less prevalent than is currently believed. The night-eating syndrome is present in a significant number of obese persons and appears to differ from binge eating disorder.

This report describes the prevalence among obese persons of two eating disorders – binge eating disorder and the night-eating syndrome. It was stimulated by the experience of recruiting subjects for a medication trial of a new appetite suppressant for the treatment of binge eating disorder. This experience suggested that binge eating disorder may be less prevalent than is currently believed and that the little recognized night-eating syndrome may be worthy of further consideration.

Binge eating disorder is a newly-delineated eating disorder characterized by the consumption of large amounts of food in a discrete period of time, together with a subjective sense of loss of control and severe distress about these eating episodes. Unlike patients with bulimia nervosa, those with binge eating disorder do not engage in behaviours such as vomiting and laxative abuse in an effort to limit weight gain[1]. Two large multi-site field trials found a prevalence of about 30 per cent of persons enrolled in weight reduction programmes[2,3], a figure similar to that of early studies conducted in the decade before formal criteria were proposed[4,5,6].

The night-eating syndrome was described in 1955 as a pattern of morning anorexia, evening hyperphagia and insomnia[7]. It was reported to be present in 64 per cent of obese persons in a special

study clinic where they had been referred because of the severity of their obesity or difficulty in i management. The syndrome, however, was identified in only 10 per cent of obese persons in nutrition clinic. For many years there was little apparent interest in the disorder. The major publ cations were those of Kuldau & Rand, who reported the night-eating syndrome in 15 per cent of sample of severely obese persons[8] and by Rand & Kuldau who reported it in 0.4 per cent of persor of normal weight[9]. More recently Schenk & Mahowald have been at the forefront of sleep re searchers who have described 'nocturnal sleep-related eating disorders' among obese persons[10,1 These disorders are characterized by recurrent awakenings during sleep, with the inability to retur to sleep without either eating or drinking, often in association with sleep walking and related slee disturbances.

Methods

Subjects of the present report were all women. They were recruited from persons who called th Weight and Eating Disorders Program in response to a 5-min segment on the local television new The segment began with one of us (AJS) describing binge eating disorder, followed by a patier who described her own experience with the disorder. There was sufficient time to convey the ke features of binge eating and to distinguish it from the eating behaviour of obese persons withou these features. Viewers were given a telephone number to call for further information about a ne medication designed to treat binge eating disorder, but not obesity as such.

A total of 645 inquiries followed the television show, with the vast majority of callers definin themselves as binge eaters. When it became apparent from the telephone calls that very few of th callers were eligible for the medication trial, we selected 102 additional consecutive callers for more systematic assessment of the prevalence of binge eating disorder. The criteria for binge eatin disorder established by Spitzer *et al.*[2,3] are listed in Table 1.

*Table 1. Diagnostic criteria for binge eating disorder**

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

(1) eating, in a discrete period of time (e.g., within any two hour period), an amount of food that is definitely large than most people would eat during a similar period of time in similar circumstances

(2) a sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control how much one is eating)

B. During most binge episodes, at least three of the following behavioural indicators of loss of control are present:

(1) eating much more rapidly than usual

(2) eating until feeling uncomfortably full

(3) eating large amounts of food when not feeling physically hungry

(4) eating alone because of feeling embarrassed by how much one is eating

(5) feeling disgusted with oneself, depressed, or feeling very guilty after overeating

C. The binge eating causes marked distress

D. The binge eating occurs, on average, at least 2 days a week for a 6-month period

E. Does not currently meet the criteria for anorexia nervosa or bulimia nervosa, purging or non-purging type

*From Spitzer[2].

The prevalence of binge eating disorder was determined by a structured telephone interview con ducted by two trained research assistants that was followed, in persons with positive responses, b a face-to-face interview conducted by AJS or RIB. The telephone interview began by determinin whether the subject met Criterion A – recurrent episodes of binge eating – and Criterion C – marke distress regarding binge eating. To meet Criterion A subjects met two subcriteria: (1) ingestion o an objectively large amount of food; and (2) a subjective sense of loss of control during th episode.Subjects meeting these criteria were then asked about Criterion B, limiting the questions t two of five of the behavioural criteria listed in Table 1: (1) eating until uncomfortably full; and (2

feeling disgusted with oneself, depressed or feeling very guilty after overeating. Subjects with positive responses to these two indicators were considered to have met Criterion B, even though Table 1 indicates that at least three indicators are required for the diagnosis of binge eating disorder. Spitzer *et al.*, had found that use of all five indicators did not appreciably increase the precision of diagnosis[2,3].

Further questions then ascertained the presence of the last two criteria, D and E, a frequency of binge eating on average of at least twice a week for 6 months and failure to meet the criteria for bulimia nervosa, respectively.

The presence of the night-eating syndrome was determined by responses to a six-item questionnaire that inquired about morning anorexia, evening hyperphagia and insomnia. It was considered to be present in persons who reported morning anorexia, consumption of more than 50 per cent of daily energy after 7 p.m. and medial insomnia with or without the presence of sleep-onset insomnia.

Results

Subjects had a mean (± S.D.) age of 39.2 ± 10.8 years; weight of 101.7 ± 25.5 kg; height of 1.65 ± 0.069 m, and body mass index (weight in kilograms/height in metres squared) of 37.8 ± 9.1. Clearly the subjects were severely obese.

The first finding of this study is the relatively low prevalence of binge eating disorder. Among these subjects who had identified themselves as suffering from this disorder, only 19.6 per cent received a diagnosis of binge eating disorder. The second finding is the prevalence of the night-eating syndrome – 8.8 per cent. The third finding is that binge eating disorder and the night-eating syndrome seem to represent different entities. Of subjects with binge eating disorder, only 30 per cent manifested the night-eating syndrome while of subjects with the night-eating syndrome only 43 per cent manifested binge eating disorder.

Discussion

This study found a surprisingly low rate of binge eating disorder. This low rate had been foreshadowed by the recruitment efforts for the medication trial described above, in which 1,450 obese women who identified themselves as binge eaters yielded only 50 who entered the trial. Since some of the ineligibility for the trial was the result of medical and other problems, the present study was designed to determine more precisely the prevalence of binge eating disorder – 19.6 per cent – in this 'high risk' sample. This high risk was conferred by the fact that these women had identified themselves as suffering from binge eating disorder after watching a television show in which the disorder was described in detail. They may thus may be presumed to be at considerably higher risk of the disorder than the average obese person or even an obese person entering a weight reduction programme. The 19.6 per cent is considerably lower than the 30 per cent which has become the accepted value for persons entering weight reduction programmes[1]. The reasons for this discrepancy are not apparent but may be attributable at least in part to differences in method of assessment. The prevalence estimates in the two field trials of Spitzer *et al.* were based upon patient self-reports, whereas the estimates in the present study were obtained from a lengthy diagnostic interview. Clearly a large percentage of persons who had diagnosed themselves as binge eaters in response to the television show were found, on careful examination, not to have the disorder.

This study found a small percentage of persons manifesting the night-eating syndrome. In the original report on this disorder it was suggested that it reflected an altered circadian ('diurnal' in 1955) rhythm of food intake and sleep, apparently precipitated by stress[7]. In these ways it was similar to depression. In other ways the night-eating syndrome is dissimilar. In contrast to an improvement in mood during the day in depression, the night-eating syndrome was associated with a deterioration in mood during the day that led to evenings filled with distress and overeating. Also in contrast to depression was the overeating in the night-eating syndrome, so different from the

anorexia and weight loss that often accompanies depression. The night-eating syndrome appears to differ not only from depression but also from binge eating disorder. The results indicate that only a minority of persons manifesting one disorder manifest the other as well.

Does the night eating syndrome differ from 'nocturnal sleep-related eating disorders'? One possibility is that the night-eating syndrome represents a general disorder of circadian rhythm of which nocturnal sleep-related eating disorders occupy the end of a distribution spectrum.

References

1. Yanovski, S.Z. (1993): Binge eating disorder: current knowledge and future directions. *Obesity Res.* **1**, 306–324.
2. Spitzer, R.L., Devlin, M., Walsh, B.T., *et al.* (1992): Binge eating disorder: a multisite field trial of the diagnostic criteria. *Int. J. Eating Disord.* **11**, 191–203.
3. Spitzer, R.L., Yanovski, S., Wadden, T., *et al.* (1993): Binge eating disorder: its further validation in a multisite study. *Int. J. Eating Disord.* **13**, 137–153.
4. Gormally, J., Black, S., Daston, S. & Rardin, D. (1982): The assessment of binge eating severity among obese persons. *Addict. Behav.* **7**, 47–55.
5. Loro, A.D. & Orleans, C.S. (1981): Binge eating in obesity: preliminary findings and guidelines for behavioral analysis treatment. *Addict. Behav.* **6**, 155–166.
6. Marcus, M.D., Wing, R.R. & Lamparski, D.M. (1985): Binge eating and dietary restraint in obese patients. *Addict. Behav.* **10**, 163–165.
7. Stunkard, A.J., Grace, W.J. & Wolff, H.G. (1955): The night-eating syndrome. *Am. J. Med.* **19**, 78–86.
8. Kuldau, J.M. & Rand, C.S.W. (1986): The night eating syndrome and bulimia in the morbidly obese. *Int. J. Eating Disord.* **5**, 143–148.
9. Rand, C.S.W. & Kuldau, J.M. (1986): Eating patterns in normal weight individuals: bulimia, restrained eating, and the night eating syndrome. *Int. J. Eating Disord.* **5**, 75–84.
10. Schenck, C.H. & Mahowald, M.W. (1994): Review of nocturnal sleep-related eating disorders. *Int. J. Eating Disord.* **15**, 343–356.
11. Schenck, C.H., Hurwitz, T.D., O'Connor, K.A. & Mahowald, M.W. (1993): Additional categories of sleep-related eating disorders and the current status of treatment. *Sleep* **16**, 457–466.