

Prevalence of eating disorders in three Cambridge general practices: hidden and conspicuous morbidity

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SUMMARY. *The aims of this study were to investigate the prevalence of anorexia nervosa, bulimia nervosa and partial syndromes in women general practice attenders to establish the relative proportions of 'conspicuous' and 'hidden' morbidity. A consecutive series of 540 women patients aged 16–35 years attending their family doctor were screened using a specially devised questionnaire, the weight and dietary practices survey. A total of 115 patients were selected for further assessment and of these 101 patients were interviewed using a standardized diagnostic interview for DSM III-R eating disorders. The prevalence of anorexia nervosa was 0.2% (one case), of bulimia nervosa 1.5% (eight cases) and of partial syndrome bulimia nervosa 5.4% (29 cases). Half of the cases of bulimia nervosa had not been identified by the general practitioner and two of these patients had been referred to specialists for treatment of secondary complications of the eating disorder.*

Hidden cases of bulimia nervosa or partial syndromes are relatively common in general practice. Certain key questions could be used by general practitioners in order to identify women with eating disorders.

Keywords: *appetite disorders; missed diagnosis; womens health.*

Introduction

IN recent years there has been considerable interest in the epidemiology of anorexia nervosa and bulimia nervosa. One study in British schools found the prevalence of anorexia nervosa to be approximately 1% among girls over 16 years of age in private schools, with a lower rate in state schools.¹ The study also reported a 'number of girls who, while not suffering from severe and clear-cut primary anorexia nervosa, nevertheless went through times when their behaviour in some ways resembled the condition'. Other studies have commented on the high rate of subclinical cases of eating disorders which do not fulfil formal diagnostic criteria but where patients are preoccupied with weight, food intake and losing weight, and present a chaotic eating pattern.^{2–5}

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The prevalence of bulimia nervosa among young women has been found to be 1–2%.^{6–10} The prevalence of partial syndromes has consistently been found to be considerably greater than that of clinical eating disorders.^{5,8,11,12}

In addition to the core diagnostic features, both anorexia nervosa and bulimia nervosa present with a number of ancillary physical and psychiatric symptoms. Thus, typical symptoms of starvation include menstrual disturbance, bradycardia, hypothermia, sleep disturbance and labile and depressed mood. Bulimic episodes produce parotid gland enlargement, and vomiting and laxative abuse can lead to a multitude of problems including electrolyte disturbance with potential renal and cardiac complications, dental enamel erosion, steatorrhoea, oedema of the upper and lower limbs and clubbing of the fingers.¹³ Secondary depressive symptoms are common and are often severe.¹⁴

Patients presenting in specialist clinics with eating disorders frequently have long histories. For example, in Cambridge, patients with bulimia nervosa presenting to the psychiatric outpatient department typically have a four to five year history, which is the same as that reported by patients presenting in Oxford.¹⁵ It is common for such patients to report that, although they had concealed their eating problems for many years, they had frequently consulted their general practitioner for secondary complications of the disorder. Cases of anorexia nervosa are similarly missed in both medical and psychiatric settings.¹⁶

The prevalence and detection of psychiatric disorder in general practice, notably anxiety and depression, have been extensively studied.^{17,18} A major finding has been that, in addition to cases detected by general practitioners (the 'conspicuous morbidity'), there is a significant 'hidden morbidity'. Given the high prevalence of eating disorders in community samples and the plethora of physical and psychological complications, there is likely to be a considerable hidden morbidity of such disorders among women consulting their general practitioner.

There have been few studies of eating disorders in general practice attenders. Zinkand and colleagues screened patients attending a family practice in the United States of America with the eating attitudes test but did not carry out interviews.¹⁹ King screened general practice attenders with the eating attitudes test at four south London group general practices and, in addition, conducted a semistructured interview on high scorers and a random selection of low scorers.⁸ He found that 1% of women had bulimia nervosa and 3% a partial syndrome eating disorder; no cases of anorexia nervosa were found. In a further study the high scorers on the eating attitudes test were followed up 12 to 18 months later.²⁰ Some change was found along the continuum of normal dieting to the full syndrome but only one patient with bulimia nervosa had recovered appreciably. The general practitioners in the four practices were largely unaware of the eating pathology. Meadows and colleagues screened 584 young women on the list of a British general practice rather than general practice attenders.²¹ One patient with bulimia nervosa and one with anorexia nervosa were identified.

This study aimed to measure the prevalence of clinical eating disorders and partial syndromes in women general practice attenders. It appeared likely that a proportion of these cases would be unknown to the general practitioner and would therefore be 'hidden cases'.

Method

The study took place in November 1987 in three Cambridge general practices — one in central Cambridge and two on the periphery of the city. The central practice had a large number of students on its list.

A two-stage study was conducted. In the first stage consecutive women patients aged 16–35 years attending ordinary surgeries were invited to complete a questionnaire, the weight and dietary practices survey. This was completed before the patients saw their general practitioner. The second stage involved interviews with a sub-group of the screened sample.

Weight and dietary practices survey

This short and simple questionnaire was designed to determine whether patients' weight was below 85% of the matched population mean weight (possibly suffering from anorexia nervosa) by asking for their weight and height, and whether they experienced episodes of excessive overeating in which they felt totally out of control (possibly suffering from bulimia nervosa). If a patient reported either of these problems they were invited back for interview.

Interview

The interviews were conducted by A W, C V, C H and L V, the majority in the general practice surgery. The remaining interviews were carried out in the patient's home. The patients were interviewed using a specially devised diagnostic interview for DSM III-R eating disorders²² based on items derived from the eating disorder examination.^{23,24} Its purpose was to determine whether each diagnostic criterion for DSM III-R eating disorders was fulfilled. In addition, all patients completed the following questionnaires: the body shape questionnaire,²⁵ the 40-item eating attitudes test,²⁶ the 28-item general health questionnaire,²⁷ and the Beck depression inventory.²⁸

The height and weight of the patients were then measured. The patients were asked whether they considered that they currently had an eating problem, whether they had ever discussed such a problem with their general practitioner, and whether they felt they needed help with an eating problem. They were also asked the reason for their consultation with their doctor and for permission to examine their medical notes. This was to determine whether the general practitioner had made a diagnosis of an eating disorder. A 'conspicuous case' would be recorded when the general practitioner had clearly made a diagnosis of an eating disorder and written this in the notes. A 'hidden case' would be recorded when the research team had made a diagnosis of an eating disorder diagnosis but there was no reference to such a diagnosis in the notes.

Results

A total of 540 consecutive women attending the three general practices were asked to complete the weight and dietary practice survey. Seventeen patients refused and two gave incomplete answers. Thus, 521 women (96.5%) completed the questionnaire fully. Of these 521 patients, 35 indicated that their weight was below 85% of the matched population mean weight, 77 that they experienced episodes of excessive overeating in which they felt totally out of control, and three patients indicated that both applied. These 115 women (22.1% of the sample of 521) were then invited for interview. Fourteen were unavailable or refused to be interviewed and therefore 101 women (87.8%) were successfully interviewed — 33 had indicated that their weight was below 85% of the matched population mean weight, 65 that they experienced episodes of excessive overeating and three that both applied.

At interview none of the women were found to suffer from anorexia nervosa. However, one of the patients who refused to complete the weight and dietary practice survey was known to be suffering from anorexia nervosa. Thus, the point prevalence for anorexia nervosa was 0.2%. There were no cases of partial syndrome anorexia nervosa. Of the 33 patients who were interviewed solely because their weight was below 85% of the matched population mean weight none were found to suffer from eating disorders or partial syndromes. None of the three patients who reported being underweight and experiencing episodes of excessive overeating were found to suffer from an eating disorder.

Eight cases of bulimia nervosa were detected giving a point prevalence of 1.5%. Twenty nine cases of partial syndrome bulimia nervosa were detected giving a point prevalence of 5.4%. These cases of partial syndrome bulimia nervosa can be broken down into three groups.

Group A. Eleven patients who fulfilled all criteria for DSM III-R bulimia nervosa apart from criterion D (at least twice weekly frequency of bulimic episodes).

Group B. Eleven patients who fulfilled all criteria for DSM III-R bulimia nervosa but did not fulfil some or all of criteria C (compensatory behaviour to prevent weight gain), D and E (over concern with shape or weight).

Group C. Seven patients who fulfilled criteria A for DSM III-R bulimia nervosa (recurrent bulimic episodes) but did not fulfil some or all of criteria B (feeling of lack of control over eating behaviour during episodes of excessive overeating), C, D and E. Two of these patients fulfilled only criteria A.

The mean scores on the eating attitudes test, the body shape questionnaire, the general health questionnaire and the Beck depression inventory for the patients with bulimia nervosa and the three partial syndromes are given in Table 1. There were significant differences between groups on all these questionnaires with the bulimia nervosa group scoring higher than other groups on all four questionnaires. Of those with the partial syndrome, those women with the full syndrome apart from a twice weekly frequency of bulimic episodes (group A) were the closest to the bulimia nervosa group in terms of questionnaire scores. There were no significant differences between the groups in terms of mean age of patients.

Of the eight women with bulimia nervosa six felt that they definitely needed help with their eating disorder, whereas only one patient in group A, two patients in group B and no one

Table 1. Questionnaire scores for bulimia nervosa and partial syndrome groups.

	Mean score for group				
	With bulimia nervosa (n = 8)	A (n = 11)	B (n = 11)	C (n = 7)	Normal score
Eating attitudes test	48.4	28.6	14.8	21.3***	12.0 ⁵
Body shape questionnaire	163.1	121.1	89.6	87.5***	23.8 ²³
General health questionnaire	16.1	8.5	7.0	8.8*	4.4 ³²
Beck depression inventory	29.3	15.4	13.0	9.0**	10.9 ²⁸

n = number of patients in group. One way analysis of variance (test for trend): *** P<0.001; ** P<0.005; * P<0.05.

in group C felt that they definitely needed help. Three women with bulimia nervosa had discussed their eating problems with their general practitioner. Among the patients with partial syndromes two in group A, three in group B and two in group C had discussed their eating problems with their doctor. Of the five women with bulimia nervosa who said they had not discussed their eating problems with their general practitioner, one had previously suffered from anorexia nervosa and the general practitioner was aware of her current eating problems. The general practitioner was unaware of the eating disorder of the other four women. In two of these cases, the general practitioner had referred the patient to a specialist because of secondary complications of bulimia nervosa. A 23 year old student had been referred to a consultant psychotherapist because of panic attacks. The eating problems had not been discussed in the psychotherapy sessions. A 20 year old student had been referred on two occasions to a consultant gynaecologist because of secondary amenorrhoea (Appendix 1).

Discussion

In this study the point prevalence of a DSM III-R diagnosis of anorexia nervosa²² among 16–35 year old women attending general practice was 0.2%. This is similar to the range of values (0.2–0.4%) found in female college populations.¹⁰ However, this prevalence is based on one woman who refused to complete the screening questionnaire but was currently being seen by a member of the research team for treatment of anorexia nervosa. King screened 534 women general practice attenders and found no cases of anorexia nervosa. He commented that 'it would seem likely that several cases of anorexia nervosa were missed, probably through denial'.²⁰ The fact that the one anorexia nervosa subject detected in this study did attempt to escape detection would add support to this view and it is certainly possible that other cases of anorexia nervosa were missed.

The point prevalence of a DSM III-R diagnosis of bulimia nervosa in this population was 1.5% which is similar to the 1.6–1.9% found in other community samples in the United Kingdom where Russell's criteria²⁹ have been used,^{6,7,10} but somewhat higher than the 1.1% prevalence rate found in general practice by King.⁸

There has been recent interest in eating disorders that fall outside formal diagnostic criteria but appear nevertheless to be clinically important.³⁰ The term 'subclinical' was first applied to these disorders in 1981 by Button and Whitehouse.⁵ Another term, 'partial syndromes' has also been used to describe similar disorder phenomena.¹² Obviously the definition of such a sub-threshold disorder depends on the criteria for the full clinical disorder. The most recent criteria for bulimia nervosa^{22,31} are stricter than earlier versions^{23,32} and the boundary between a subthreshold disorder and a full syndrome has thus moved.

This study screened patients on the basis that they admitted to experiencing episodes of excessive overeating in which they felt totally out of control or where their weight was less than 85% of the matched population mean weight. Eighty women admitted to episodes of out of control eating on the carefully worded questionnaire but of the 68 interviewed only 37 (54%) were found to have this symptom indicating that self reports of excessive over-eating are not reliable. At interview 29 patients were considered to have partial syndromes and of these only two fulfilled only criteria A of the DSM III-R criteria for bulimia nervosa. A prevalence rate for partial syndromes of 5.4% is similar to that reported by Button and Whitehouse⁵ in a student population. Other studies have found the prevalence of partial syndromes to be 2–3%.^{8,11} In the present study all the partial syndrome groups had elevated scores on the four question-

naires completed. However, the group with definite bulimia nervosa had significantly higher scores on all these measures than those with partial syndromes. They were also more likely to feel that they needed help with their eating disorder.

As only one case of anorexia nervosa was identified it is not possible to come to any conclusions regarding the conspicuous versus hidden morbidity of anorexia nervosa. However, half of the eight cases of bulimia nervosa identified were not known to their doctor and two of these hidden cases were referred by the general practitioner to specialist care — one with psychological symptoms and the other for a physical secondary complication. The small numbers do not allow comment on the general pattern of presenting symptoms of bulimia nervosa in hidden cases. King's general practice survey²⁰ identified six cases of bulimia nervosa, all of which were hidden. One of these women had also been referred for an investigation of amenorrhoea.

What can general practitioners do in order to avoid missing cases of eating disorder? One of the screening questions used in this study was to ask the patients for their weight and height. Among the 35 patients who indicated that they were underweight but did not report episodes of uncontrolled eating, none of the 33 women interviewed were found to have an eating disorder. It is possible that an underweight woman with anorexia nervosa would not give her true weight. Overall this screening question does not seem to be a useful one in detecting women with eating disorders. The second screening question asks the patient whether they had experienced any episodes of excessive overeating in which they felt totally out of control. Among the 77 women who reported only episodes of excessive overeating, eight of the 65 women interviewed were found to have bulimia nervosa and 29 partial syndrome. This question does, therefore, seem to be useful in general practice where symptoms being presented could possibly be part of an eating disorder. Patients should also be asked about dieting, self-induced vomiting, purgative abuse and exercise. Questions about eating disorder psychopathology such as body image disturbance, fear of fatness and persistent over concern with body shape and weight are also important.

In conclusion, hidden cases of bulimia nervosa or sub-threshold presentations of this disorder are relatively common in general practice. Many of these disorders go undetected even when specialist help is sought for what are likely to be secondary complications of the eating disorder. Certain key questions could be used by general practitioners in order to identify women with eating disorders.

Appendix 1. Case history.

A is a student who had first presented to her general practitioner in October 1986 aged 19 years complaining of amenorrhoea of six months duration. Prior to the onset of the amenorrhoea she had lost 10 kg over a short period of time by strict dieting. During this period of dieting she had begun to experience bulimic episodes and to abuse laxatives. She had originally weighed 64 kg (105% of the matched population mean weight) and had reduced to 54 kg. She did not mention the weight loss and disturbed eating to the general practitioner. She was referred to a gynaecologist and was seen in December 1986. She was weighed at the gynaecology outpatient department and her weight was recorded as 56 kg. She did not disclose her weight loss or bulimic behaviour to the gynaecologist who noted in the letter to the general practitioner that 'there is no history of weight loss or emotional problems'. Physical examination was entirely normal. The following investigations were ordered: serum concentrations of total thyroxine, thyroid stimulating hormone, prolactin, follicle-stimulating hormone, luteinizing hormone, testosterone, oestradiol, and cortisol, ultrasound of ovaries, and a skull x-ray for pituitary fossa. The results of these investigations were entirely normal. She was given a six month appointment which she did not attend.

She continued experiencing bulimic episodes and abusing laxatives and gradually regained weight although her periods did not return. In November 1987 (when she was seen in this study) she had been re-referred to the gynaecologist because of persistent amenorrhoea. Her weight when seen in this study was 61 kg. She was seen by the gynaecologist early in January 1988. At this point she weighed 68 kg, a gain of 7 kg over four weeks. The gynaecologist found no clinical abnormality and she was given a further six month appointment.

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RESEARCH FUNDING

Applications are now being received for grants for research in or relating to general medical practice, for consideration at the May 1992 meeting of the Scientific Foundation Board. In addition to its general fund the Board also administers specific funds including

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The Scientific Foundation Board's definition of research is catholic and includes educational research, observational as well as experimental studies, and accepts the methodologies of social science as valid. It is not in a position to fund educational activities.

If the study involves any intervention or raises issues of confidentiality it is wise to obtain advance approval from an appropriate research ethics committee otherwise a decision to award a grant may be conditional upon such approval.

Studies which do not, in the opinion of the Board, offer a reasonable chance of answering the question posed will be rejected. It may sometimes be useful to seek expert advice on protocol design before submitting an application.

Care should be taken to ensure that costs are accurately forecast and that matters such as inflation and salary increases are included.

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