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Eating disorders

Early identification in general practice

Background

Eating disorders are complex illnesses that impact on both the physical and socio-emotional health of young people, and contribute to significant morbidity. Dieting behaviours and body image concerns are common in adolescence and it can be challenging to identify those at the extreme end of this spectrum who are at risk of an eating disorder.

Objective

This article presents a brief overview of eating disorders, with a focus on early identification in general practice. An approach to diagnosis is outlined together with an update on evidence based treatments.

Discussion

General practitioners are uniquely placed to recognise early onset eating disorders, offer intervention and help coordinate and monitor treatment. Early detection and management may contribute to better outcomes.

Keywords: eating disorders; adolescent; young adult; general practice



Eating disorders are serious illnesses that affect both the physical and socio-emotional health of young people; they have significant impact on families and cause significant mortality and morbidity. The main eating disorders comprise:

- anorexia nervosa (AN)
- bulimia nervosa (BN), and
- eating disorders not otherwise specified (EDNOS), ie. eating disorders that do not fully meet the criteria for either AN or BN.

Although eating disorders are rare in the general population, they are relatively common in teenagers and young women. Eating disorders represent the third most common chronic illness (after asthma and obesity) in adolescent females. The prevalence of AN is about 0.3%; BN is more common, with a prevalence of about 1% in young women and 0.1% in men;¹ and EDNOS occur at much higher rates than full syndrome disorders.

Eating disorders are diagnosed using the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria² (Table 1). Changes are proposed for DSM-V³ to better capture low body weight for growing adolescents and for patients who have lost significant weight but have not yet fallen below 85% of expected body weight, for example those who were previously overweight.

Body image concerns occur frequently among adolescents and dieting is a priority for many young people.⁴ In the context of increasing rates of obesity there has been increased focus on weight reduction, dieting and physical activity in the general community. Young people who diet moderately are six times more likely to develop an eating disorder; those who are severe dieters have an 18-fold risk.⁵ While only a small proportion of those who diet develop an eating disorder, dieting is a major risk factor.

When does severe dieting become an eating disorder?

Early warning signs of an eating disorder include:

- a constant focus on dieting, food and exercise
- insisting on having different meals from the rest of the family
- feeling stressed when unable to exercise
- increasing social withdrawal
- frequent weighing
- frequent visits to the bathroom after meals.



Table 1. DSM-IV diagnostic criteria for common eating disorders²

Anorexia nervosa

1. Refusal to maintain body weight at or above a minimally normal weight for age and height (eg. weight loss leading to maintenance of body weight less than 85% of that expected, or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected)
2. Intense fear of gaining weight or becoming fat, even though underweight
3. Disturbance in the way that body weight, size or shape is experienced, undue influence of body shape and weight on self evaluation, or denial of the seriousness of current low body weight
4. In postmenarchal females, amenorrhoea, ie. the absence of at least three consecutive menstrual cycles

Types

- Restricting type: during the current episode of anorexia nervosa, the person has not regularly engaged in binge eating or purging behaviour (self induced vomiting, misuse of laxatives, diuretics, or enemas)
- Binge eating/purging type: during the current episode of anorexia nervosa, the person has regularly engaged in binge eating or purging behaviour (ie. self induced vomiting or the misuse of laxatives, diuretics, or enemas)

Bulimia nervosa

1. Recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following:
 - Eating in a discrete period of time (eg. within any 2 hour period) an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances
 - A sense of lack of control over eating during the episode (eg. a feeling that one cannot stop eating or control what, or how much, one is eating)
2. Recurrent inappropriate compensatory behaviour in order to prevent weight gain such as self induced vomiting, misuse of laxatives, diuretics, enemas, or other medications, fasting, or excessive exercise
3. Binge eating and inappropriate compensatory behaviours both occur on average at least twice a week for 3 months
4. Self evaluation is unduly influenced by body shape and weight
5. The disturbance does not occur exclusively during episodes of anorexia nervosa

Types

- Purging type: during the current episode of bulimia nervosa, the person has regularly engaged in self induced vomiting or the misuse of laxatives, diuretics, or enemas
- Nonpurging type: during the current episode of bulimia nervosa, the person has used other inappropriate compensatory behaviours such as fasting or excessive exercise, but has not regularly engaged in self induced vomiting or the misuse of laxatives, diuretics, or enemas

The central characteristic of AN is a pathological fear of weight gain associated with an overwhelming drive for thinness.

Common presentations to the GP

Young people are typically brought to the attention of the general practitioner by concerned parents, school nurse or counsellor because of the extent of the young person's weight loss. Other presenting features may include:

- altered eating or dietary behaviour
- excessive exercise
- amenorrhoea
- depressed mood and/or withdrawal from social contact.

A single GP consultation for eating behaviour or weight and shape concerns has been identified as a significant predictor for the subsequent emergence of an eating disorder.⁶

The young person may also present with physical complaints related to under nutrition including dizziness, fatigue and headache, or abdominal symptoms such as nausea or bloating, unexplained vomiting, lack of appetite and constipation. A high degree of suspicion is required as the diagnosis may be missed in the pursuit of multiple investigations. Some illnesses with presenting features similar to that seen in eating disorders are listed in *Table 2*.

Clinical findings

Suggested questions useful in screening for an eating disorder include:

- How do you feel about your weight?
- How much do you think you should weigh?
- Do you or anyone else have any concerns about your eating or exercise behaviours?

If an eating disorder is suspected, a broader history and psychosocial assessment is warranted. Questions about the extent of weight loss, methods employed, exercise and amenorrhoea are particularly important. A 24 hour dietary history, and assessment of mental state is also helpful. Parents may be able to provide information about

Table 2. Main differential diagnoses of eating disorders

Malabsorption syndromes

- Inflammatory bowel disease
- Coeliac disease

Endocrine

- Diabetes mellitus
- Hyperthyroidism

Malignancy

- Central nervous system tumours, lymphoma, leukaemia

Other psychiatric disorders

- Depression
- Obsessive compulsive disorder
- Anxiety disorder



behaviours that inhibit weight gain, as the young person may deny the possibility of an eating disorder.

The physical examination findings in AN reflect malnutrition, and those in BN relate to purging (Table 3). Importantly there may be no abnormal physical findings in AN, BN and in EDNOS. The GP should measure height and weight, calculate body mass index (BMI) and monitor these values longitudinally using appropriate centile charts. Eating disorders may be reflected in the failure to gain weight appropriately rather than weight loss; hence BMI in isolation can be misleading in children and adolescents.

Anorexia nervosa	Bulimia nervosa
Growth delay, pubertal delay	Normal or overweight
Sallow complexion	
Cachexia, sunken cheeks	Dental erosion
Dry, thinning hair	Parotid gland enlargement
Lanugo, dry skin	
Cool peripheries, acrocyanosis	
Vital signs: hypothermia, bradycardia, postural tachycardia, postural hypotension	
Reduced muscle bulk and subcutaneous tissue	
Abrasions over spine from excessive exercise	
Ankle oedema	

Investigations

In most cases, patients with an eating disorder will have normal laboratory results – the biochemical markers may not be an accurate indicator of the severity of illness or medical instability. Relevant baseline laboratory tests include a full blood count (FBC) electrolytes, random blood glucose, calcium, magnesium and phosphate, follicle stimulating hormone (FSH), luteinising hormone (LH), and oestradiol. Details of these investigations are listed in Table 4.

Electrocardiogram may be helpful in evaluating arrhythmias. The most common arrhythmias are sinus arrhythmia and bradycardia. Depending on circumstances, other investigations may be indicated to exclude other differential diagnoses, eg. erythrocyte sedimentation rates (ESR), coeliac screen and thyroid stimulating hormone (TSH). The bone age from X-rays can be useful to assess delayed growth. As the combination of restrictive diet and amenorrhoea has significant impact on bone density, bone mineral densitometry is usually performed at baseline and annually thereafter for all patients with AN or EDNOS, and for BN patients with a past history of AN.

Role of the GP in detection and monitoring

General practitioners play a key role in the detection and management of disordered eating, problematic dieting and early eating disorders. There

is evidence that short duration of illness, weight restoration, and long term follow up may contribute to better outcomes in younger adolescent patients.^{7,8} While diagnostic criteria are a useful guide, the GP should consider intervention if disordered eating and abnormal behaviours are present, even if the criteria are not met. Although sometimes termed ‘subclinical’, EDNOS can be just as serious as AN and BN; these patients appear to suffer the same physical and psychological consequences as AN and BN with concomitantly elevated rates of morbidity and mortality.⁹

In conjunction with the treating team, the GP can play an important role in monitoring long term medical concerns such as bone density (annually while unwell) and growth (varies with severity of illness but at least 6 monthly). Patients at risk of ‘re-feeding syndrome’ will require close monitoring with daily biochemical tests looking for hypophosphataemia and should be admitted for inpatient treatment. If baseline tests are normal, no further biochemical monitoring is required unless new indications arise. Abnormal results should be followed up according to standard treatment protocols (eg. low vitamin D should be repeated after 2–3 months of supplementation). The GP is also well placed to monitor ongoing psychosocial issues and general wellbeing, for example school attendance and peer and family relationships.

Treatment

There are numerous approaches to treating eating disorders, many of which are controversial and have limited evidence base. For medically stable adolescents with AN, specialist outpatient management by a multidisciplinary team is recommended.^{10–12} This should include medical, mental health and nutritional components. Family assessment and involvement are considered essential and the treatment with the strongest evidence base for adolescent AN is family based therapy (FBT).¹³

Developed at the Maudsley Hospital in London, FBT involves parents becoming actively involved in helping the young person to restore weight through increased dietary intake and reduced exercise and purging.¹⁴ A specially trained clinician assists the parents, in a blame-free manner, to take control of the young person’s eating until such time as control can be gradually returned to the young person. Family based therapy typically requires 6–12 months of outpatient treatment.

To date there has been six published randomised controlled trials of FBT, most with significant follow up periods. Overall, these studies have demonstrated that 50–75% of patients are weight restored by the end of treatment, with 60–90% fully recovered at 4–5 year follow up.¹⁵

There is only weak support for the use of other outpatient treatments for adolescent AN such as cognitive behavioural therapy (CBT), interpersonal psychotherapy, and nutritional counselling.¹³ Individual therapies are only recommended for patients with AN after weight restoration has been achieved, as formal psychotherapy is likely to be ineffective due to the obsessionality and cognitive impairments associated with malnourishment.¹⁰

The treatment with the strongest evidence base for BN is CBT.¹³ Cognitive behavioural therapy initially aims to normalise eating patterns and reduce binge/purge episodes. Following this, maladaptive thought patterns associated with the disorder are identified and modified. In

**Table 4. Investigations for suspected eating disorders**

Investigation	Possible findings
Full blood examination	<ul style="list-style-type: none"> Mild leucopenia or thrombocytopenia from malnutrition Anaemia from malnutrition or gastrointestinal losses
Urea and electrolytes*	<ul style="list-style-type: none"> Hyponatraemia from excess water intake Hypokalaemia from vomiting Metabolic alkalosis from vomiting
Random blood glucose	Rarely low
Calcium, phosphate and magnesium	Hypocalcaemia, hypmagnesia and hypophosphataemia (uncommon)
Liver function tests	Slight elevation from malnutrition; albumin normal unless very chronic
Follicle stimulating hormone (FSH), leutinising hormone (LH) and oestradiol	Suppressed FSH and LH – oestradiol usually low
Bone densitometry	Scores may be reduced from low hormone levels and malnutrition
Vitamin D	Low from malnutrition
Haematinics – iron studies, B12 and folate	If indicated – low from malnutrition

* Note electrolytes may also be elevated due to dehydration

Table 5. Admission criteria for eating disorders

- Bradycardia (resting heart rate <50 bpm)
- Orthostatic hypotension (>10 mmHg systolic)
- Hypothermia (temp. <35.5°C)
- Arrhythmia
- Severe electrolyte disturbances, eg. hypokalaemia (K <3.0 mmol/L)
- Acute dehydration from refusal of all food and fluids

addition to CBT, there is also some support for the use of interpersonal psychotherapy, behavioural therapies, and FBT for BN.

Part of the GP's role in detection and monitoring is referral to specialist eating disorder teams and inpatient treatment if required. *Table 5* outlines common criteria for inpatient medical treatment. These centre on physiological instability and electrolyte derangement. Other reasons for admission include growth failure in younger adolescents and suicidal ideation. The GP should be concerned if a young person presents with rapid weight loss in a short period of time, as there a greater likelihood of developing haemodynamic instability. Similarly the young person who

presents with severe restriction of intake preceding a dramatic increase in intake (often in response to advice from health professionals) is at risk of developing re-feeding syndrome.

Summary of important points

- General practitioners have an important opportunity to recognise eating disorders early in their course.
- Severe dieting and subclinical eating disorders also cause significant morbidity if untreated.
- Involving families in the treatment process is essential for better outcomes; family based therapy has the strongest evidence base for treatment in this age group.
- The prognosis of eating disorders in adolescence may be improved with early detection, intervention and ongoing follow up.

Authors

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