Early detection of eating disorders in general practice

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Background

General practitioners (GPs) are often the first health professional consulted in regard to eating disorders and their varied presentations. Given the prognostic significance of early detection of, and intervention for, such conditions, it is important that GPs feel confident to do so.

Objective

The aim of this article was to heighten awareness of the role of early identification and diagnosis of eating disorders, especially anorexia nervosa and bulimia nervosa, in the primary care setting. The focus will be on their presentations and diagnosis, including changes to the *Diagnostic and statistical manual of mental disorders*, 5th edition (DSM-5), with a brief overview of management recommendations and admission criteria.

Discussion

Eating disorders are complex, potentially life-threatening illnesses with significant medical and psychosocial consequences. Early detection and intervention can significantly contribute to better outcomes, and GPs are ideally placed to effect this.

Eating disorders are complex, potentially life-threatening conditions characterised by significant disturbances in eating behaviour that result in serious medical, psychiatric and psychosocial consequences. Eating disorders are formally classified on the basis of the *Diagnostic and statistical manual of mental disorders,* 5th edition (DSM-5) criteria (Table 1).[1]

DSM-5 classification and criteria

The diagnostic criteria for anorexia nervosa and bulimia nervosa were updated in the DSM-5. Other eating disorders, including binge-eating disorder (BED), pica, rumination and avoidant/restrictive food intake disorder (ARFID), have also been added in the DSM-5. In addition, atypical presentations are now included under the newly named categories of other specified feeding or eating disorder (OSFED), and unspecified feeding or eating disorder (UFED); these replace eating disorder not otherwise specified (EDNOS).

Some of the significant revisions are the removal of amenorrhoea as a diagnostic criterion for anorexia nervosa in female patients, and reduction of binge frequency to an average of once per week for bulimia nervosa.[2] The modifications were anticipated to better represent the symptoms and behaviours of patients dealing with these conditions, and enable more specific eating disorder diagnoses, thereby facilitating initiation of appropriate and timely management.[2–4] In theory, these modifications broaden the criteria for specific eating disorders such as anorexia nervosa and bulimia nervosa, but also more precisely categorise the previous diagnostic category of EDNOS. Patients who lose significant amounts of weight and meet the other diagnostic criteria for anorexia nervosa, but who are not underweight, will now be diagnosed with atypical anorexia nervosa.[4]

Magnitude of the problem

The prevalence of eating disorders in Australia is conservatively estimated to be 9% of the adult population, and this figure continues to increase.[5] In fact, a 2015 study of older adolescents and adults found a point prevalence as high as 16.3%, where BED accounted for 6.3% and subthreshold BED 7%. By contrast, anorexia nervosa and bulimia nervosa each occurred in less than 1% of the population.[6]

In spite of the seemingly low prevalence rate in the general population, anorexia nervosa and bulimia nervosa are of great significance because of their incidence in adolescent female patients and their mortality rate.[7] These conditions represent the third most common chronic illness (after asthma and obesity) in adolescent female patients.[7] In addition, anorexia nervosa has the highest mortality rate of all psychiatric disorders;[8] long-term studies report mortality rates of approximately 20%.[9] It has been noted that 'compared with their peers without the illness, the risk of premature death is approximately

Table 1. Summary of DSM-5 diagnostic criteria for eating disorders

Anorexia nervosa	Bulimia nervosa
a. Restriction of energy intake resulting in a significantly low body weight; or a less than minimally expected weight (based on age, sex or developed trajectory) b. Intense fear of gaining weight; or persistent behaviour that interferes with weight gain, despite low weight c. Disturbance in body image; or persistent lack of recognition of the seriousness of the current low body weight Subtypes: Restricting type, binge-eating/purging type	a. Recurrent episodes of binge eating (this involves eating an excessive amount of food in a discrete period of time AND a sense of lack of control) b. Recurrent inappropriate compensatory behaviours to prevent weight gain, such as vomiting, laxatives, diuretics, fasting or excessive exercise c. Frequency of at least once per week for three months d. Self-evaluation unduly influenced by body shape and weight e. Absence of anorexia nervosa
Binge eating disorder	**Other specified feeding or eating disorder (OSFED)**
a. Recurrent episodes of binge eating b. Associated with symptoms such as eating more rapidly, feeling uncomfortably full, not feeling hungry, eating alone due to embarrassment and/or feelings of self-disgust c. Marked distress regarding binge eating d. Frequency of at least once per week for three months e. Absence of compensatory behaviours, anorexia nervosa and bulimia nervosa	Eating disorders causing significant distress but not meeting criteria for other diagnostic categories Examples: • Atypical anorexia nervosa – 'normal weight anorexia nervosa' • Bulimia nervosa (of low frequency and/or limited duration) • Subthreshold binge-eating disorder • Purging disorder • Night eating syndrome
Avoidant/restrictive food intake disorder (ARFID)	**Unspecified feeding or eating disorder (UFED)**
a. Eating or feeding disturbance with persistent failure to meet nutritional needs associated with either significant weight loss (or growth failure), significant nutritional deficiency, dependence on enteral/supplemental feeding or marked interference with psychosocial functioning b. Not explained by lack of available food or culturally sanctioned practice c. Absence of anorexia nervosa, bulimia nervosa or body image disturbance d. No intercurrent medical illness	Presentations in which clinically significant symptoms occur but do not meet full criteria for other eating disorders. Includes situations where the clinician chooses not to specify the reason criteria are not met or where this may be unknown (eg emergency room setting)

tenfold higher in a person with anorexia nervosa'.[10]

In addition, these illnesses represent a significant socioeconomic cost to the community. In 2012, Deloitte Access Economics estimated the figure to be $69.7 billion. Of this amount, the direct healthcare cost is $99.9 million and the remainder is due to productivity loss and loss of healthy years of life.[11]

Importance of early identification

To limit the impact of these disorders in terms of physical, psychiatric and economic outcomes, it is essential that general practitioners (GPs) are able to identify and initiate management in such patients, as primary care is the context of most presentations. Given that early intervention may limit the progression and improve outcomes of eating disorders, early recognition is imperative.[12–15] Hence, it is appropriate to commence medical management before a patient fulfils all of the diagnostic criteria of a particular eating disorder,[14] thereby limiting or reversing symptom progression and optimising prognosis.

General practice consultation

GPs face a number of challenges in the early identification of patients with an eating disorder;[15,16] this is particularly the case when the presentation does not relate to dietary intake or weight. Conversely, the classic presentation of the adolescent brought in by a parent who is concerned about their child's nutritional intake, behaviours surrounding food and/or weight, should alert the GP to the possibility of an eating disorder with a more directed history and examination protocol.

However, far more challenging from a detection and therefore diagnostic standpoint is a patient who presents with seemingly 'unrelated complaints'.[15] These complaints include psychological issues such as stress, depression or anxiety; physical complaints such as fatigue, dizziness, gastrointestinal problems (especially constipation and bloating) and, for female patients, menstrual irregularities; chronic health problems such as osteoporosis; and socioeconomic

consequences such as financial insecurity due to inability to sustain employment.[17–19]

Of course, the other impediment to early identification is delayed presentation. Patient factors contributing to this include:[15,20]

- ambivalence about recovery
- stigma and shame
- denial of, and failure to, perceive the severity of the illness
- low motivation to change
- negative attitudes towards seeking help
- lack of knowledge about available resources
- practical issues (eg distance, cost).

There are a number of screening tools that can be used in the primary care setting to assist in the detection and diagnosis of eating disorders. The best known of these is the SCOFF questionnaire, which consists of five questions:[21]

1. Do you make yourself **S**ick because you feel uncomfortably full?
2. Do you worry you have lost **C**ontrol over how much you eat?
3. Have you recently lost more than **O**ne stone (6.35 kg) in a 3 month period?
4. Do you believe yourself to be **F**at when others say you are too thin?
5. Would you say that **F**ood dominates your life?

Each 'yes' answer scores one point and a score of ≥2 indicates a likely diagnosis of anorexia nervosa or bulimia nervosa.[21] However, the most poignant comment on diagnosis is conveyed in this quote from the National Institute for Health and Clinical Excellence (NICE) guidelines: 'The most effective screening device probably remains the general practitioner thinking about the possibility of an eating disorder'.[19]

In addition to screening tools, there are a number of 'warning signs' that can aid in the detection of eating disorders. Some of these warning signs can be difficult to detect because of the patient's secrecy, deception or shame surrounding their behaviours.[14,19] However, other signs can be readily observed in the consultation or described by family members. The warning signs include psychological manifestations, commonly anxiety; behaviours such as avoiding meals; and physical issues that include menstrual irregularity or cessation in female patients. A detailed list of these features is shown in Table 2.

Hence, a detailed history is paramount in the assessment process. When a detailed history is performed in an empathic and non-judgemental manner, it provides an ideal opportunity for engagement with patients and a greater likelihood that they will accept the medical care they require.[14,18] There are only a few other medical conditions where the therapeutic alliance between doctor and patient is so critical.[19]

A thorough history will also eliminate many of the other potential differential diagnoses of weight loss or symptoms (eg amenorrhoea in female patients). GPs' failure to identify that certain symptoms

Table 2. Eating disorder warning signs[1,2,7,14,18,24]

Behavioural	
• Avoiding eating in public	• Excessive use of the toilet
• Fussy eater/banned foods	• Body checking
• Cooking for others yet not eating	• Constant focus on food, diet and exercise
• Frequent weighing	• Has different meals to rest of family
• Excessive exercise	• Social isolation
• Stressed when unable to exercise	• Calorie counting
• Trains through injury	• Use of diet pills, laxatives, supplements
• Restricted/rigid diet	• Throws away food
• Wears baggy clothing	• Denies problem
• Avoiding meals	• Slow eating/picking at food
• Raiding the refrigerator	• Developing 'allergies' to food
• Eating low-calorie foods	• Eating in secret
Psychological	
• Anxiety, especially in regards to food/eating	• Poor concentration
• Depression	• Perfectionism
• Social phobia/withdrawal	• Low self-esteem
• Distorted body image	• Guilt, especially around food
• Negative body image	• Obsessiveness
• Feelings of lack of control	• Subtle cognitive changes
• Suicidality	• Hopelessness
Physical	
• Sensitivity to the cold	• Dry hair or skin
• Brittle nails	• Lanugo
• Dorsal finger callouses	• Feeling faint, cold or tired
• Stress fractures	• Bone pain
• Muscle cramps	• Injuries due to over-exercising
• Dental caries	• Gingivitis
• Parotid enlargement	• Self harm
• Irregular or cessation of menstruation	• Abdominal pain/distension
• Gastrointestinal symptoms – bloating, nausea	• Early satiety
• Anaemia	• Hypercarotenaemia
• Insomnia	• Halitosis

and signs may represent an eating disorder may preclude early detection. NICE guidelines note that 'diagnosis is often delayed when doctors inadvertently collude by over-investigating and referring to other specialties rather than confronting the possibility of an eating disorder'.[19]

Physical examination and investigation are the next steps in assessment, but there may not be any abnormal physical findings and, often, laboratory results are normal.[7] Table 3 summarises a relevant assessment for a patient with a suspected eating disorder.

Management

The first priority in the management of a patient with an eating disorder is securing medical and psychiatric safety.[2,18] It is prudent to remember that a patient's visible habitus is not a reliable indicator of their medical risk. For example, a patient can have a normal body mass index (BMI) but also have a potassium level of 2.5 mmol/L due to their purging behaviours. In addition, BMI may be normal, but the patient might be at risk because of rapid weight loss or, in children, there may be failure to gain weight.[7,18,22] The criteria for admission to hospital are listed in Table 4.[22]

For most patients who will not need immediate hospitalisation, treatment should be individualised and take place initially in an outpatient community setting, if possible.[14] Decisions surrounding management options are dependent on:[2]

- age of the patient
- symptom severity
- course of illness
- medical stability
- patient motivation
- psychosocial or family support
- regional availability of specialised inpatient/outpatient programs
- associated psychiatric comorbidity.

Other significant factors that influence the necessary treatment interventions are whether identification or presentation occurs early, and the competence of the GP in the field of eating disorders.[16]

A multidisciplinary team approach is often required to manage the physical and psychosocial consequences of the condition. The team could include a psychiatrist, psychologist, paediatrician, dietitian, social worker, psychiatric nurse, community support organisations and other medical specialists (eg endocrinologist, gastroenterologist).[18] The role of the GP includes:[14,18,22,23]

- assessment and initial diagnosis (including urgent referral to the emergency department, if indicated)
- treatment of medical complications (eg iron deficiency)
- nutritional/weight assessment
- referral to appropriate health professionals
- involvement of community or hospital-based mental health services
- education for the patient and their family
- provision of regular ongoing medical monitoring.

The more detailed aspects of management are beyond the scope of this article, but are provided in the list of resources supplied. Certainly, in the scenario of early presentation and diagnosis (or prior to the patient fulfilling diagnostic criteria), education and regular monitoring in the primary care setting may be all that is required to prevent symptom progression.

Conclusion

Eating disorders are serious, life-threatening conditions with significant physical, psychiatric, psychosocial and financial outcomes. The impact of these consequences can be minimised or avoided by early identification and management in the general practice setting. This article outlines an approach to assessment in the primary care setting with an emphasis on early detection. Ideally, this is achieved by a thorough history, a trusting therapeutic relationship between doctor and patient, and intervention before a patient fulfils all of the diagnostic criteria of a particular eating disorder.

Table 3. Assessment of the patient with a suspected eating disorder[7,14,18,19,22–25]

The initial physical assessment should include:

- Height, weight, body mass index (BMI; adults), BMI percentile for age (children)
- Pulse and blood pressure, with postural measurements
- Temperature
- Assessment of breathing and breath (eg ketosis)
- Examination of periphery for circulation and oedema
- Assessment of skin colour (eg anaemia, hypercarotenaemia, cyanosis)
- Hydration state (eg moisture of mucosal membranes, tissue turgor)
- Examination of head and neck (eg parotid swelling, dental enamel erosion, gingivitis, conjunctival injection)
- Examination of skin, hair and nails (eg dry skin, brittle nails, lanugo, dorsal finger callouses [Russell's sign])
- Sit-up or squat test (ie a test of muscle power)

Useful laboratory investigations include:

- Full blood count
- Urea and electrolytes, creatinine
- Liver function tests
- Blood glucose
- Urinalysis
- Electrocardiography
- Iron studies
- B12, folate
- Calcium, magnesium, phosphate
- Hormonal testing – thyroid function tests, follicle stimulating hormone, luteinising hormone, oestradiol, prolactin
- Plain X-rays – useful for identification of bone age in cases of delayed growth
- Bone densitometry – relevant after 9–12 months of the disease or of amenorrhoea and as a baseline in adolescents. The recommendation is for two-yearly scans thereafter while the DEXA scans are abnormal.

Other investigations may be indicated in certain clinical presentations to exclude other differential diagnoses (eg coeliac autoantibodies).

Table 4. RANZCP clinical practice guidelines for the treatment of eating disorders 2014

	Psychiatric admission indicated*	Medical admission indicated†
Weight	Body mass index (BMI) <14 kg/m^2	BMI <12 kg/m^2
Rapid weight loss	1 kg per week over several weeks or grossly inadequate nutritional intake (<100 kcal daily) or continued weight loss despite community treatment	
Systolic blood pressure	<90 mmHg	<80 mmHg
Postural blood pressure	>10 mmHg drop with standing	>20 mmHg drop with standing
Heart rate		≤40 bpm or >120 bpm or postural tachycardia >20 bpm
Temperature	<35.5°C or cold/blue extremities	<35°C or cold/blue extremities
12-lead electrocardiogram		Any arrhythmia including QTc prolongation, non-specific ST or T-wave changes including inversion or biphasic waves
Blood sugar	Below normal range‡	<2.5 mmol/L
Sodium	<130 mmol/L‡	<125 mmol/L
Potassium	Below normal range‡	<3.0 mmol/L
Magnesium		Below normal range‡
Phosphate		Below normal range‡
Estimated glomerular filtration rate		<60 ml/min/1.73m2 or rapidly dropping (25% drop within a week)
Albumin	Below normal range	<30 g/L
Liver enzymes	Mildly elevated	Markedly elevated (AST and ALT >500)‡
Neutrophils	<1.5 × 10^9/L	<1.0 × 10^9/L
Risk assessment	Suicidal ideation Active self-harm Moderate to high agitation and distress	

**Patients who are not as unwell as indicated above may still require admission to a psychiatric or other inpatient facility. †Medical admission refers to admission to a medical ward, short-stay medical assessment unit or similar. ‡Please note, any biochemical abnormality that has not responded to adequate replacement within the first 24 hours of admission should be reviewed by a medical registrar urgently.*
ALT, alanine aminotransferase; AST, aspartate aminotransferase

Admission criteria for children

	Indicators for admission* and specialist consultation	
Medical status	Heart rate: <50 bpm Cardiac arrhythmia Postural tachycardia: >20/min Blood pressure: <80/50 mm Postural hypotension: >20 mm	QTc: >450 msec Temperature: <35.5ºC Hypokalaemia Neutropaenia
Weight	**Children** <75% of expected body weight or rapid weight loss	

Note: These are a guide only and do not replace the need for individual clinical judgement
**For children, admission would generally be to a medical ward. †People may also require admission for:*
- *uncontrolled eating disorder behaviour*
- *failure to respond to outpatient treatment*
- *severe psychiatric comorbidity*

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Resources for GPs

- The Royal Australian and New Zealand College of Psychiatrists' eating disorder guidelines, www.ranzcp.org
- Australian and New Zealand Academy for Eating Disorders (ANZAED), www.anzaed.org.au
- National Eating Disorders Collaboration, www.nedc.com.au
- NICE eating disorder guidelines, www.nice.org.uk
- Victorian Centre of Excellence in Eating Disorders (CEED), www.ceed.org.au
- Eating Disorders Victoria (EDV), www.eatingdisorders.org.au
- The Butterfly Foundation, www.butterflyfoundation.org.au
- Eating Disorders Association Inc Queensland, www.eda.org.au

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